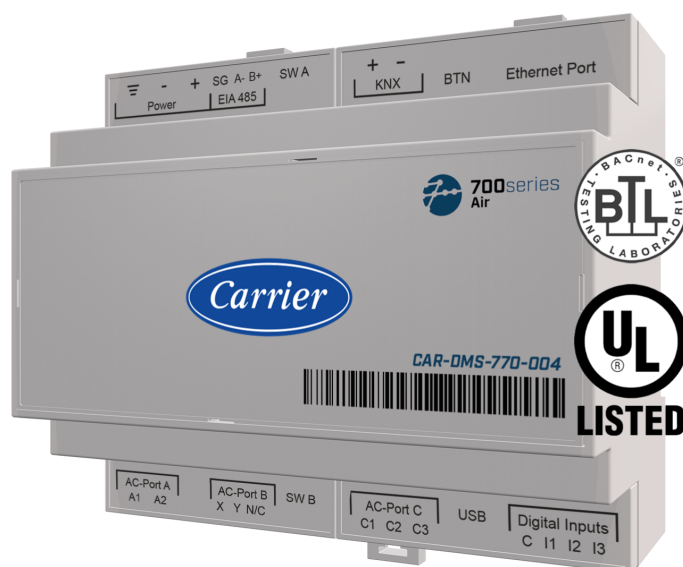


MAPS Configuration Guide

FOR CAR-DMS-770-004

Version 1.0.8
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Intesis MAPS

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1. Introduction to Intesis MAPS

Intesis MAPS® is a software tool for configuring and monitoring the Carrier® gateways. Intesis MAPS has been designed and developed in-house, assuring an up-to-date tool to get all the potential of Carrier gateways.

**NOTE**

Intesis MAPS is compatible with Windows® 7 and higher.

The design of this configuration tool focuses on four main pillars:

- A user-friendly interface.
- Multiple ways to create your project:
 - From scratch, using a template.
 - Importing data from your computer.
 - Downloading the settings from an already configured gateway.
- Full linkage between the control system and the HVAC installation signals.
- Real-time monitoring of the HVAC network.

2. Prerequisites

To configure the gateway, you need:

- The items supplied by HMS Networks:
 - Carrier CAR-DMS-770-004 gateway
 - Gateway documentation:
 - Installation guide
 - User manual
 - USB Mini-B type to USB A type cable to connect the gateway and the computer.
- A computer to run the configuration tool Intesis MAPS.

**NOTE**

Requirements:

- Windows 7 or higher
- Hard disk free space: 1 GB
- RAM: 4 GB

3. Installation

Downloading the software

1. Enter the [Intesis MAPS webpage](#).
2. Click the **Download now** button. The page will scroll down to the download form.
3. Fill out the form.



NOTE

You can review the [privacy policy section](#) for more information about how HMS processes the form data.

4. Click the **Download** button.
5. A .zip file will be downloaded to your computer.

Installing the software

1. Click the .zip file to open it.
2. Double-click the EXE file.
3. The Intesis MAPS Setup Wizard will guide you through the steps required to install Intesis MAPS on your computer:
 - a. Read the license agreement and select **I Agree**.
 - b. Select the installation folder.
4. Once the installation is completed, click the **Close** button.

4. Create a New Project from a Template

1. Open Intesis MAPS.
2. Click **Create New Project** in the **Start** menu on the left.
You can create a project from scratch using a template. To find the appropriate template, filter the search by:
 - Clicking on the protocol logos.
 - Typing the order code IN770CARXXSO038 in the **Order Code** field.

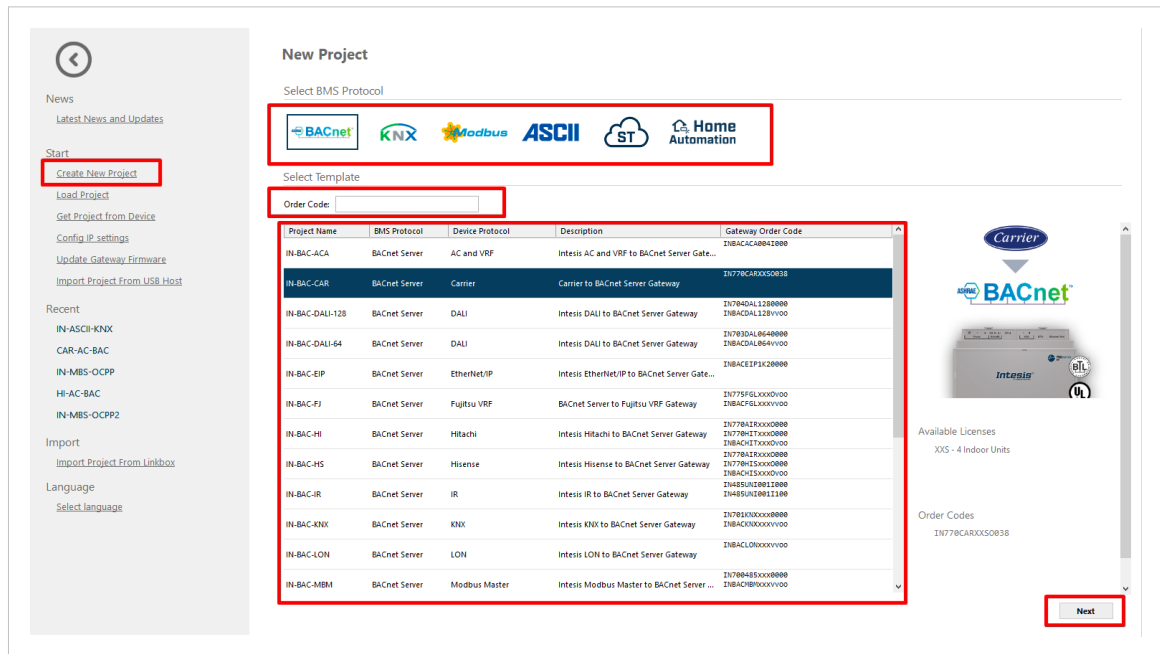


NOTE

The order code is printed on the silver label placed on the gateway's right side.

