

5.4

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# **CoolMasterNET Application User Manual**



## **DELÉGO SERVER Visualisation webserver**

**EK-DEL-SRV01 / EK-DEL-SRV01-M**

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# 1 Introduction

## 1.1 Scope of this manual

This document contains all the information required for the integration of DELÉGO SERVER, the multiprotocol webserver for the connected buildings by EKINEX, with a COOLMASTERNET device.



The present user manual is part of the suite of application manuals dedicated to the DELÉGO SERVER, available on the section dedicated to this product in the EKINEX website. Before reading this document, it is recommended to consult the following application manuals:

REF	DOCUMENT	DESCRIPTION
[D1]	DOCUMENTATION PLAN	Overview of the application manuals of DELÉGO SERVER
[D2]	GENERAL FUNCTIONS - APPLICATION USER MANUAL	General installation manual of the webserver
[D3]	MODBUS - APPLICATION USER MANUAL	Configuration and visualisation of MODBUS devices in DELÉGO SERVER
[D4]	AUTOMATIONS - APPLICATION USER MANUAL	Methodologies for creating automations through the relationship between objects (TRIGGERS, CONNECTIONS and LOGICS).

These documents are available for download in the area of the EKINEX website dedicated to the webserver.

## 1.2 Conventions

The following conventions are used in this manual:

[KEY]	The keyboard keys that the installer must press are shown in square brackets
<i>Courier</i>	Software messages generated by the DELÉGO SERVER configuration software are reported in the "courier" font
<i>Function name</i>	Names of buttons, table fields or other graphic elements of the user interface of the DELÉGO SERVER configuration software are shown in italics
	Information note
	Important note that requires particular attention

## 1.3 Safety information

**DELÉGO SERVER is a product intended for trained and specialized personnel only;** anyone who interacts with the device must first read this documentation, especially this safety information. This document supplements and does not replace any legislation or legal directives on safety.

The device has been developed following the safety regulations currently in force; however, it is not possible to exclude with certainty possible damage or interactions with other devices during its operation. The device complies with EMC guidelines and harmonized European standards; any modifications to the device may affect EMC compatibility.

The supply voltage must be strictly within the range indicated in the GENERAL FUNCTIONS application manual and on the device; risk of fire or explosion if powered outside this range. The CE declaration of conformity of the device can be requested from EKINEX®, at the references on the site [www.ekinex-delego.com](http://www.ekinex-delego.com).



In compliance with Directive 2002/96/EC the DELÉGO SERVER electronic device must be disposed of in the appropriate facilities and not in the collection of solid urban waste.

## 1.4 Warnings

- This application manual is aimed at installers, system integrators and designers.
- The assembly, electrical connection, configuration and commissioning of the appliance can only be carried out by specialized personnel in compliance with the applicable technical standards and the laws in force in the respective countries
- Opening the appliance case causes the immediate interruption of the warranty period
- In the event of tampering, compliance with the essential requirements of the applicable directives for which the appliance has been certified is no longer guaranteed.
- EKINEX defective appliances must be returned to the manufacturer at the following address:  
**Ekinex S.p.A. Via Novara 37, 28010 Vaprio d'Agogna (NO)**

## 1.5 Copyright

© Ekinex S.p.A. 2025

This application manual, the DELÉGO SERVER software and the DELÉGO iOS and Android apps are subject to copyright; all rights are reserved. Copying, reproduction, translation and/or modification, even partial, are expressly prohibited unless approved in writing by EKINEX®.

## 1.6 Open Source Licenses

DELÉGO SERVER contains open source software, such as the Linux operating system and its kernel. These software components are subject to various open-source licenses, including:

- GNU General Public License (GPL), <https://www.gnu.org/licenses/gpl-2.0.html>
- GNU Lesser General Public License (LGPL), <https://www.gnu.org/licenses/lgpl-2.0.en.html>

If you own a product, for a period of 3 years from the last production date, you can request from EKINEX the source code of the software components licensed under the GNU General Public License (GPL) or the GNU Lesser General Public License (LGPL), and use, distribute and modify them in accordance with the respective licenses.

EKINEX cannot be considered responsible in any way for the source code thus distributed, which is provided without guarantees. EKINEX cannot also be held responsible for any damage or consequence resulting from modifications (additions / removals) made to this software by third parties, unless specifically authorized.

## 1.7 More information

- For further information on the product, you can contact EKINEX technical support® to the e-mail address: support@EKINEX.com or consult the website [www.EKINEX.com](http://www.EKINEX.com)
- EKINEX® is a registered trademark of Ekinex S.p.A.
- KNX® ed ETS® are registered trademarks of KNX Association cvba, Brussels

The company reserves the right to make changes to this documentation without notice.

