AKONet
Monitoring and supervision software for refrigerated facilities
User manual
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**Introduction**

Welcome to **AKONet**, AKO’s new monitoring, supervision and control software. **AKONet** has been designed since its conception to be accessible and very easy to use, but at the same time very efficient and capable of scaling up to meet the demands of even the largest projects. The objective of this guide is to introduce the software and its architecture, allowing users to start using it as quickly as possible, and subsequently to provide all the necessary resources to get the most out of it. For any questions related to the installation and/or configuration of the devices, please refer to the Quick guide 5012H001 and note 5012H011, or the Quick guide 5014H001 and note 5014H011.

**Quick guide**

**Starting the Application**

To access AKONet you need to open a browser (we recommend Google Chrome) and enter one of the following IPs: the one of the WiFi if you are accessing via WiFi (10.0.0.1); the one you have configured as the device IP if you are accessing through intranet (or without IP and with the name of the device akonet.xxxxxxx.xx); or localhost if you are accessing via TeamViewer. For more information about the different ways to access AKONet, please refer to Appendix I: Akonet connection scenarios (Page 28).

By default, the application responds on port 80 (http).

The default admin user is **superuser** and the password is **superuser**. After entering the user and password, click the Login button and AKONet’s main window will appear.

**Application Work Area**

Whenever you wish to save any changes made, remember to always press the Accept button afterwards.

The application work area is divided into three parts:

**General menu area**

This area contains the most important menu options of the application.

The options are displayed or are hidden according to the permissions of the group the user is assigned to. For more information, see section Users and Groups (Page 10) of this manual.
The menu points are:

**Administration**
In this menu you will find all the application’s setup options, and here you can maintain Users and Groups, Alerts and Alarms, etc.

**Alarm**
This option will open the list of existing alarms, and you can confirm them, print them or change the filters to see the alarm log.

**Facilities**
This option will open a list of all facilities, whether they are Serial or Ethernet, positioned on a map. Clicking on them will allow you to access the services of each one.
To enable this option, check the Geopositioning enabled check box in Administration->General Configuration->General Parameters->System Options (Advanced). There has to be at least one facility.

**Services**
This option displays all registered devices, grouped (using tabs) according to the services to which they belong. This should be the default view of the application.
A service is a functional group of devices, for example, positive or negative cold rooms, and they are created by the client in order to identify the device more easily.

**Devices**
This menu also shows the devices, but in a list format, displaying the most important variables of each one.
In this section you will see that the devices are grouped according to its model:
- AKO Controls, where you will find all the AKO control devices.
- CAMRegis; it will display all the temperature data logger devices.
- AKODUO; the DUO family devices will be displayed.
- CAMAlarms; all the alarms will be listed.
- AKOGAS; all the gas leak detection devices will be listed.

**Graphs**
This option allows you to enter the graph generation Wizard.

**Reports**
You can use this option to obtain all the reports (lists) of the samples of your devices.

**Synoptics**
This option allows you to access the graphical representation module of the facilities.

**Docs Management**
This last option gives you access to where the generated reports are stored.

This manual will provide more information about each of these options below.

Apart from these options, the top menu also has four other icons for the purpose of a series of basic tasks:

- This icon will automatically take you to the application home screen.
  The default view is the Services screen. This option displays all registered devices, grouped (using tabs) according to the services to which they belong.

- When you click this button, the system will save the current screen as the new application home screen for the current user.

- This takes you to the application’s help section.

- Closes the session and returns to the login window.

**Work area**
This is the central application area, and it will be where all the application’s screens are displayed.

**Bottom information bar**
Occurring alarm events are displayed in this area, as well as the date, the time and the current software version.
Administration menu

Clicking on the administration icon will take you to the application’s administration menu. You will see the following Administration screen.

General Configuration

This icon will take you to the main parameters of the application.

Facilities

The facilities can be of two types: Serial (USB AKO-80039) or Ethernet (IP AKO-80080), according to the type of MODBUS connection that has been selected. There can only be one Serial facility and it will always point to the following port: /dev/ttyUSB_485. It is created by default and the Name is the only thing that needs to be changed. However, one can create as many Ethernet facilities as required (up to 12). They are used in cases where there are multiple devices located on various different floors, when there are more than 25 devices, etc. Each one of these facilities should point to the IP address that was previously assigned to the AKO-80080 converter. Remember that in order for the facilities to be used in the application, their Status must be set to Active.

Services

Another important point to bear in mind in the initial configuration is the configuration of the services. A service is a logical way of grouping your facility’s devices. You can create as many as necessary. This step is not compulsory, since AKONet creates the Default service by default. When a new service is added, it will be visible for all User Groups, but you can assign service visibility to specific Groups when the service is added or modified.

In this example, only Viewers, Administrators and Operators would be able to see the devices that belong to the Frozen Cabinets service. None of the other groups would be able to view the service or the devices in it. For more information about the different types of users, see section Users and Groups (Page 10) of this manual.

In order to sort the services, they can be dragged and dropped. More information about the services is provided in section Services (Page 18) of this manual.

Once the service is created, the relevant devices will need to be assigned to it. For more information on how to assign devices to services, please refer to section Devices Registered (Page 12) of this guide.
General Parameters
AKONet’s operation is governed by a series of general system variables. These can be modified by any administrator user. From here, you can access the configuration of all system variables, grouped as follows: Visual Configuration, Data Recording, Application Refresh, Sending of alarms by SMS, Sending of alarms by eMail, Device and System.

