Quick Guide to AKONet Web Server Wiring
Web Server for the management and maintenance of refrigeration facilities

Connection

The connection between the AKO-5012 / 5014 web server, and the AKO devices in the refrigerated facility, must be done using one of the following converters:

AKO-80039 (Maximum of one converter per AKO-5012 / 5014)
Type: RS-485 to USB converter
Power supply: Self-powered by USB port
ADVANTAGES:
• Included in the AKO-5012 / 5014.
• No external power supply required.
REMARKS:
• A repeater is required for every 25 connected devices. Maximum range 1000 m.
• It does not allow the same web server for various remote facilities to be shared.

AKO-80080 (Maximum: 10 converters per AKO-5012, 2 converters per AKO-5014)
Type: Converter RS-485 to Ethernet (TCP/IP)
Power supply: 196 - 253 Vac
ADVANTAGES:
• It allows available network infrastructures to be used.
• It enables the same web server for various remote facilities to be shared, either via its own infrastructure (Ethernet network) or via internet (with public IP).
REMARKS:
• Not included in the AKO-5012 / 5014.
• It requires an IP address.

WARNINGS
For connection between AKO devices use AKO-15586 shielded cable. If you do not have any, use shielded tubing with three wires with a section of 0.5 mm² as shown in the figure.
Connect the mesh to earth only at the end nearest to the web server, the other must remain free.
Do not confuse the GND with the mesh (ground connection). Terminating resistors are not required.
It is important that the data cables are laid independently and far from the power and power supply cables.
In the event that different tubes have to be splice, the three conductors (TR+, TR-, GND) and the mesh must be welded. Protect and insulate the splice with thermo-retractable sheath to prevent entry of moisture.
Steps to follow for the correct start-up of the facility.

Step 1
Check the devices connected to the network one by one ensuring that:
- All the devices have a power supply and are in operation (they are not on standby).
- The date and time configuration is the one that corresponds (especially in recorders).
- The configuration of the MODBUS address is different in each of the devices. It is recommended to take note of them, along with the location of each device. **IMPORTANT: NO MODBUS ADDRESS SHOULD BE REPEATED.**
- In the V4 approved recorders, the MODBUS speed (Baud rate) is configured to 9600.
- The "Master/Slave" configuration is in "Slave" mode (if available).
- The connection of the device to the MODBUS network is correct (see diagram on the previous page).

Step 2
Start-up of the web server
- Prior to connecting the AKO-5012 / 5014 web server power supply check that:
  - The Ethernet cable is connected.
  - The converter is connected, whether to the USB port (AKO-80039) or to the Ethernet port (AKO-80080).
- Connect the power supply and check that the web server is in operation (illuminated button).

Step 3
Connection to the internal client network (Ethernet LAN).
The AKO-5012 / 5014 web server is configured to obtain an IP for the client network automatically (dynamic DHCP). Connect to the AKO-5012 / 5014 WiFi network from any mobile (smartphone, table, laptop) or fixed (desktop computer) device. To do so, search for a network with the name "akonet". The password is: akonet123.
Open the browser and type the address "10.0.0.0/ip". The screen shown on the right will be displayed. The field "Internet Access" (A) indicates whether the equipment has internet access or not (to send alerts):
- **OK:** With access
- **Error:** No access (See step 4)
The field "Computer Name" (B) shows the equipment name (AKO-5012 / 5014) within the client network. To access the web server from any computer connected to the client network, type the aforementioned name (B) in any browser.

Step 4 optional
Configure a fixed IP
If the field "Internet Access" (A) displays Error, or if no access to the web server is available by typing the name which appears in "Computer Name", the web server has to be configured with a fixed IP.
To this end, the IT engineer responsible for the network has to be asked for the following information:
- A free IP address (Server IP)
- The network mask (Netmask)
- The link port (Gateway)
- Primary DNS server (DNS 1)
- Secondary DNS server (DNS 2)
Change the connection type from "DHCP" to "Static", copy the information provided in the corresponding fields (Server IP, Netmask, etc.) and press "Submit".
If the information is correct, the field "Internet Access" must change to OK, otherwise reboot the web server and repeat step 4.
If everything is correct, to access the web server from any computer connected to the client network, type the configured IP address (Server IP) in any browser.
Step 5
Check the AKONet configuration:

- **Access AKONet using one of the following methods:**
  
  Direct connection to the web server: Connecting a monitor, keyboard and mouse to the equipment and opening the AKONet icon.
  