- Looking for the **Project Name** on the list: IN-BAC-CAR (for BACnet), IN-MBS-CAR (for Modbus), IN-KNX-CAR (for KNX), IN-WMP-CAR (for Home Automation).

Figure 1. Three possibilities for the template selection (BACnet shown as example)



3. Select the desired template.
4. Click **Next** or **double-click the template** on the list.



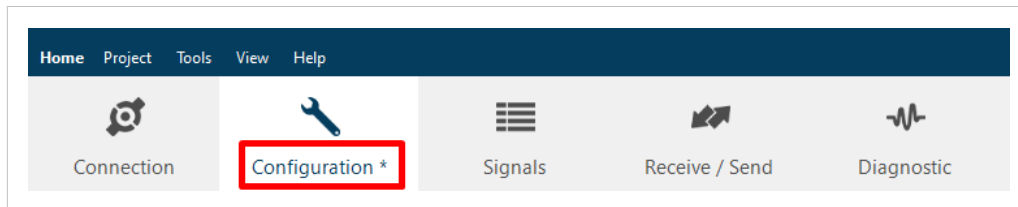
NOTE

Templates are just a starting point for your integration. Depending on the type of integration, you may have to modify some parameters.

5. Saving, Opening, Importing, and Exporting the Project

While working on your project with Intesis MAPS, an asterisk appears on the **Configuration** tab, as shown in this picture below:

Figure 2. The Configuration tab showing an asterisk



This asterisk reminds you that you have made changes to the project but have not saved them or sent the project to the gateway yet. To know how to send your project to the gateway, see [Receive/Send Tab \(page 21\)](#).

• SAVING YOUR INTESIS MAPS PROJECT

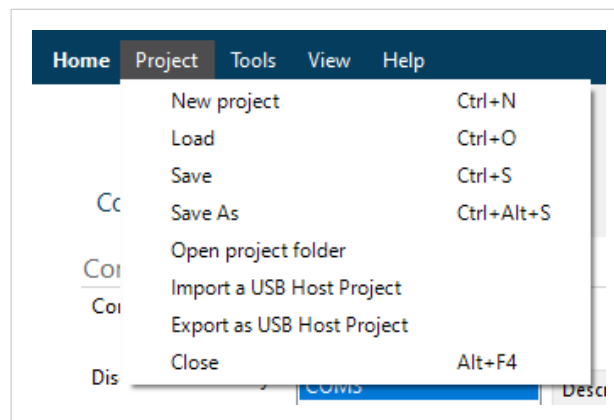


IMPORTANT

Remember to save your project periodically to keep your changes.

1. Click **Project**.

Figure 3. Project tab from the top menu



2. Click **Save** or **Save As**.



TIP

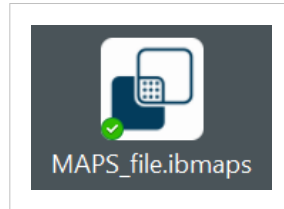
Instead, you can use the shortcut **Ctrl+S** (Save) or **Ctrl+Alt+S** (Save As).

3. On the **Save file** menu, type a **File name** and select where to save the file.
4. Click **Save**.

- **OPENING AN INTESIS MAPS PROJECT FROM YOUR COMPUTER**

**TIP**

Double-click a .ibmaps file saved on your computer to automatically open it in Intesis MAPS.



1. Click **Project**.
2. Click **Load**.
3. On the emergent window, select the desired file from your computer.
4. Click **Open**.

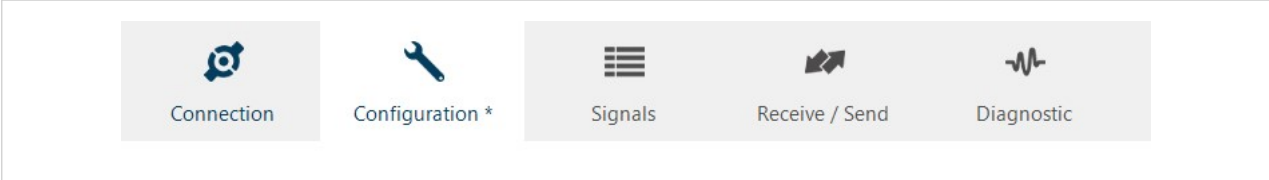
- **IMPORTING AND EXPORTING A USB HOST PROJECT**

**NOTE**

These two functions use the .expmaps file format, which can either be opened with Intesis MAPS or loaded directly into a gateway via USB. Since this gateway doesn't have a USB storage port, the regular save and load functions should be used instead.

6. Main Menu Overview

Figure 4. Intesis MAPS main menu



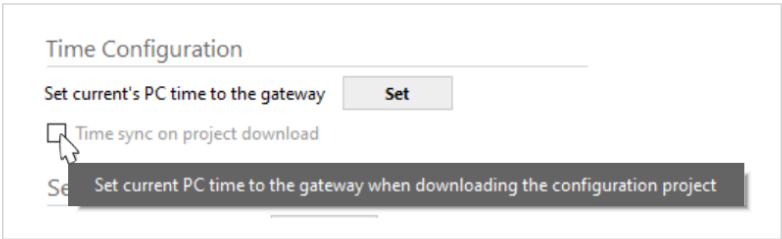
The following sections provide an overview of the five tabs that compose the Intesis MAPS main menu. Through these options, you will configure your project, send it to the gateway, and monitor that everything works fine using the **Diagnostic** tab.



TIP

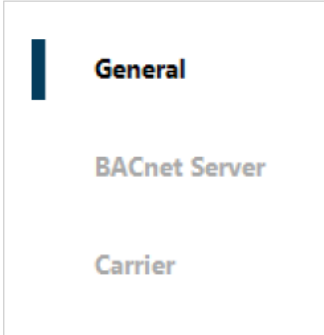
Tooltip: Hover the cursor over a field, and a message will appear indicating the purpose of the parameter.