Visual Configuration Options

This section includes the variables that affect the display of data relative to the user location, such as the date format, the first day of the week, etc.

<table>
<thead>
<tr>
<th>Option</th>
<th>Setting</th>
</tr>
</thead>
<tbody>
<tr>
<td>Long date format</td>
<td>dimY M d</td>
</tr>
<tr>
<td>Short date format</td>
<td>dimY</td>
</tr>
<tr>
<td>First day to display in calendars</td>
<td>Monday</td>
</tr>
<tr>
<td>Languages for the server messages</td>
<td>English</td>
</tr>
<tr>
<td>Default order for result lists</td>
<td>DESC</td>
</tr>
<tr>
<td>Stylesheet for the application (requires rebooting)</td>
<td>Original</td>
</tr>
<tr>
<td>Background color for charts (requires rebooting)</td>
<td>grid</td>
</tr>
<tr>
<td>Show all devices in one tab</td>
<td>Yes</td>
</tr>
</tbody>
</table>

Data Recording Configuration

The variables in this section determine the way in which AKONet is going to obtain log records.

Events refer to alarms. You will find more information about them below.
Sample generation mode

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interval in minutes between samples</td>
<td>If the previous parameter is set to General interval, this interval can be established here. Be careful, entering very small values would not be advisable (one minute for example). This will affect the performance of the application. Intervals of 15 minutes are recommended.</td>
</tr>
<tr>
<td>Number of variation units required for logging of new samples</td>
<td>In case of a General interval, this parameter will allow you to obtain extra samples if a device reaches a certain number of variation units. For example, all devices take samples every 15 minutes, but you have indicated that extra samples should be logged if they vary in over one degree. If a device goes from 0 °C to 1 °C, this sample will be logged.</td>
</tr>
<tr>
<td>Number of months for sample storage</td>
<td>This parameter refers to the number of months samples will be stored in the database. Adapt according to your needs, up until a maximum of 120 months (or 10 years). Storage of 36 months is recommended.</td>
</tr>
</tbody>
</table>

Application Refresh

### Application Refresh

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refresh of devices in the Device List display</td>
<td>This allows establishing the number of seconds it will take for data in the Device List screen to be updated. Be careful, setting very low values will have a negative impact on performance.</td>
</tr>
<tr>
<td>Refresh of the devices in the Services display</td>
<td>This allows establishing the number of seconds it will take for data in the Services screen to be updated. Be careful, setting very low values will have a negative impact on performance.</td>
</tr>
<tr>
<td>Refresh of the elements contained in a Synoptic</td>
<td>This allows establishing the number of seconds it will take for data in the Synoptics screen to be updated. Be careful, setting very low values will have a negative impact on performance.</td>
</tr>
<tr>
<td>Refresh for Alarm notification</td>
<td>This allows establishing the number of seconds it will take for Alarm notification data to be updated. Be careful, setting very low values will have a negative impact on performance.</td>
</tr>
</tbody>
</table>

SMS Configuration

### SMS Configuration

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sending messages by SMS</td>
<td></td>
</tr>
<tr>
<td>Communications port where the GSM modem is assigned</td>
<td><code>/dev/ttyUSB_SMS</code></td>
</tr>
<tr>
<td>SIM supplier message service centre</td>
<td></td>
</tr>
<tr>
<td>Liberal that will be attached as the header of the SMS in the event of sending an alarm</td>
<td></td>
</tr>
<tr>
<td>Liberal that will be attached as the footer of the SMS in the event of sending an alarm</td>
<td></td>
</tr>
</tbody>
</table>

Here, you can configure a series of necessary variables for the correct functioning of SMS notifications. See also sections Mobility configuration (Page 15) and Alarm (Page 17) of this manual.

If you have purchased the AKO-52043 GSM Modem, AKONet will be able send alarm notifications via SMS, but in order to do so, you should tick the Sending messages by SMS box, as well as enter `/dev/ttyUSB_SMS` as Communications port. The other fields have to be left unfilled. The PIN code of the Modem SIM card must be removed. For any questions related to the SMS Configuration, consult the AKO-52043 manual.

Click Accept to confirm the changes made and hit the Test button to check the sending of the SMS notifications.
After confirming the parameters, the server will need to be rebooted in order for the changes to take effect.

**eMail Configuration**

<table>
<thead>
<tr>
<th>Sending of SMS messages</th>
<th>This box should be ticked for AKONet to send alarms via SMS.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Communications port the GSM Modem is assigned to</td>
<td>If the AKO-52043 GSM Modem is connected through USB, AKONet will recognise it automatically and will assign it to this field.</td>
</tr>
<tr>
<td>Literal that will be attached as the header of the SMS in the event of sending an alarm</td>
<td>This allows for the adding of a default SMS header text.</td>
</tr>
<tr>
<td>Literal that will be attached as the footer of the SMS in the event of sending an alarm</td>
<td>This allows for the adding of a default SMS footer text.</td>
</tr>
</tbody>
</table>

In order for AKONet to be able to send eMails, the computer on which the application is installed needs to have internet access.

Click **Accept** to confirm the changes made and hit the **Test** button to check the sending of the eMail notifications.