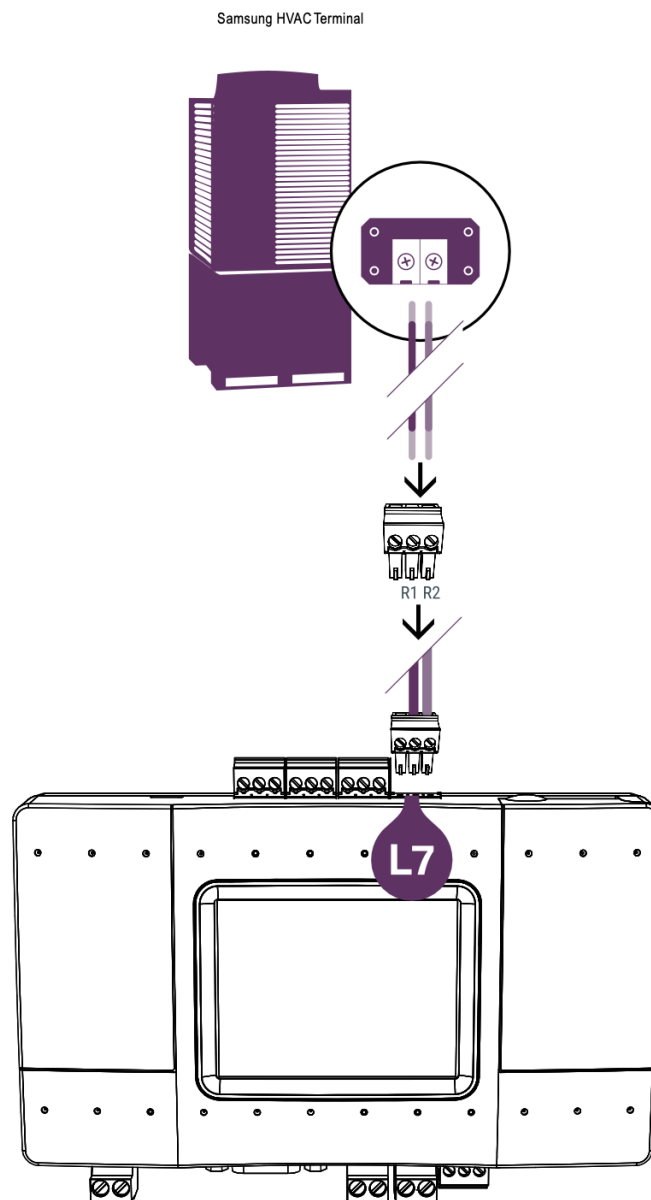
## 2 CoolMasterNET connection and configuration

### 2.1 Connection of CoolMasterNET and the external unit(s)

Refer to the following CoolMaster document for detailed instructions for the connection of the CoolMasterNET to the external unit(s):

[https://coolautomation.com/wp-content/uploads/sites/2/2021/01/CoolMasterNET-installation-manual-3.5\\_.pdf](https://coolautomation.com/wp-content/uploads/sites/2/2021/01/CoolMasterNET-installation-manual-3.5_.pdf)

DIP switches must be set appropriately for the HVAC units in use, then the outdoor unit comms line must be connected to the CoolMaster (only certain comms lines can be used for certain brands). The image below is for a Samsung outdoor unit.



The above connection would allow you to control up to 64 indoor units from a single connection to the outdoor unit. Refer to the manual of the HVAC unit for recommendations on cable used for this connection. For example a Samsung VRF unit recommends a cable gauge of 0.75mm to 1.5mm.

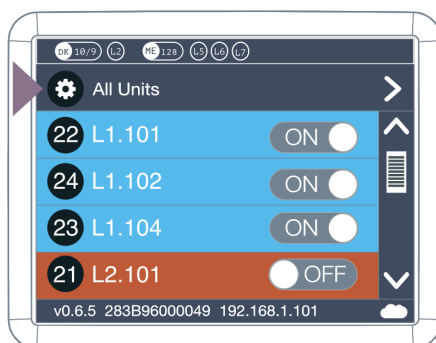
If there is a second outdoor unit, then simply connect this to another data line on the integration unit.

## 2.2 Indoor units detection and addressing

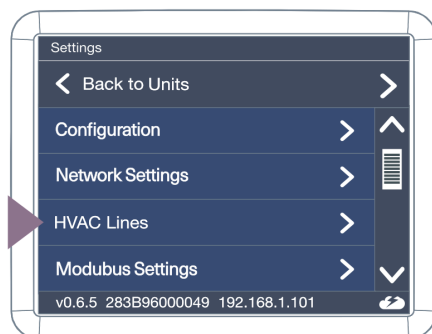
Being the CoolMasterNET capable of controlling multiple indoor units, to be able to offer a control mechanism over Modbus, it is needed to assign a Virtual Address to each indoor unit, and then use this address as the base address for the Modbus register of that unit. The Coolmaster is capable of auto scanning a particular line and detecting all indoor units connected to it.