Figure 5. Example of a tooltip



7. Configuration Tab

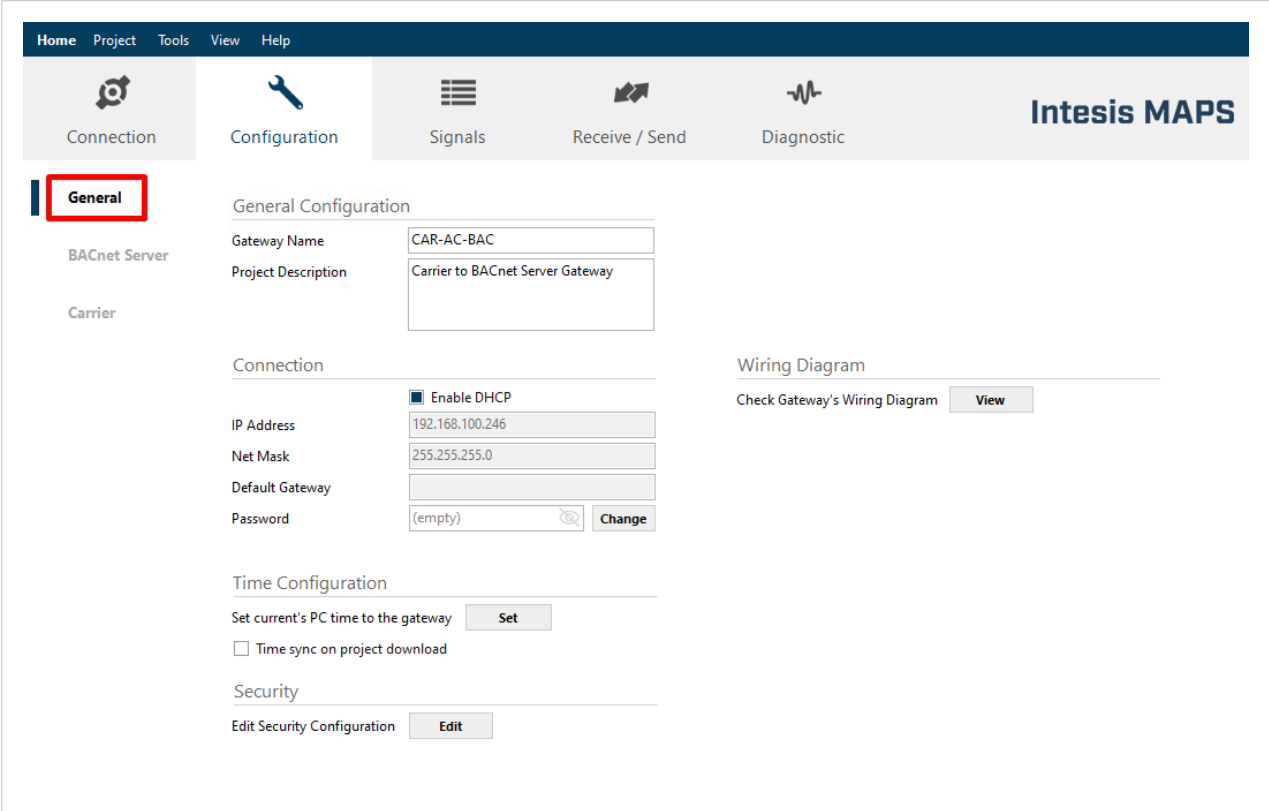
Find a menu with three options on the left side of the **Configuration** tab:



- **General:** Configure the general parameters of the gateway.
- **Building management system (BMS) protocol:** BACnet, Modbus, KNX, or Home Automation, depending on your project's current protocol combination. In the case of the image on the left, the control system is based on BACnet.
- **Carrier:** Protocol of the AC installation.

7.1. General Configuration Menu

Figure 6. General configuration menu on the Configuration tab



Use this menu to configure some general parameters of the gateway.

7.1.1. General Configuration

- **Gateway Name:** Type a descriptive name for your gateway (max. 32 characters).
- **Project Description:** Type a short description of your project (max. 255 characters).

7.1.2. Connection

**NOTE**

When commissioning the gateway for the first time, DHCP will be enabled for 30 seconds. During that time, an IP address will be automatically assigned to the gateway if there is a DHCP server. After that time, the default **IP address 192.168.100.246** will be automatically set.

You can find this default IP address written in the installation guide: **Communication ports** table → **Ethernet**.

- **Enable DHCP:** Use this option for networks that have a DHCP server.
Uncheck this option to unlock the following parameters:
 - **IP Address:** Assign a fixed IP address for the gateway.
 - **Net Mask:** Set the gateway IP netmask.
 - **Default Gateway:** Type the IP for the default gateway.

**NOTE**

The **Default Gateway** parameter is a networking concept not related to the Intesis gateway. It refers to the IP address of the device (usually a router) that serves as the access point for sending data from the local network to other networks, including the Internet. Therefore, this field only needs to be filled in if the Intesis gateway to be configured is connected outside the local network.

- **Password.** Follow these instructions to set a new password for the gateway:
 1. Click the **Change** button.
 2. Type a new password.
 3. Go to the **Receive/Send** tab.
 4. In the **Send** menu, click the **Send** button.
 5. Go to the **Connection** tab.
 6. Select the gateway from the **Discovered Gateways** window.
 7. Click **Connect**.

7.1.3. Time Configuration

- **Set current PC time to the gateway:** Connect the gateway to your PC and click the **Set** button to set the gateway's time with your PC's current time.
- **Time sync on project download** (disabled by default): The gateway's clock is set to your PC time when downloading the project to the gateway.

7.1.4. Security

- **Edit Security Configuration:** Click the **Edit** button to open the **Security Configuration** window.