  Accessing the AKONet using a computer connected to the AKO-5012 / 5014 network. Open a browser and enter the IP 10.0.0.1.
  
- **Accessing the facility configuration:** Press on the administration icon in the top AKONet menu and then on “General configuration”. A list should appear with at least one facility, select the corresponding facility and press “Edit”.

- **Check the configuration depending on the converter used:**
  
  **AKO-80039**
  
  Facility type: Series
  
  Communications Port: /dev/ttyUSB_485
  
  Baud rate: 9600
  
  **AKO-80080**
  
  Facility type: Ethernet
  
  Ethernet device IP: Enter the converter IP address.
  
  RTU mode: This must be unmarked.

Step 6
Search for devices. Press on the administration icon in the top AKONet menu and then on “Search for devices”.

Select the corresponding facility in the field “Facility”. AKONet searches for devices comprised between the “Start” and “End” values. In the “Start” field enter the lowest MODBUS address used throughout the facility and in the “End” field the highest. The greater the difference between “Start” and “End”, the longer the search time required.

Consult the list of MODBUS addresses for the devices created in Step 1 and ensure that none of them is outside this range.

Press on “Search for devices” and after a few moments AKONet will show a list of the devices found. Assign a name to each device and press on “Save”. If no device appears, or if any are missing, consult the section “Troubleshooting”

**Troubleshooting**

**AKONet cannot find any device**

- Check that the correct facility has been selected (Step 5).

- In the event of using the AKO-80039 converter, check the status of the lights:
  
   - If the red and green lights are flashing randomly (Red: sending of requests. Green: answer received), the communication is correct.
   
   - If both lights switch on without flashing there is a problem with the wiring, check the facility according to the corresponding diagram.
   
   - If only the red lights come on, check Step 1, in particular that the MODBUS addresses assigned are not repeated throughout the facility and are within the search range.

- In the event of using the AKO-80080, check that both the IP configured in the converter and the one configured in AKONet is the same.

**AKONet cannot find one of the recorders**

- Check that the configuration of “MODBUS Speed” is 9600, the same as the one configured in AKONet.

- Check that the recorder is configured as “Slave”.

- Check that the MODBUS address assigned is not repeated throughout the facility and that it is within the search range.

- For recorders prior to the V4: Open the recorder and check that the inside flat cable is connected correctly.
Remote connection to the web server through TeamViewer.

This function enables remote connection to the web server for performing maintenance work.

If the equipment has an Internet connection it is possible to access it remotely via the TeamViewer application. To this end, this application must be installed on the computer or device from which access is going to be made and the corresponding licence must be available. For more information go to: www.teamviewer.com.

This service must be active in the AKO-5012 / 5014 web server:

- **Accessing the facility configuration:** Press on the administration icon in the top AKONet menu. In the lower right the current status of the service is shown:

  ![ACTIVE INACTIVE](image)

- **Activate the service:** If the service is inactive, it has to be activated. Press on "Teamviewer". A window is displayed requesting a password. Enter a 6-digit password and press on "Yes". This password is requested when establishing the remote connection.

- **Take note of the ID:** After a few moments, the Teamviewer button changes from black to red (Active) and shows the assigned ID.

  Once the service is active, this does not change, even when the equipment reboots after a power cut. To stop the service press on the red "Teamviewer" button, followed by "Yes" on the confirmation screen. After a few moments the button changes from red to black (Inactive).

To connect using remote equipment, open the "Teamviewer" application and enter the ID noted down beforehand and the password entered in the previous step.

A password is requested, type "akonetws" and press on "Unlock", the web server desktop is shown.

To access AKONet, double click on the AKONet icon.