<table>
<thead>
<tr>
<th>Use default parameters</th>
<th>This box should be ticked for the service to work correctly.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sending messages via eMail</td>
<td>This box should be ticked for the service to work correctly.</td>
</tr>
<tr>
<td>Number of days the sent eMail records will remain</td>
<td></td>
</tr>
<tr>
<td>Literal that will be displayed in the Subject of the eMail on sending an alarm</td>
<td></td>
</tr>
<tr>
<td>Literal that will be attached as the header of the body of the message of the eMail on sending an alarm</td>
<td></td>
</tr>
<tr>
<td>Literal that will be attached as the footer of the body of the message of the eMail on sending an alarm</td>
<td></td>
</tr>
</tbody>
</table>

After confirming the parameters, the server will need to be rebooted in order for the changes to take effect. For more information, see Appendix I: Akonet connection scenarios (Page 28).

**Device Options (Advanced)**

<table>
<thead>
<tr>
<th>Device Options (Advanced)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Generate alarm if communication errors occur</td>
<td></td>
</tr>
<tr>
<td>Number of communication errors to generate a communication alarm</td>
<td>300</td>
</tr>
<tr>
<td>Change a device to Offline mode if communication errors are generated</td>
<td></td>
</tr>
<tr>
<td>Number of errors to change a device to offline mode</td>
<td>3000</td>
</tr>
<tr>
<td>Send alarms when the device goes to offline mode</td>
<td></td>
</tr>
</tbody>
</table>

These advanced options control a series of parameters related to the application behaviour in case of communication, or modbus, errors between the devices and AKONet. See also section Alarm (Page 17) of this manual.
This last group contains parameters for the configuration of a series of general features related to application performance.

### Generate alarms if communication errors occur
This feature allows enabling or disabling alarm generation in the case of communication errors with any given device.

### Number of communication errors to generate a communication alarm
If the previous parameter has been enabled, this parameter indicates how many errors should occur before alarm generation is triggered.

### Change a device to Offline mode if communication errors are generated
This check box allows for the removal of a device from the network in case of communication errors.

### Number of errors to change the device to Offline mode
If the previous parameter has been enabled, this parameter indicates how many errors should occur for any given device to be taken Offline.

### Send alarms when the device goes to Offline mode
If this feature is checked, the system will send an eMail alert after taking the device Offline.

#### System Options (Advanced)

![System Options (Advanced) Options]

- **Send messages when the alarms are disabled**
  - When activated, an alarm generated by a device which was subsequently solved (for example, a maximum alarm), will trigger the system to send a notification with the information that the alarm does not exist anymore.

- **AKO Live Update Enabled**
  - AKONet is equipped with an automatic update functionality in order to guarantee your version of AKO is the most recent one at all times.
  - When activated, the system will check for new updates every 8 hours.
  - In order to download and install the updates correctly, the computer on which the application is installed needs to have internet access. Remember that while an update is being executed, the system will be temporarily down and users will not be able to access it until the process is finished.

### Document Folders

The document management module allows for the storage of all your facility related documentation within AKONet, for example, sample reports, graphs, etc.

From here, you can access the configuration of your document folders. They can be organised as desired. Just give them a **Name** and a **Description**. The URL refers to the storage path of the documents, that is, the folder on the Linux server where the documents will be stored.

**This step is not compulsory, since AKONet creates the Default folder by default.**

More information about document management is provided in section Docs Management (Page 28) of this manual.
Users and Groups

This icon will take you to the configuration screen of the application users and groups.

In order to create the users and groups of users needed for the correct functioning of the application, the goal is to register those users who:

- Are going to access the application.
- Will need to be notified via SMS or via eMail in case of any system alarms.
- Will need to receive reports via eMail.

Before creating the users, it is important to set up groups of users and assign permissions to them; in other words, it is important to prevent users from having unrestricted access to the application.

Maintenance of Groups

To create the user groups, go to the Groups tab.

Careful, the Administrators group should not be deleted yet, as doing so would remove the superuser.

A series of AKONet functions can be assigned to each group of users:

- **Administration**: this option allows or denies access to the administration menu, and enables or disables the synoptics create and edit options, the document maintenance option in the document management module, and, in general, any option for the purpose of deleting general features.
- **Device Configuration**: this option provides access to the modification and configuration of device variables.
- **Set Point**: this option provides access to the modification of service temperature Set Points.
- **Access to Graphs**: Access to the graph generation function can be allowed or denied using this option.
- **Access to Synoptics**: Allows or denies access to the synoptics module.
- **Access to Reports**: This option controls which users should get access to the reports module.
- **Access to Doc. Man.**: This option controls which users should get access to the document management module.

Three groups are created by default: Administrators, Operators and Viewers. The creation of further groups is not generally required, although they can of course be created as desired.

- **Administrators**, with unrestricted access to the application.
- **Operators**, with access to everything except for the Administration option; all users who need to modify system variables, such as Set Points, should be included in this group.
- **Viewers**, with no access to Administration and Device Configuration; all users whose daily job consists exclusively of monitoring tasks, and who in no case should have access to the modification of system variables, should be included in this group.

Maintenance of Users

After registering all required groups, it is time to create the users who are going to use the system. To do so, go to the Users tab.

Click New to add new users. This button will take you to a pop-up window for the registration of said users. Here, you should include all the user data. You should pay special attention to the group you assign the user to.