IMPORTANT

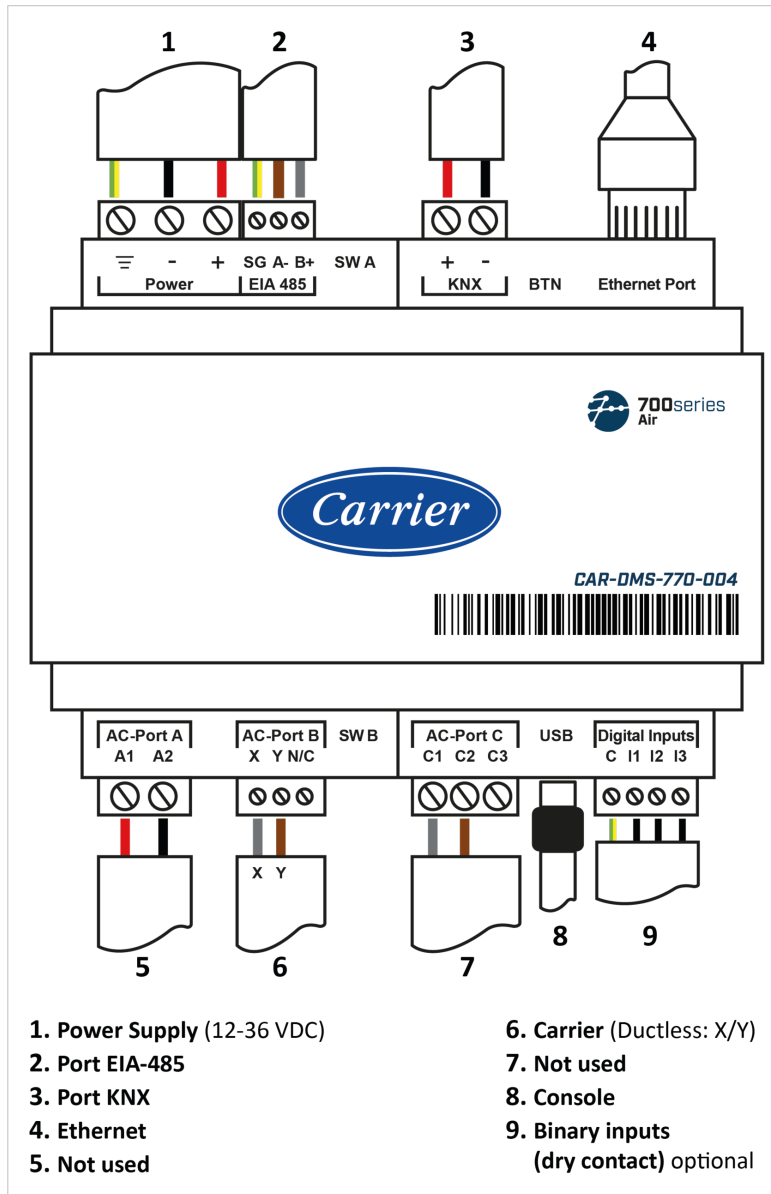
We recommend keeping the predetermined configuration.

- **Disable UDP Discover Service** (disabled by default): The gateway is not discoverable through UDP communication.
- **Disable TCP Console Service** (disabled by default): The gateway stops communicating with the configuration and diagnostic software through TCP. This only applies to gateways supporting connection to the PC via both Ethernet and console ports.
- **Disable HTTPS Certificates Auto Update** (enabled by default): Automatic updates for the HTTPS certificates are not allowed.

Click **Save** to save the changes.

7.1.5. Wiring Diagram

- **Check Gateway's Wiring Diagram:** Click the **View** button to open the schematic image on how to wire the gateway.



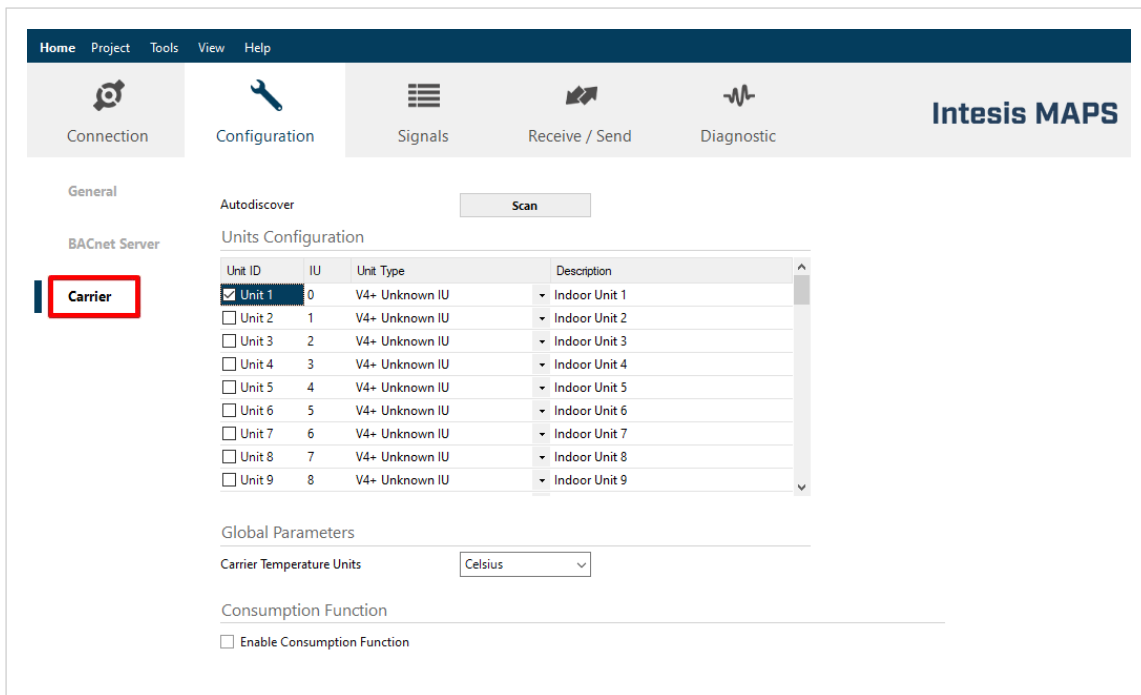
7.2. BMS Protocol

The parameters in this menu vary depending on the current protocol combination. Consult these sections for each protocol:

- [BACnet \(page 26\)](#)
- [Modbus \(page 39\)](#)
- [KNX \(page 41\)](#)
- [Home Automation \(page 44\)](#)

7.3. Carrier Protocol (Device Protocol)

Figure 7. Carrier protocol parameters inside the Configuration tab



Use this menu to integrate AC indoor units into your project and configure some Carrier protocol parameters.