### 2.2.1 HVAC brand setting

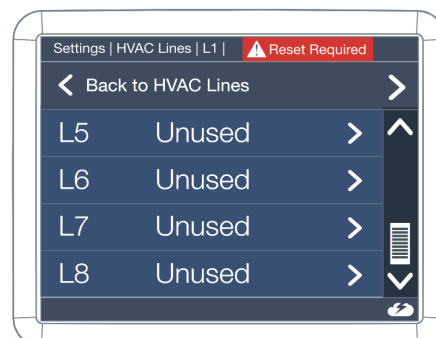
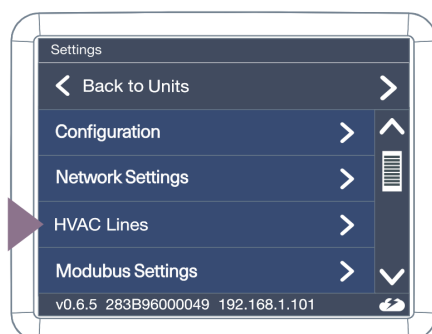
1. Open Settings



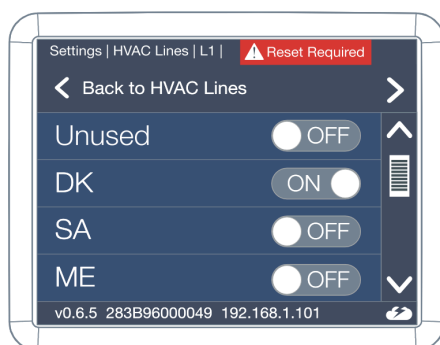
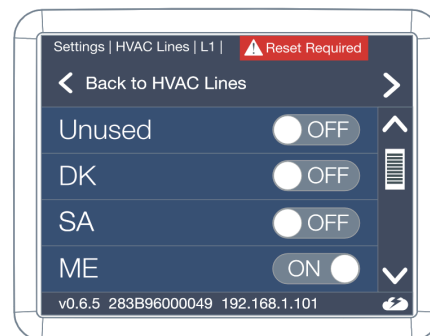
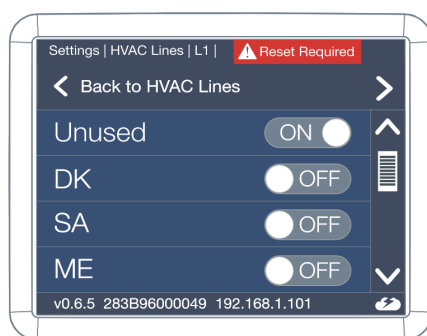
2. Enter HVAC line



3. Select the HVAC Line you want to configure



4. Configure the HVAC line type

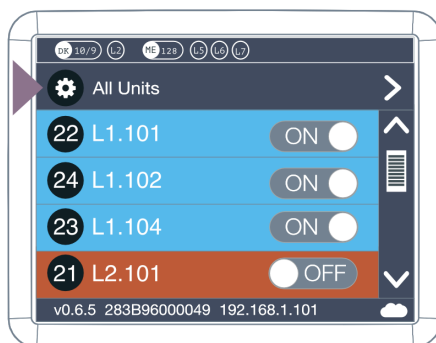


5. Make sure the DIP switches are set properly for the brand (according to the details in the brand relevant section above)
6. You will also have a red warning message if DIP switch are set incorrect
7. Reset is required to make the change

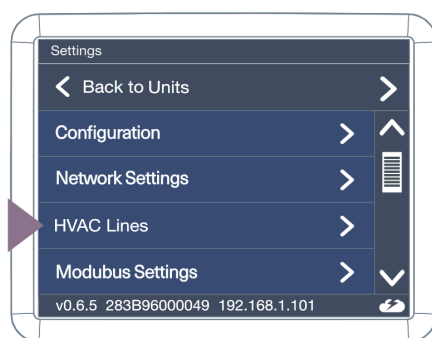


## 2.2.2 Scanning for indoor units

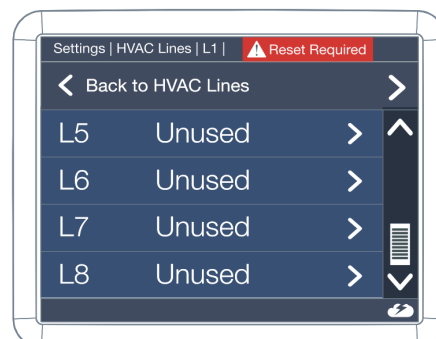
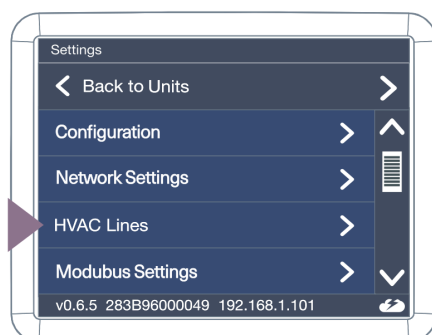
1. Open settings