Make sure you fill in the eMail and Mobile Telephone fields correctly so that the user may receive alarm notifications via eMail and/or SMS. For more information, see section Mobility Configuration (Page 15) of this manual.

To configure which users should be allowed to view facilities, click on the Permissions button and select the relevant facilities from the list of those available.
LAN Configuration

This icon will take you to the configuration screen of the LAN configuration.

You will see the following LAN Configuration screen.

The IP must be static, that is, fixed. It does not change. To do this, the property must provide the following information: AKONet IP, Network Mask, Gateway, DNS1 and DNS2. This data should be provided by the network administrators. Do not change any values unless requested by a network administrator. For more information, see APPENDIX I: AKONET CONNECTION SCENARIOS.

In case of internet access problems (Internet Access: Error), in case of eMail delivery failures for example, contact the network administrators.

Datetime and Timezone

This icon will take you to the datetime and timezone configuration screen.

It allows you to configure the date and time options of the application; which is particularly important for the data log to be consistent.

These parameters are configured during the installation, but they can be changed as needed.

Search for Devices

This icon will take you to the screen for you to search for devices registered in the network.

You will see the following Search for Devices screen.

Here, you can see the facilities as well as the MODBUS addresses from Start to End. This is where AKONet is going to search for AKO devices registered in the network. You can apply filters to limit the search results.

When clicking on Search for Devices and after waiting a few moments, a list with all devices found is shown. The time is takes to complete the search depends on the range of addresses to search, the number of devices found, etc. After the search, save any changes made to the list of devices. They will automatically appear among the Devices Registered (see next section). Renaming them to make them more easily identifiable is recommended.

If the devices found are already in the Devices Registered list, it will not be possible, nor necessary, to save the list.
For more information related to the configuration of the devices, refer also to the Quick guide 5012H001 and note 5012H011, or the Quick guide 5014H001 and note 5014H011.

Devices Registered

This icon will take you to the configuration screen of the devices registered in the application.

Apart from the automatic search for devices, you also have the option to manually register devices connected to the modbus network, using the AKO-80039 converter.

To do so, hit the New Device button.

The parameters are the following:

- **Facility:** If you have purchased AKONet, you can select the facility the device is assigned to from the dropdown menu. If not, stick to the default facility.
- **Service:** This will display all the previously registered services. Pay attention to the service you assign the device to.
- **Name:** Include a text that identifies the device, for example, Frozen Food, Vegetables, etc.
- **Bus address:** You should indicate the bus address of the device you are registering. Remember bus addresses have to be unique within a single facility.
- **Model:** Assign the exact device model.
- **Serial Number:** Enter the device serial number. This is not compulsory.
- **Generate DataLog:** If you select Yes, the system will obtain samples and log them to be able to generate graphs and lists later on. In case you only want to monitor and are not bothered about logs, select No.
- **Status:** For AKONet to be able to communicate with the device, it needs to be set to Active. If it is Inactive, it will be saved in the database, but no communication attempts will be made.
- **Location:** You can assign a more specific location for the purposes of control.

Once a device is registered, it will appear in the list of registered devices.

If it is a device with memory, CAMRegis dataloggers for example, the logs will start downloading automatically.

From then on, the registered device will appear in AKONet.

For more information about devices, see section Devices (Page 19) of this manual.
Task Planner

This icon will take you to the task planner configuration screen.

AKONet's Task Planner functionality allows you to execute scheduled tasks according to a calendar. There are three types of tasks that can be scheduled: automatic report generation, device feature modification and backups.

Automatic Report Generation

Automatic report generation serves to schedule tasks for the systematic generation of reports based on parameter data from one or several specific devices. The user thus remains exempt from having to obtain these logs manually.

For example, a task can be scheduled so that at the beginning of each month, samples from a given device are sent by mail and saved in the document management module.

In order to do so, the scheduled task creation window contains the following features:

- **Name**: Free text for the purposes of identifying the task later on.
- **Description**: Free text for the purposes of identifying the task later on.
- **Colour**: Colour for the purposes of identifying the task later on.
- **Starts on**: Sets the date and time for the first execution of the task.
- **Type**: For reports, select Report.
- **Document Type**: Format in which the report will be saved.
- **Select the destination of the report**: Here, you can decide how to send the report, and it can be sent to:
  - Document Management, by selecting the destination folder. For details on the configuration of Folders, see Document Folders.
  - eMail address, by filling out one or several addresses, separated by commas.
- **It is repeated**: Select how often the task will be repeated. The possible options are: every day, every week and every month.
- **Ends on**: Indicate when the task should end, by choosing a specific date.

After registering the report, a window will be displayed for the selection of parameters to be included in the report.

You can select any registered device; selecting a specific one will automatically load all properties which generate the logs for the selected device.
**Device Feature Modification**

Device feature modification serves to schedule tasks which involve communication with devices, such as the systematic modification of set points.

In order to do so, the scheduled task creation window contains the following features:

- **Name:** Free text for the purposes of identifying the task later on.
- **Description:** Free text for the purposes of identifying the task later on.
- **Colour:** Colour for the purposes of identifying the task later on.
- **Starts on:** Sets the date and time for the first execution of the task.
- **Type:** For the modification of device features, select Device Control.
- **It is repeated:** Select how often the task will be repeated. The possible options are: every day, every week and every month.
- **Ends on:** Indicate when the task should end, by choosing a specific date.