7.3.1. Autodiscover

- **Autodiscover:** This function discovers all indoor units connected to the installation.
 1. Click the **Scan** button to open the Scan Carrier Units window:
 2. Start the bus scanning by clicking the **Scan** button.
 3. Once the scanning has finished, you can select or deselect which units you want to integrate.
 - Check the **Replace Units** option if you want the currently selected units to replace the previously listed units.
 - Check the **Add Units** option to add the currently selected units to the previously listed units.
 4. Click **Apply** to replace/add the discovered units you have selected.

7.3.2. Units Configuration

Configure some parameters related to the AC units of your project:

- **Unit ID:** Check which indoor units you want to integrate.
- **IU:** Set a number for each indoor unit (0..63).
- **Unit Type:** Use the dropdown menu to select the unit type.
- **Description:** Type a description for each indoor unit.

7.3.3. Global Parameters

- **Carrier Temperature Units:** Temperature unit in Celsius or Fahrenheit degrees.

7.3.4. Consumption Function



NOTE

This function is available for BACnet, KNX, and Modbus.

With this function, you can monitor the energy consumption of the integrated indoor units.



IMPORTANT

Before using this function, ensure the AC system and the pulse/Modbus energy meters are already installed, wired, configured, and properly working.

- **Enable Consumption Function:** Click the checkbox to enable this parameter.
- **Select Energy Meters Input Mode:** Select **Modbus TCP Energy Meters** or **Pulse Meters & Binary Inputs**.
- **Energy Meters Configuration:** Click the **Edit** button to open the **Energy Meter Configuration** window.



NOTE

The configuration parameters will vary depending on the energy meter type selected.

- Energy meter configuration for **Modbus TCP Energy Meters**.

Energy Meter Configuration

Select Meter: Energy Meter 1

Meter 1 Configuration

Description: Energy Meter 1

IP Address: 192.168.1.1

Port: 502

Slave Number: 1

Modbus Register (active energy imported): 0

Register Units: Wh

Read Function: 3: Read Holding Register

Data Length: 16

Format: 0: Unsigned

Byte Order: Big Endian

Advanced MB Configuration

Time InterFrame: 10 ms

Retry Timeout: 5000 ms

Conn. Timeout: 10000 ms

Rx Timeout: 5000 ms

Time Slave Chg: 100 ms

OK Cancel

Use the **Select Meter** parameter to choose the energy meter you want to configure.



NOTE

Up to three energy meters are available.

- **Meter 1 Configuration:**

- **Description:** Type a description for the meter.
- **IP Address:** It shows the IP address where the meter is located.
- **Port:** Port for the Modbus TCP/IP connection. (**502** port by default).
- **Slave Number:** Energy meter slave Modbus address (1 to 254).
- **Modbus Register (active energy imported):** Modbus register to read (1 to 65535).
- **Register Units:** Choose **Wh** or **kWh**.
- **Read Function:** Read register type for this function. Choose between function **3: Read Holding Registers** and function **4: Read Input Registers**.
- **Data Length:** Number of bits for the Modbus register (16, 32, or 64 bits).
- **Format:** Select the data type between **0: Unsigned**, **1: Signed (C2)**, **2: Signed (C1)**, **3: Float**.
- **Byte Order:** Choose **Big Endian**, **Little Endian**, **Word Inv BE**, **Word Inv LE**.

- **Advanced MB Configuration:**

You can modify these Modbus parameters to adapt the Modbus communication to every installation.



IMPORTANT

These parameters are for advanced users only. As a general rule, keep the default values for proper communication with the meter.

- **Time InterFrame:** Select the minimum time between received and sent frames (0 to 100000 ms. Default value: **10 ms**).
 - **Retry Timeout:** Select the minimum time between retry frames after no response on the TCP connection (0 to 30000 ms. Default value: **5000 ms**).
 - **Conn. Timeout:** Select the minimum time before launching an error message after no response on the TCP connection (100 to 30000 ms. Default value: **10000 ms**).
 - **RX Timeout:** Select the minimum time before launching an error message when no TCP frames are received but the TCP connection is OK (100 to 30000 ms. Default value: **5000 ms**).
 - **Time Slave Chg:** Select the minimum time of silence when changing from one slave device to another one (100 to 10000 ms. Default value: **100 ms**).
- Energy meter configuration for **Pulse Meters & Binary Inputs**.

Use the **Select Meter** dropdown menu to choose the energy meter you want to configure.

- **Meter 1 Configuration.**

- **Description:** Type a description for the meter.
- **Binary Input (not editable):** It shows the gateway's digital input where the meter is connected.
- **Pulse Measurement:** Set the equivalence between pulses and energy.

**IMPORTANT**

This value must match the configuration of the energy meter device.

- **Pulse Width:** It defines the width of each pulse.

**IMPORTANT**

This value must match the configuration of the energy meter device.

- **Trigger Edge Mode:** Choose between **Falling** or **Rising** mode.
- **AC Consumption refresh time:** It defines the time to refresh the consumption values for this energy meter.