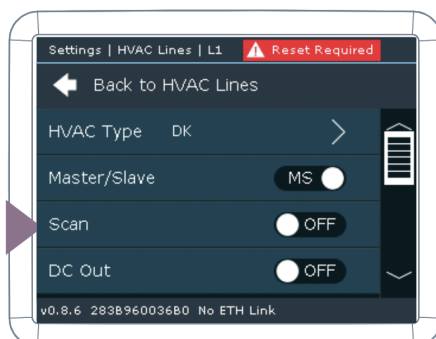
2. Enter HVAC Line



3. Select the HVAC Line you want to configure

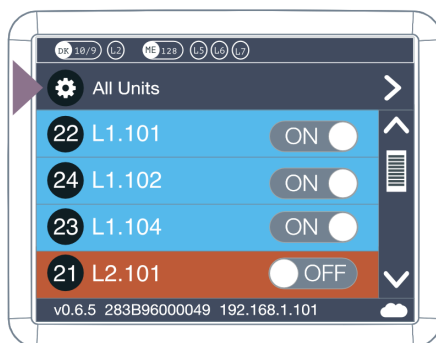


4. Press SCAN

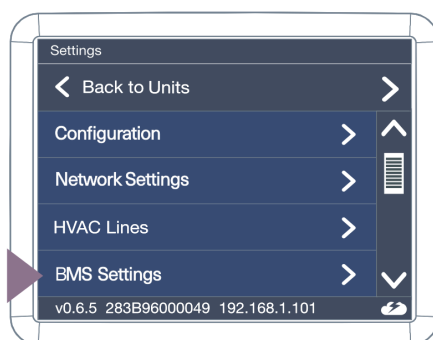


## 2.2.3 Modbus IP enabling

1. Open settings

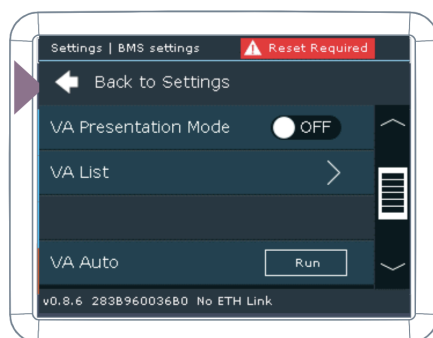


2. Open BMS Settings

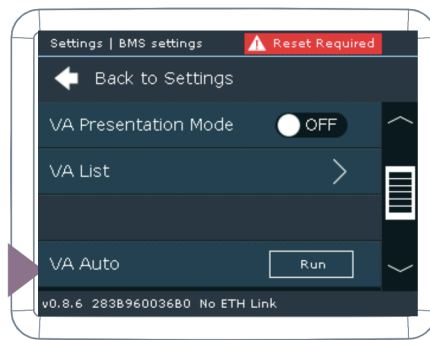


## 2.2.4 Creating VA list

1. Run VA Auto



## 2. View VA List



For full instructions please refer to the CoolMasterNET documentation at the following link:

[https://coolautomation.com/wp-content/uploads/sites/2/2021/03/CoolMasterNet\\_UM\\_v1.1.2-1.pdf](https://coolautomation.com/wp-content/uploads/sites/2/2021/03/CoolMasterNet_UM_v1.1.2-1.pdf)

## 3 Delégo configuration

### 3.1 Modbus line

Access the Delégo Server administration area (with a web browser) and highlight the section

TECHNOLOGIES > MODBUS > MODBUS MASTER

Create a new line by pressing the [+] button in the toolbar, then enter its detail page with the corresponding edit shortcut; a page similar to the following is prompted:

The screenshot shows the Delégo web interface. On the left is a dark sidebar menu with a search bar and a list of categories: Setup, Technologies, Functions, Scenes, Notifications, Logics, Advanced functions, Options, Load control, Consumption monitor, Data log, Services, Users and permissions, and Change password. Under 'Technologies', 'Modbus master' is selected. The main content area is titled 'Generic settings' and contains several sections: 'General information' with fields for ID (3543), Name (Coolmaster), and Communication; 'Network' with fields for IP address (192.168.160.123), Port (502), Query time (500), Command time (100), Delay time after interrogation cycle (100), and Connection timeout (1000); 'Appearance' with an Execution state (Stopped); and 'Permissions' with an Enable communication checkbox. A red box highlights the Network section. At the bottom of the main area is a 'CLOSE' button.