After registering the report, a window will be displayed for the selection of device parameters to be modified and for the setting of target values after task execution.

**Backups**

This functionality serves to schedule tasks for the systematic generation of backups. By default, AKONet performs weekly backups.

In order to do so, the scheduled task creation window contains the following features:

- **Name:** Free text for the purposes of identifying the task later on.
- **Description:** Free text for the purposes of identifying the task later on.
- **Colour:** Colour for the purposes of identifying the task later on.
- **Starts on:** Sets the date and time for the first execution of the task.
- **Type:** For backups, select Backups.
- **Select the destination of the report:**
- **It is repeated:** Select how often the task will be repeated. The possible options are: every day, every week and every month.
- **Ends on:** Indicate when the task should end, by choosing a specific date.
Alerts and Alarms

This icon will take you to the alerts and alarms sending logs.

This is where the successfully sent alarms are stored. See also section 4 Alarm of this manual.

Alarms can be resent by pressing the Resend button.

Mobility Configuration

This icon will take you to the mobile, eMail and SMS access configuration screen.

The sending of messages by SMS or eMail can be enabled or disabled for every AKONet user, as well their access from mobile devices. By default, a newly registered user is given permission to be notified by SMS as well as by eMail and is able to access the application using mobile devices.

Use the Yes and No buttons to enable or disable access to each of the abovementioned functionalities.

In order for users to be able to receive SMS messages and/or eMails correctly, 3 conditions must be fulfilled:
1. The user must belong to a group with access to the relevant information
2. The user Mobile Telephone and/or eMail fields must be filled out correctly
3. The Send SMS and/or Send EMail boxes must be checked.
Backups

This icon will take you to the system backup management screen. AKONet provides tools for the generation and restoration of backups. This option is only accessible for users with administration rights and is not available in demo mode.

Generate Backup

From the Generate Backup tab, you can generate new backups. By pressing the Execute button, the system will back itself up (this process might take some time, depending on the volume of information to be backed up) and once this is finished, you will see this icon:

Click on it to download the file onto your computer and save it for future reference.

Restore Backup

To restore a backup file, follow the following steps:

1.- Copy the akonet-backup.bak backup file to the /home/debian/akonet folder
2.- Open a terminal and execute:  
   cd /home/debian/akonet
   sudo ./restore.sh

Modbus Testing

This icon will take you to the testing of the devices on the modbus line.

To find out if whether the connection between AKONet and the various registered devices is working properly, the application will launch a MODBUS request to all the devices connected to the network. In response, said devices will display their MODBUS address and show a green and red icon, equivalent to RX/TX.

This screen contains the filters by which AKONet will launch the request.

Remote Access (via TeamViewer)

This icon will take you to TeamViewer.

TeamViewer is an external tool for accessing the remote Linux desktop. By clicking on it, you activate it (1). You can assign your own Password (2) and the red icon contains the TeamViewer ID with which you must connect (3).

With this information (ID and Password) you will be able to access the remote desktop through TeamViewer.

For more information, see Appendix I: akonet connection scenarios (Page 28).
Alarm

Clicking on the alarm icon will take you to the application’s alarm menu.

You will see the following Alarm screen.

An important element of AKONet is the possibility to emit Alarms via eMail and SMS. For details on the configuration of Alarms, see General Parameters (Page 6).

AKONet is designed to be able to satisfactorily manage any exception which might arise in a facility and to do so it detects device alarms and provides different ways of notifying users of these exceptions:

- Bottom alarm notification bar: The software provides a bottom bar with alarm information in real time.

This control is updated automatically, according to configurable intervals.

By clicking on an alarm in the bottom bar, you open a pop-up window with the alarm details. You will be able to:

- Access the device by pressing the See Device button.
- Confirm the Alarm, this will stop the alarm from being displayed in alert format to all users.
- Pop-up messages: When an alarm goes off, AKONet displays it to all users by means of a pop-up message. By clicking the AKONet message, more information will be shown, together with the Confirm and See Device options.

The generated alarms will be sent via:

- eMail.
- SMS (if the software is purchased together with the GSM Modem).

Facilities

Clicking on the facilities icon will take you to the application’s facilities menu.

This option will open a list of all facilities, whether they are Serial or Ethernet, positioned on a map. Clicking on them will allow you to access the services of each one.

To enable this option, check the Geopositioning enabled box in Administration->General Configuration->General Parameters->System Options (Advanced). There has to be at least one facility.
Services

Clicking on the services icon will take you to the application’s services menu.

You will see the Services screen. The services menu option allows you to visualise graphically the state of a facility. This screen is divided into tabs, one for each service you have registered and a further two tabs which display all devices and those that are Offline. For details on the configuration of Services, see Services (Page 18).

In this example, two services have been registered in AKONet: Frozen Cabinets and Positive Cabinets; two further tabs, All and Devices Offline, are shown.

When you click on a service, the application will display the devices that belong to that service.

This window is automatically updated after a certain period of time. You can define this yourself in the general parameters (Administration->General Configuration->General Parameters->Application Refresh->Refresh of the devices in the Services display). By default, this parameter is set at 30 seconds.

You will be able to follow up on changes in the current state of the facility in this window.

Devices are shown in the following format:

Devices, such as CAMRegis, with a higher number of probes and no relay statuses, are shown in the following way:

By clicking on a device, further device details will be shown. In case of a device alarm, the device background will be displayed in red. In case of device communication errors, the device background will be displayed in orange.
Devices

Clicking on the devices icon will take you to the application’s devices menu.