- **Energy Metering Signals Mode.** Choose between:

- **General Consumption.** It activates three signals for each indoor unit:
 - Consumption Yesterday
 - Consumption Today
 - Consumption Total
- **Cool/Heat modes consumption.** It activates six signals for each indoor unit:
 - Consumption Yesterday Heat
 - Consumption Today Heat
 - Consumption Total Heat
 - Consumption Yesterday Cool
 - Consumption Today Cool
 - Consumption Total Cool

- **Energy Metering Units:** Choose between **Wh** or **KWh**.
- **Restart consumption historical data after sending project:** If checked, consumption historical data will be restarted every time a project is sent to the gateway.

- **Assignment table.** Use this table to assign the previously selected units to each **Energy Meter**.

1. Click the corresponding cell in the **Indoor Unit** column.

Indoor Unit	Energy Meter	EM IP Address	EM Description
	Meter 1	192.168.1.1	Energy Meter 1
-	Meter 2	192.168.1.1	Energy Meter 2
-	Meter 3	192.168.1.1	Energy Meter 3

2. Click the  button.

3. Click the **Assigned** checkboxes of the indoor units you want to assign to this meter.

Meter 1 Indoor Unit Assignment

Select the Indoor Unit that are assigned to this Energy Meter

Indoor Unit	Assigned
Indoor Unit 1	☒ Assigned
Indoor Unit 5	☐ Assigned
 Indoor Unit 8	☒ Assigned
Indoor Unit 9	☐ Assigned

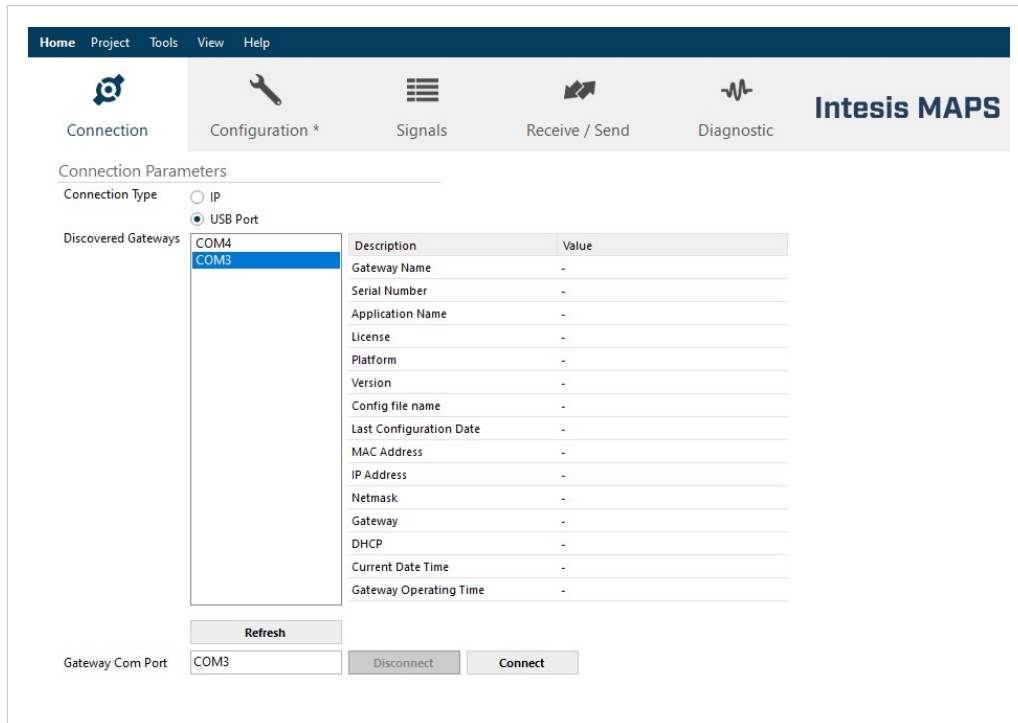
Ok

Cancel

4. Click the **OK** button.

8. Connection Tab

Figure 8. Connection tab window



1. Connect the gateway to your PC. Two possibilities are available:
 - Use the gateway's **Ethernet port** and an Ethernet CAT5 or higher cable.
 - Use the **Console** port and a USB Mini-B type to USB A type cable.
2. On the **Connection Type** parameter, select the way you connected the gateway to your PC:
 - Select **IP** if you are using the **Ethernet port** of the Carrier gateway.



NOTICE

The default password when connecting via IP is **admin**.



IMPORTANT

Make sure you have an internet connection.



NOTE

When using the IP connection, the gateway's name appears:

- **In black:** It is compatible with the selected template.
- **In red:** It is not compatible with the selected template.

- Select **USB Port** if you are using the **Console** port of the gateway.



NOTICE

No password is needed when connecting via USB.

- 3. Select your gateway from the **Discovered Gateways** list on the left.
- 4. Click **Connect**.



NOTE

If your Carrier gateway firmware doesn't match the selected template, a pop-up window will prompt you to download the correct firmware.

When selecting IP as the connection type, two additional buttons will appear:

- **Identify**: Click the **Identify** button to make the gateway's LEDs blink for 10 seconds.
- **Edit**: Click the **Edit** button to open the **Config IP settings** window.

Config IP settings

Description	Value
Mac Address	CC:3F:1D:02:A2:C0
IP Address	10.113.51.238
NetMask	255.255.252.0
Gateway	10.113.48.5
Is DHCP	☐

Password

Apply

Cancel

You can edit the **IP Address**, **NetMask**, and Default **Gateway IP**.



NOTE

These parameters can also be edited in the **Configuration** tab. See [Connection \(page 9\)](#).

9. Signals Tab

This menu lists all available signals and their parameters for both BMS and Device protocols.