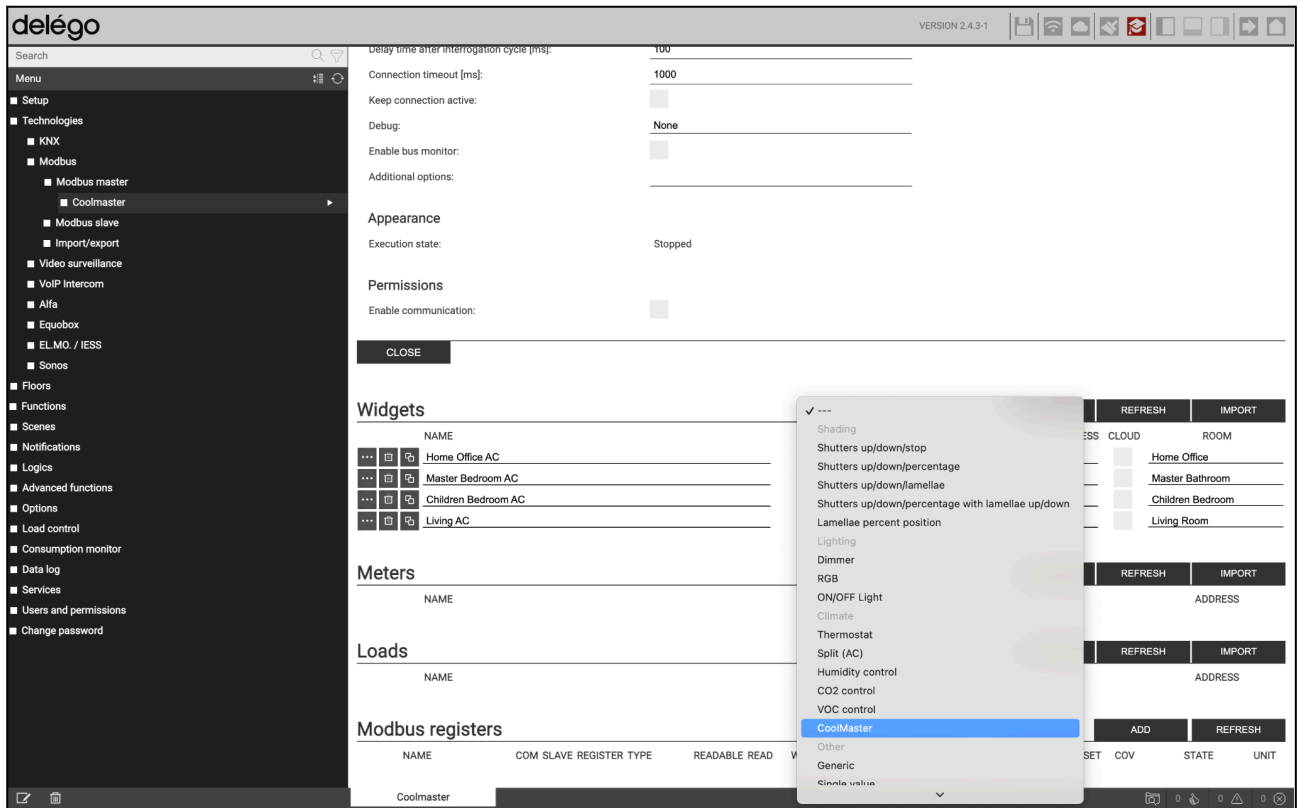
Select “NETWORK” as COMMUNICATION and enter the following parameters:

IP ADDRESS	IP address of the CoolMasterNET device
PORT	Enter the default value “502” if not configured differently in the CoolMasterNET
QUERY TIME	The suggested value is “500”
COMMAND TIME	The suggested value is “100”
DELAY AFTER INTERROGATION CYCLE	Enter an higher value (in ms) to make the interrogation slower and therefore lower the CPU load on the webserver
CONNECTION TIMEOUT	The suggested value is “1000”  Enter an higher value (in ms) if problems of missing interrogations or commands are encountered