You will see the following Devices screen.

The Device List displays the devices in a list format. This screen is divided in tabs, one for each device type. There are five types: AKO Controls, CAMRegis, AKODUO, CAMAlarms and AKOGAS. For more information on the configuration of Devices, see Devices Registered (Page 12). This division is pertinent because of the different display formats of each device type, due to the fact that the important data is different for each group. Moreover, there are two view types: one Normal, and the other Technical. Therefore:

AKO Controls displays:
- Alarm icon, which indicates whether there are device alarms, and how many.
- Facility to which it belongs.
- Service to which it belongs.
- Device name.
- In technical view, bus address.
- Device model.
- Set Point value.
- COOL relay status.
- In technical view, DEFROST relay status.
- In technical view, FAN relay status.
- Probe 1 value.
- In technical view, Probe 2 value.
- In technical view, Probe 3 value.

AKOGAS displays:
- Alarm icon, which indicates whether there are device alarms, and how many.
- Facility to which it belongs.
- Service to which it belongs.
- Device name.
- In technical view, bus address.
- Device model.
- Gas concentration.
- Internal temperature.
- Remote mute.
- Remote set hold.
- Hit the See Device button in order to access further device details for each of the five groups of devices.

CAMRegis displays:
- Alarm icon, which indicates whether there are device alarms, and how many.
- Facility to which it belongs.
- Service to which it belongs.
- Device name.
- In technical view, bus address.
- Device model.
- Probe values, up to 10 (depending on the specific model, more or fewer probes will be displayed).

AKODUO displays:
- Alarm icon, which indicates whether there are device alarms, and how many.
- Facility to which it belongs.
- Service to which it belongs.
- Device name.
- In technical view, bus address.
- Device model.
- Probe values, up to 5 (depending on the specific model, more or fewer probes will be displayed).

CAMAlarms displays:
- Alarm icon, which indicates whether there are device alarms, and how many.
- Facility to which it belongs.
- Service to which it belongs.
- Device name.
- In technical view, bus address.
- Device model.
- Input, up to 4.

Hit the See Device button in order to access further device details for each of the five groups of devices.
Device detail display

Device details are displayed in tabs where you can easily access all relevant data, such as alarms, temperatures, relay statuses and graphs. On the left, you can see the Current Values of the probes and all digital input.

Likewise, general device data is displayed here: the Facility to which the device belongs, the Service, the Name, the Address, the Model and the Serial Number. The Status indicates whether the device is Active or not, that is, whether it is currently communicating at the MODBUS level or not. On the right, you can see the Statuses of the device relays and the Remote control’s virtual keypad. It also indicates whether or not the device has any Alarms; and if there are, it shows how many. In case of multiple Alarms, only the first one is displayed.

For each type of device, there are several buttons which carry out different actions. All devices have Return, Update, Change Set Point (provided that the selected device has SP properties) and Probe Configuration buttons (although the labels of the buttons may vary). But other buttons may be available.

The bottom half of the screen displays device data as graphs. By default, data from the last three days is shown, but you can select other relevant data by using the filters.

The other tabs provide access to the most important tasks. These are:

- Device configuration (download confirmation is required).
Device variable graphs (click Generate).

You will find more information about the graph viewer below.
Graphs

Clicking on the graphs icon will take you to the application’s graphs menu.

The Graphs menu option allows showing sample information from different devices in a graph format. In order to do so the system provides a Wizard in three levels:

1. **Device Selector:**
   - You can select any registered device; selecting a specific one will automatically load level 2.

2. **Feature Display:**
   - This level will display all the selected device properties which generate logs. Select one and go to level 3.

3. **Selected Features:**
   - All selected features will be included here. It is possible to incorporate features from different devices.

By clicking the Generate button, you open the graph viewer window:

In this example, you can see the combined values of two AKO devices: one with temperature and humidity sensors (AKO-16624) and another with a universal gas detector (AKO-575400).
The graph allows carrying out the following options:

- **Series activation and deactivation:** Click on series in the legend to toggle between their activation and deactivation.
- **Zoom:** Select a part of the graph to generate a zoom. Hit All to go back to the original selection.
- **Changing the scale of the horizontal axis:** At the bottom of the screen, there is a second way to select date intervals and thus adjust the scale of the horizontal axis, also known as the x-axis. Again, click All to return the graph to its original selection.
- **Selection Range:** Pick the date range by selecting the relevant month from a dropdown menu and hit Apply.
- **Filter button:** Click Filter and pick the date range by selecting the Since and To dates from the calendars in the pop-up window.
- **Update button:** Click Update to apply the filters and update the graph data.
- **Return button:** Click this button to go back to the previous screen.
- **Export button:** Click this button to download the graph in PDF format.
- **List button:** Click this button to display the data in a list format. Hit the Excel button to download the list in .xlsx format.

**Reports**

Clicking on the reports icon will take you to the application’s reports menu.

Reports allow you to extract information from registered device parameters, on the sole condition that the device DataLog option has been enabled. For details on the configuration of Registered Devices, see Devices Registered (Page 12). The data will appear in a list format.

The main window is divided into two tabs, which will facilitate the extraction of specific data. The tabs are Other Reports and Advanced Report.