Figure 9. Signals tab for the Modbus server protocol combination

Intesis MAPS											
Home Project Tools View Help											
Connection Configuration * Signals Receive / Send Diagnostic											
#	Active	Description	Modbus Slave				Carrier				
			Data L...	Format	Address	Bit	Read / Write	Unit	Unit Type	IU	Line
1	☒	On (all units) 1-Set the units On	16	0: Unsigned	0	-	1: Trigger	-	-	-	-
2	☒	Off (all units) 1-Set the units Off	16	0: Unsigned	1	-	1: Trigger	-	-	-	-
3	☒	Operation Mode Auto (all units) 1-Set Auto ...	16	0: Unsigned	2	-	1: Trigger	-	-	-	-
4	☒	Operation Mode Heat (all units) 1-Set Heat ...	16	0: Unsigned	3	-	1: Trigger	-	-	-	-
5	☒	Operation Mode Dry (all units) 1-Set Dry Mo...	16	0: Unsigned	4	-	1: Trigger	-	-	-	-
6	☒	Operation Mode Fan (all units) 1-Set Fan Mo...	16	0: Unsigned	5	-	1: Trigger	-	-	-	-
7	☒	Operation Mode Cool (all units) 1-Set Cool ...	16	0: Unsigned	6	-	1: Trigger	-	-	-	-
8	☒	Fan Speed Auto (all units) 1-Set Fan Speed A...	16	0: Unsigned	7	-	1: Trigger	-	-	-	-
9	☒	Fan Speed Low (all units) 1-Set Fan Speed Low	16	0: Unsigned	8	-	1: Trigger	-	-	-	-
10	☒	Fan Speed Mid (all units) 1-Set Fan Speed Mid	16	0: Unsigned	9	-	1: Trigger	-	-	-	-
11	☒	Fan Speed High (all units) 1-Set Fan Speed H...	16	0: Unsigned	10	-	1: Trigger	-	-	-	-
12	☒	Swing On (all units) 1-Set Swing On	16	0: Unsigned	11	-	1: Trigger	-	-	-	-
13	☒	Swing Off (all units) 1-Set Swing Off	16	0: Unsigned	12	-	1: Trigger	-	-	-	-
14	☒	Temperature Setpoint (x10°C) (all units) 17..3...	16	0: Unsigned	13	-	1: Trigger	-	-	-	-
15	☒	Operating mode force On (all Units) 1-Force...	16	0: Unsigned	14	-	1: Trigger	-	-	-	-
16	☒	Operating mode force Off (all Units) 1-Unfor...	16	0: Unsigned	15	-	1: Trigger	-	-	-	-
17	☒	Remote control lock On (all units) 1-Lock re...	16	0: Unsigned	16	-	1: Trigger	-	-	-	-
18	☒	Remote control lock Off (all units) 1-Unlock ...	16	0: Unsigned	17	-	1: Trigger	-	-	-	-
19	☒	On/Off 0-Off, 1-On	16	0: Unsigned	100	-	2: Read / Write	Unit 1 - Indoor...	V4+ Unknown ...	0	Line 1
20	☒	Operation Mode 0-Heat, 1-Cool, 2-Fan, 3-Dr...	16	0: Unsigned	101	-	2: Read / Write	Unit 1 - Indoor...	V4+ Unknown ...	0	Line 1
21	☒	Temperature Setpoint (x10°C) 17..30 °C	16	0: Unsigned	102	-	2: Read / Write	Unit 1 - Indoor...	V4+ Unknown ...	0	Line 1
22	☒	Fan Speed 0-Auto, 1-Low, 2-Med, 3-High	16	0: Unsigned	103	-	2: Read / Write	Unit 1 - Indoor...	V4+ Unknown ...	0	Line 1
23	☒	Vane Position Swing 0-Swing Off, 1-Swing On	16	0: Unsigned	104	-	2: Read / Write	Unit 1 - Indoor...	V4+ Unknown ...	0	Line 1
24	☒	Room Temperature (x10) -20..100 °C	16	1: Signed (C2)	105	-	0: Read	Unit 1 - Indoor...	V4+ Unknown ...	0	Line 1
25	☒	Unit Error Code 0-No Error, X-Error(0..255)	16	0: Unsigned	106	-	0: Read	Unit 1 - Indoor...	V4+ Unknown ...	0	Line 1
26	☒	Communication Error IU 0-No error, 1-Error	16	0: Unsigned	107	-	0: Read	Unit 1 - Indoor...	V4+ Unknown ...	0	Line 1
27	☒	Remote Control lock 0-Unlock, 1-Lock	16	0: Unsigned	108	-	2: Read / Write	Unit 1 - Indoor...	V4+ Unknown ...	0	Line 1

Active signals: 44 / -

☐ Hide Disabled signals [Edit Columns](#) [Export](#) [AA](#) [Check table](#)

Regardless of the protocol, all signals share some common characteristics and parameters:

Signals background color meaning:

- **Blue:** General system signals.
- **White:** Signals for the indoor units.

Below the list of signals, these options are available:

- **Auto BACname:** Uncheck this parameter to edit signal names.



NOTE

This parameter is only available for **BACnet**.

- **Active signals:** Number of active signals in the list / Total number of signals in the list.
- **Hide Disabled signals:** Hide all disabled signals from the list (disabled by default).

- **Edit Columns:** Click this button to hide/show any column of the list.
- **Import:** Click this button to import the signals' configuration from an XLSX file. These signals can be added to the existing ones or replace them.



NOTE

This button only appears when working with **KNX** as the BMS protocol.

- **Export:** Click this button to export the current signals' configuration to an XLSX file.
- **A:** Increases or decreases the font size.
- Click the **Check table** button to review the signals' configuration.



NOTE

If any parameter on any signal is wrong, a message will pop up with specific information about the error.



IMPORTANT

Some signal parameters can be edited depending on the protocol. After editing a parameter, such as changing the signal's name for BACnet or the group address for KNX, an asterisk appears on the **Signals** tab as a reminder that you have made changes to the project but have not saved them or sent the project to the gateway yet.

To know how to save your project, see [Saving, Opening, Importing, and Exporting the Project \(page 5\)](#).

To know how to send your project to the gateway, see [Receive/Send Tab \(page 21\)](#).