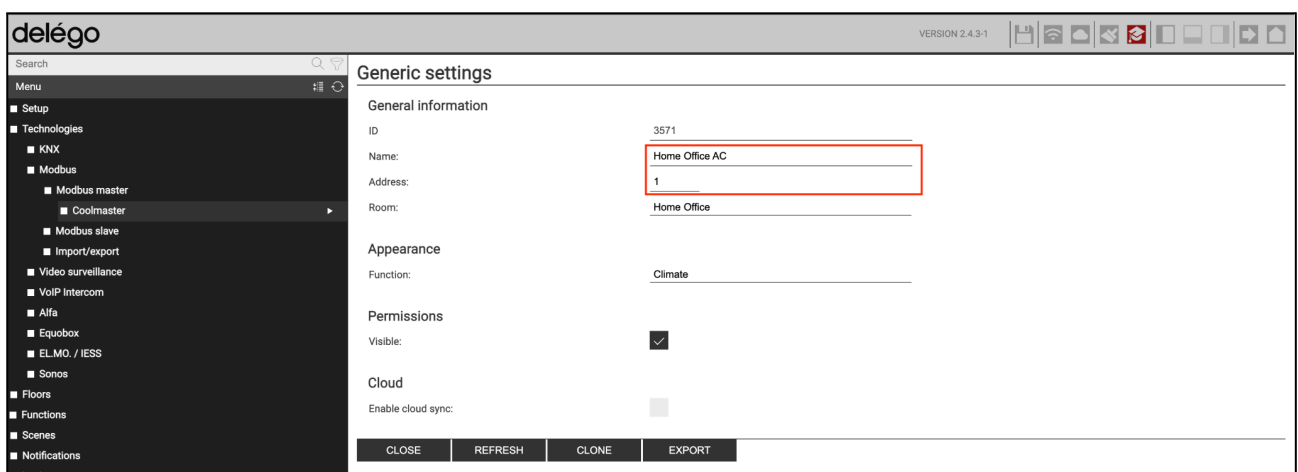
Refer to the MODBUS manual [D3] for further information about the MODBUS lines.

## 3.2 Widget configuration

In the WIDGETS section, select “COOLMASTER” in the template drop-down menu



and press the ADD button; a new widget will be added to the list above, for the first AC unit. Access its detail page, enter a name and “1” as address, by leaving all the other settings as default:



The CoolMasterNET gives access to each AC unit with register addresses shifted by 16 each other:

AC UNIT	BASE ADDRESS	REGISTER ADDRESSES
1	16	Cooling mode = 16 Ventilation speed = 17 Command setpoint = 18 [...]
2	32	Cooling mode = 32 Ventilation speed = 33 Command setpoint = 34 [...]
3	48	Cooling mode = 48 Ventilation speed = 49 Command setpoint = 50 [...]
[...]	[...]	[...]

For this reason, in order to add the next AC units, the quicker approach is to clone the first widget, by specifying “16” as address offset:

- Press the CLONE button from the details page of the first AC unit
- Enter as many AC units you want to obtain
- Enter “+16” as an offset for the register (no offset for the slave)
- Press EXECUTE

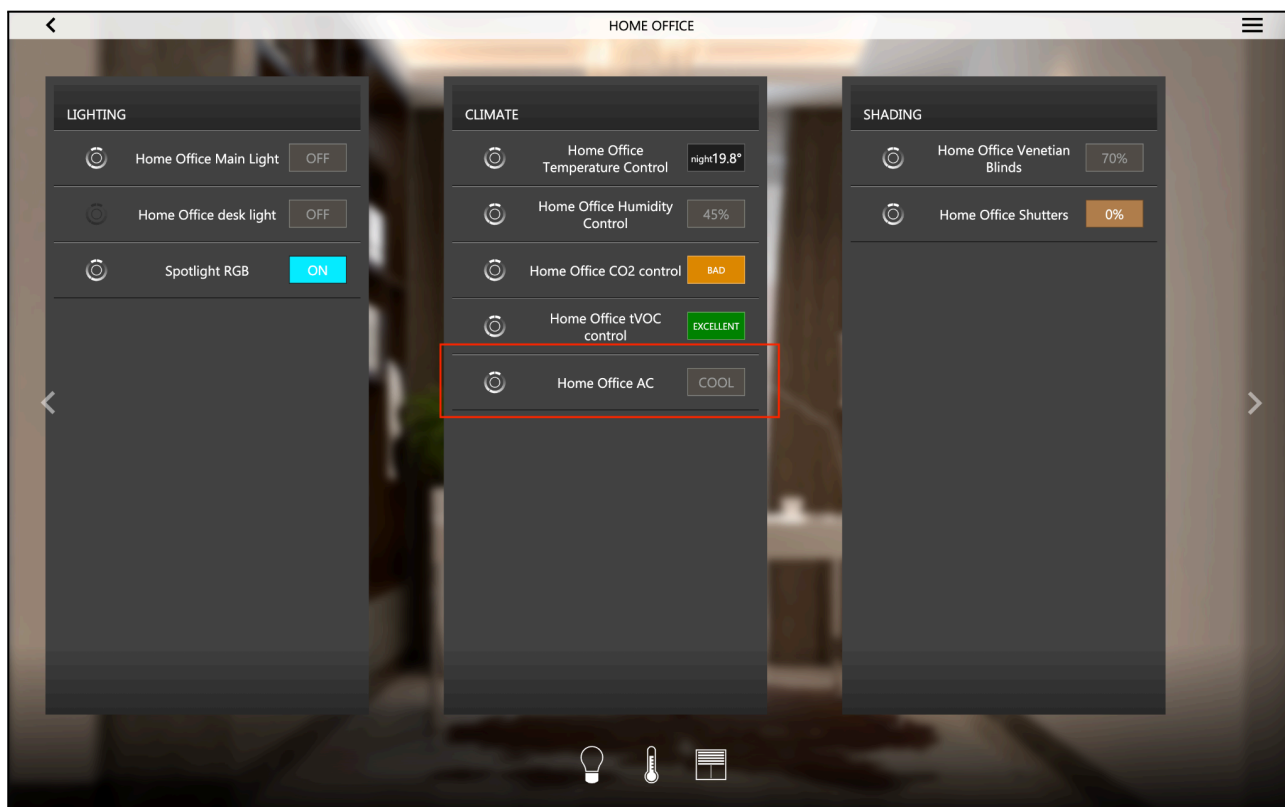
The screenshot shows the 'delégo' web interface. On the left is a navigation menu with options like Setup, Technologies, KNX, Modbus, and Video surveillance. The main area displays the 'Options' dialog for cloning a widget. The 'Widget' is 'Home Office AC'. The 'Number of copies' is set to 10. Under 'Addressing', 'Apply offset' is selected. Under 'Offset', the 'Register' offset is set to '+16'. There are 'EXECUTE' and 'CLOSE' buttons at the bottom of the dialog.