**Other Reports**

This screen allows us to obtain information from the samples that have been extracted from different devices in the form of sample reports; and it allows us to extract lists of alarms, as well as access audit reports.

**Sample Reports**

AKONet provides a Wizard to obtain information from the samples that have been extracted from different devices in the form of reports. There are three levels:
- **Level 1. Device Selector:**
  You can select any registered device; selecting a specific one will automatically load level 2.

- **Level 2. Feature Display:**
  This level will display all the selected device properties which generate logs. Select one and go to level 3.

- **Level 3. Selected Features:**
  All selected features will be included here. ***It is possible to incorporate features from different devices.*** Hit Clean to remove the selected features and start over.

By clicking the Generate button, you open a date range selection window where you can pick the date range by selecting the since and to dates from the calendars; hit Generate again to go to the report screen.

![Sample Report](image)

This screen contains four buttons to export the list: you can export to **Docs Management** (in PDF format), you can send the report via **eMail** (in PDF format) or download it directly onto your computer in either Excel or PDF.

By pressing the **eMail** button, the application will take you to the user selection window, where you can select users with correctly filled out eMail fields (see Maintenance of Users, page 10); if you press **eMail** again, the report will be sent directly via mail.

### Alarm List

![Alarm List](image)

This screen displays a list of all alarms. For more information, refer to Alarm (Page 17).

### Access Audit Reports

![Access Audit Reports](image)

This screen displays an application access log in a list format. You can access the Date of Access, the User, the IP Address and the Type of Access. You are able to download the list in PDF and you can remove the entire log by pressing **Delete**.

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Advanced Report

The Advanced Report screen also lets you gather information from the samples that have been extracted from different devices. Here, you have to select the relevant parameters to list in a different way.

You can select any Facility; selecting a specific one will load the Services that belong to it. Select one and all its Registered Devices will appear. Select one of the Devices and you will be shown a list of all Parameters for which the device DataLog option has been enabled. Hit Add to confirm the selected parameters. They will immediately appear on the right and will be included in the report. It is possible to incorporate properties from different devices.

By selecting Parameters and clicking Delete, you will remove the selection. By pressing the Clean button, you will remove all selected parameters you will be able to start over.

You can pick a specific date range by selecting the relevant month from the dropdown menu.

Click Generate to go to the report window.

Synoptics

Clicking on the synoptics icon will take you to the application's synoptics menu.

The Synoptics module is in charge of equipping AKONet with HMI (Human Machine Interface) functions. These functions allow users to display the information of their facility graphically using a group of controls that simulate the devices in it, dynamically.

The functions of the new synoptic module are:
- The loading of an image to represent the drawing or structure.
- The freehand drawing of a drawing or structure.
- The representation of industrial controls using specific libraries.
- The graphical representation of AKO device variables can be included in this image (temperatures, relay statuses, alarm statuses, etc.).
- Easy access to the details of the device (current status, graphs and remote configuration).
Synoptics Design

Click on the Edit button to see the following Synoptic Edition screen.

Press the New Synoptic button to create a new synoptic.

AKONet allows generating two different types of synoptics:

- Using a background image; this mode allows including a background image to represent the scenario you want to represent.
- Using a freehand drawing (only available in browsers with SVG support such as Mozilla or Chrome); in this case AKONet allows creating freehand drawings.

When a new synoptic is created, you have to define the type of synoptic you want to it to be. On top of this, the synoptic will need to have a description as well as an icon to represent it.

The synoptics design tool provides an easy and intuitive way to generate a range of synoptics, from simple representations of the facility to complex animations.

- Allows including free text.
- Allows including a real device parameter value.
- Using this control, previously created icons (like relay statuses, alarms, etc.) can be included.
- Allows creating objects based on the application's icon library. Using this option, you can include controls that change their behaviour (colour) depending on the values the device parameters take.
- Clicking this icon, all the objects created in the synoptic can be moved.
- Clicking this icon, the objects can be resized.
- Clicking this icon allows you to delete the next object you select from the synoptic.

If you are creating a synoptic with freehand drawing, the designer will display the following buttons:

- Allows drawing a line.
- Allows drawing a rectangle.
- Allows drawing a circle.
- Allows drawing an ellipse.
- Stops the drawing control.
- Opens the drawing options window, where you can select the fill colour and thickness of the line.
Docs management

Clicking on the documents icon will take you to the application’s docs management menu.

The document management menu lets you save and recover documents related to facilities, such as reports, images, PDF documents, etc. in an effort to centralise all available information.

The document manager organises these files in folders and these can be created as desired. For more information on the configuration of Folders, see Document Folders (Page 9).

When you select docs management from the main menu, a screen will be displayed with all registered folders; each folder is defined by a name and a description, as well as the number of documents it contains.

When you click on a folder, the application will display the relevant documents in a list format.

A folder called All, which contains all existing documents, is also included.

The document list screen allows the option of applying filters to the results, allowing to search on specific text string contained in the document title.

Clicking the button will download a copy of the file onto the computer. Clicking the button will delete the device from the document management module (only for administrators).

New Document

Two methods can be used to insert new documents:

- The New Document option will allow uploading any document from the user’s disk to AKONet, directly from the document management module. To do so, click the New Document icon that will appear in the new document generation window.
- From the lists windows. A button called Docs Management will appear above all lists in the application; clicking it will open a window for uploading the document. In this case, the system will create the document.