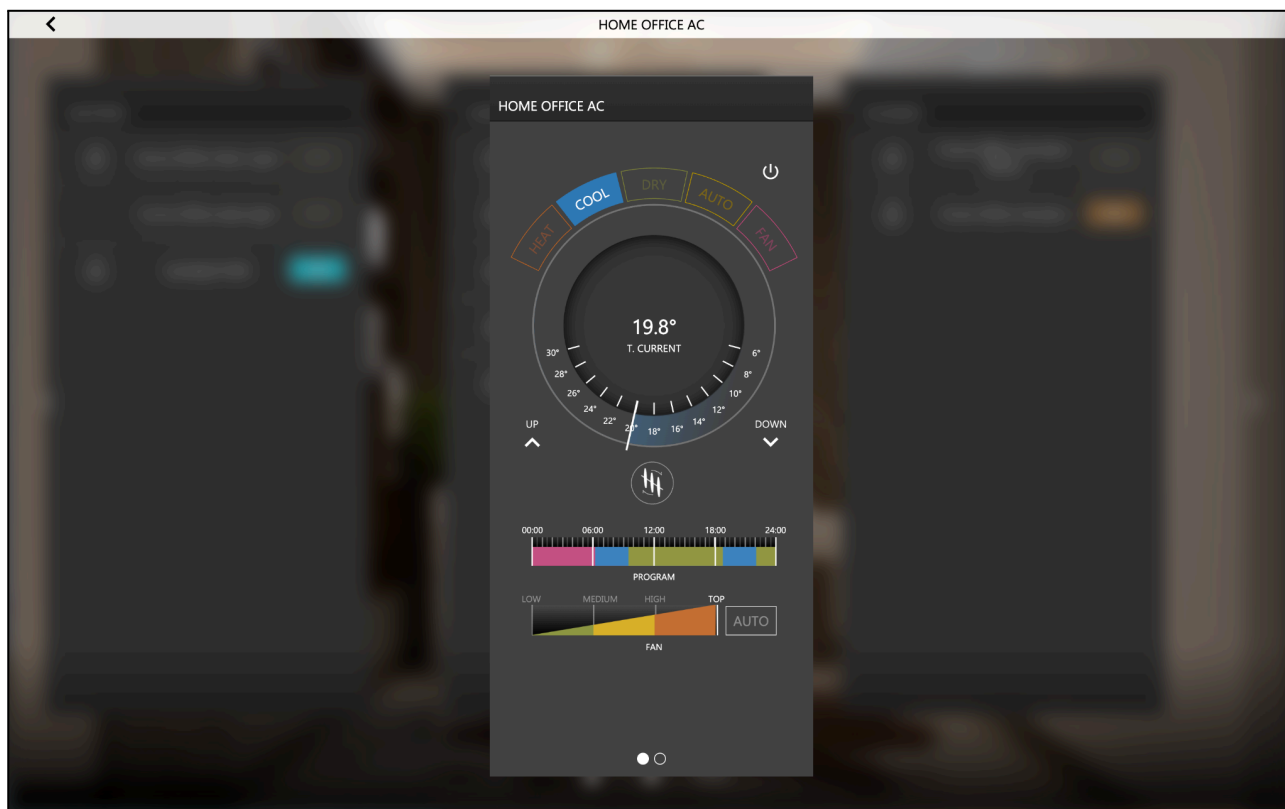
When done, return to the Modbus line page, and change the names of the AC units in the WIDGETS list. Finally, press STOP and START buttons to restart the communication; if everything has been correctly set, the “dots” in the detail page of each AC unit must pass from red to green color.