For these two options, the following window will be displayed:

- **Group (or folder):** Where you can select the folder where you want to insert the document using a dropdown menu.
- **Name:** Free text field used to enter the document title.
- **Description:** Free text field for adding a small explanatory description for the document.
- **In option 1, Document:** Field for uploading the document to the system.
Appendix I: Akonet connection scenarios

This appendix puts forward a summary of the possible ways to connect AKONet to the client’s local NETWORK. Although different scenarios are included in order to have a global overview, the recommended scenario is number 3, which is an Ethernet-TCP/IP connection with Internet access. This is the scenario in which AKONet will perform best.

Before opting for a specific scenario, the local NETWORK Administrator will have to provide you with the necessary IPs and permissions necessary for its correct use.

1.- No Ethernet-TCP/IP connection, only WiFi

1.1.- IP configuration

In this scenario, be advised not to change the WiFi IP, which is 10.0.0.1. In other scenarios, in which there is an Ethernet connection and the related IP belongs to the same IP range, as in 10.0.0.x, you may change the WiFi IP to the following address: 10.0.0.1/wifi, in order to avoid conflicts.

![Configure WiFi parameters.](image)

1.2.- Local access to the application

Connecting a screen (HDMI) and a keyboard/mouse via USB. Open the browser (AKONet icon) and type in localhost.

Via WiFi, it is possible to access AKONet by connecting to AKONet’s own WiFi network. Password akonet123. Open any browser and type in the IP, 10.0.0.1 (by default, if it has not been changed in 1.1).

1.3.- Remote access to the application

Not possible.

1.4.- Mailing

Not possible.

1.5.- Automatic software updates

Not possible.

1.6.- Third party integration via SQL query AKONet Database

Not possible.
2.- Ethernet-TCP/IP connection, without Internet access

2.1.- IP configuration
Be advised to configure the Ethernet IP as static, that is, fixed. It does not change. In order to do this, the local NETWORK Administrator will have to provide you with the following information:
AKONet IP, Network mask, Gateway, DNS1 and DNS2. The address to change the Ethernet IP is 10.0.0.1/ip; or, from the AKONet application, Administration menu, LAN configuration.

2.2.- Local access to the application
From any computer in the client’s local network (in the same Ethernet network as AKONet). Open any browser and type in the IP that has been configured.
See 1.2.

2.3.- Remote access to the application
It is only possible to connect via VPN (Virtual private network) if the client has got one and can provide you with the software to install it on your PC. Once the VPN has been established, open any browser on your PC and type in the IP that has been configured in 2.1.

2.4.- Mailing
This is only possible if the client has got an SMTP server (a mail server accessible from the AKONet IP). The following information must be provided:
Mail account that can send mails, user, password, SMTP server IP and SMTP server port. Log into AKONet and from the Administration menu, go to General Configuration, General Parameters, eMail Configuration.

2.5.- Automatic software updates
Not possible.

2.6.- Third party integration via SQL query AKONet Database
You can launch queries via SQL to the AKONet database (PostgreSQL) from a server in the client’s network. This database has the same IP as AKONet and the port is 5432. You will be able to access all device data and related alarms in real time.
3. - Ethernet-TCP/IP connection, with Internet access

3.1.- IP configuration
See 2.1.

3.2.- Local access to the application
See 2.2.

3.3.- Remote access to the application
- AKONet comes with the Teamviewer v11 client installed. To activate it from the Administration menu, click on the Teamviewer icon (1), assign it the password of your choice (2), and obtain the Teamviewer ID with which to connect from the red icon (3).

1.- Activate TeamViewer
2.- Assign Password of your choice
3.- Obtain TeamViewer ID

- The client has to obtain a public IP (visible from the internet) from their Internet access provider (such as Mobistar, Vodafone, etc.). The client’s IT personnel has to modify the Router from which they connect to the Internet so that when an HTTP request arrives at the public IP, that request is redirected to the local AKONet IP (see 2.1.). The external (public) port can be whichever one the client chooses, e.g., 8080, but the local (internal) port is 80 (where AKONet is installed).
- An example of a public IP: AKONet in: http://212.170.29.66:8080/, where the public IP is 212.170.29.66, the public port is 8080, the local IP is 192.168.70.251 and the local port is 80.
- Through the use of dynamic DNS (e.g., DynDNS), if the client has got a router that supports dynamic DNS, AKONet can be configured so as to allow access from a URL that points to the public IP of the router. The client has to have a dynamic DNS service and has to map AKONet to the local IP in the same way as a public IP.

3.4.- Mailing
AKONet has an SMTP mail server in the Amazon Cloud to be able to send mails easily. The URL and the port of the SMTP server are:

email-smtp.eu-west-1.amazonaws.com Port (465)

Simply configure eMail from the Administration menu, General Settings, General Parameters, eMail Configuration and choose the default parameters option.

If the client wants to use another SMTP server, it can be configured as explained in 2.4.

3.5.- Automatic software updates
Automatic software updates will be performed automatically, looking for possible new versions every 8 hours.
The URL of the server and the port (80) where the update file is located is:

http://update.ako.com/akosoft/akonet/akoupdate5012/akonet.tgz, puerto (80)

3.6.- Third party integration via SQL query AKONet Database
See 2.6.
We reserve the right to supply materials that might vary slightly to those described in our Technical Sheets. Updated information is available on our website.