## 4 Visualization

By selecting a ROOM in the WIDGETS list (of the Modbus line page) for each AC unit, they can be automatically displayed in the corresponding page of the visualization.

The following pictures show an example of visualization of an AC unit in the widgets list of a room, and the corresponding detail popup (accessible by pressing the widget in the list):







## 5 Automations

The CoolMaster widgets can be used in combination with other objects, with all the automations offered by DELEGO SERVER:

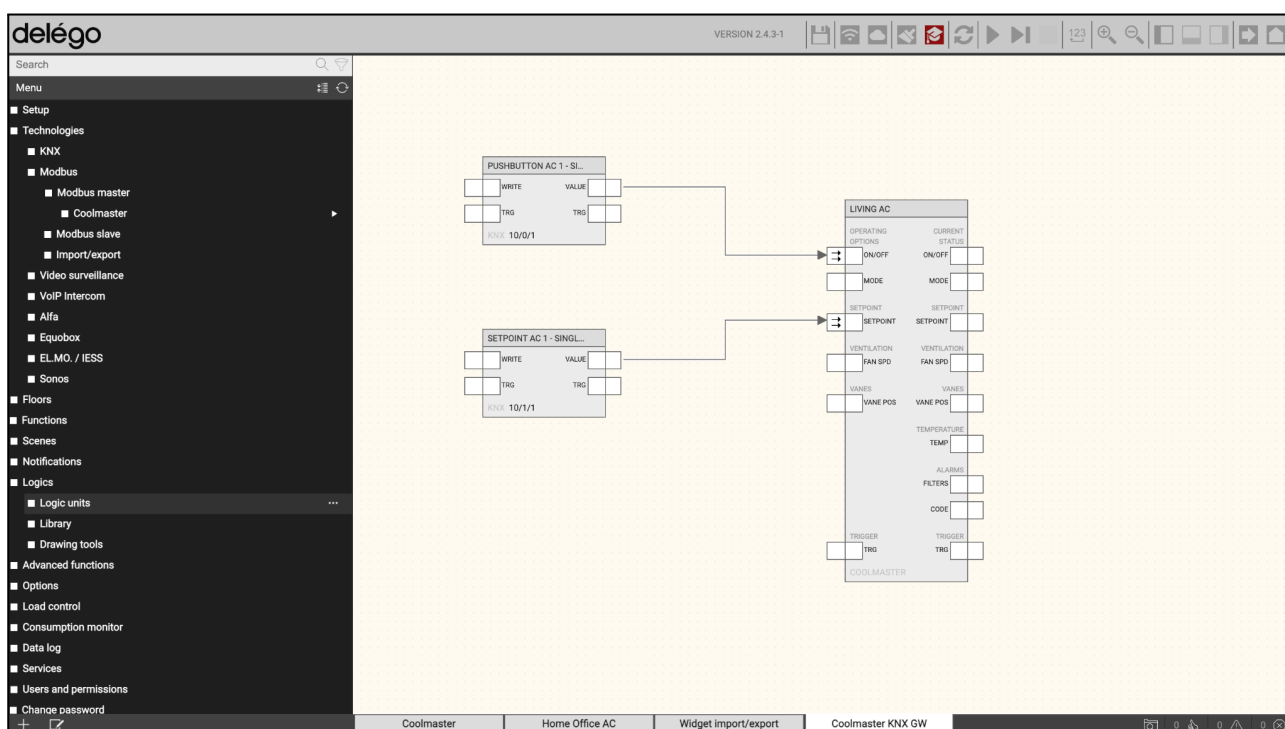
- TRIGGERS and ACTIONS
- CONNECTIONS
- LOGICS

For more information about the automations in DELEGO SERVER, please refer to the corresponding application manual [D4].

By dragging & dropping a CoolMaster AC unit into a task of a LOGIC PROGRAM, for example, it is possible to make it interact with other elements of the project, or to create a gateway with other technologies (e.g. KNX).

The input (left) nodes of the block can be used to command the AC unit, and the output (right) nodes to process its status for other logics, or to send it to another protocol.

The following screenshot gives an example of gateway for two different KNX group addresses, to be used respectively to command the ON/OFF and the setpoint of an AC unit controlled by CoolMasterNET:



Delégo automatically converts KNX into Modbus commands, and vice versa.

## 6 Revision history

The following table contains the most relevant changes in the software releases, concerning the topics of this application manual:

Release	Changes	Date
2.6.0	Armonization of the document with the new DOCUMENTATION PLAN	02/04/2025
2.4.3	First revision of the document	10/04/2024



Before the software release 2.6 the application manuals of DELÉGO SERVER were organized differently. An exact correspondence with older versions of the manuals and the changelog could not be found for this reason.