Figure 10. The Signals tab showing an asterisk

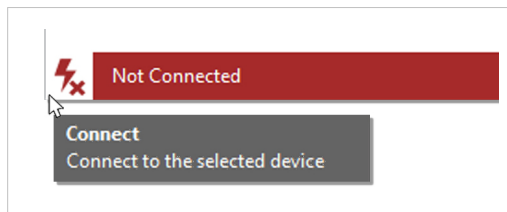
BACnet Server						
#	Active	Description	Name	Type	Instance	Units
1	☒	0-Off, 1-On	On/Off (all units)	4: BO	0	-
2	☒	1-Heat, 2-Cool, 3-Fan, 4-Dry, ...	Mode (all units)	14: MO	0	-
3	☒	1-Auto, 2-Low, 3-Med, 4-High	FanSpeed (all units)	14: MO	1	-
4	☒	0-Swing Off, 1-Swing On	VANES	4: BO	1	-
5	☒	17..30 °C	Temperature Setpoint (all units)	1: AO	0	degrees_Celsius (62)
6	☒	0-No force, 1-Force	Operating mode force (all Units)	4: BO	2	-
7	☒	0-Unlock, 1-Lock	Remote control lock (all units)	4: BO	3	-
8	☒	0-Off, 1-On	U01_On/Off_S	3: BI	100	-
9	☒	0-Off, 1-On	U01_On/Off_C	4: BO	100	-

10. Receive/Send Tab

Send:

Once you have finished setting the parameters, you have to send the configuration to the gateway:

1. Click the **Send** button.
 - a. If the gateway is still factory-set, you will be prompted to save the project on your PC. Once saved, the configuration is automatically sent to the gateway.
 - b. If you have already saved the project, the configuration is automatically sent to the gateway.
2. Connect again with the gateway after sending the file.



NOTICE

The gateway reboots automatically once the new configuration is loaded. This process may take a few seconds.

Receive:

Use this function to load the configuration of a gateway to Intesis MAPS.



TIP

This function may be helpful when you need to change some parameters of an already configured gateway.

Once the configuration is completed and sent, the gateway is already operative. Even so, you should review that everything works correctly by entering the **Diagnostic** tab.

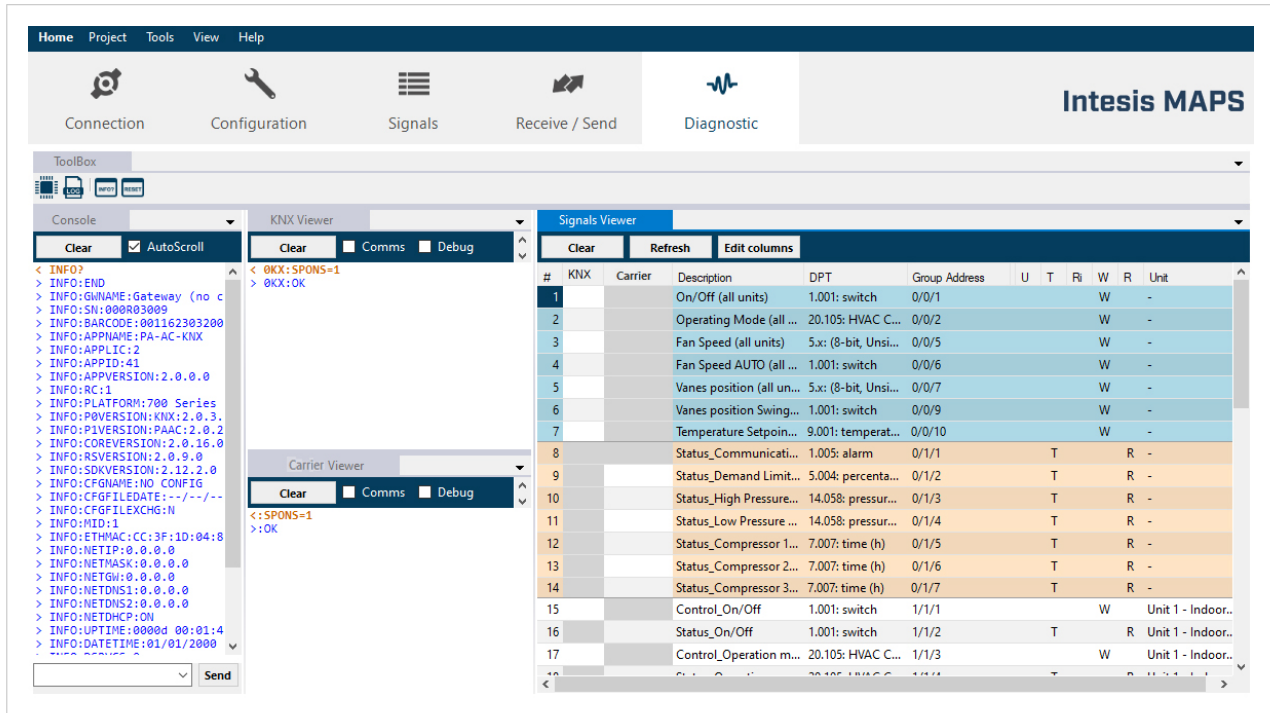
11. Diagnostic Tab



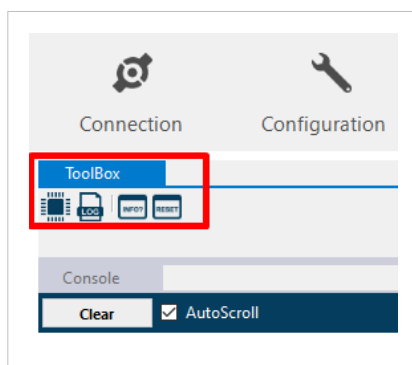
IMPORTANT

Connection with the gateway is required to use the diagnostic tools.

Figure 11. Diagnostic tab window. Find the ToolBox between the upper tabs bar and the Console view. Below it, from left to right: Console viewer, Protocol viewers (one above the other), and the Signals viewer



TOOLBOX



From left to right:

- **Microprocessor icon:** Check the current hardware status of the gateway.
- **LOG:** Set Intesis MAPS in logging mode to record all the information present in the viewers and save it in a .zip file.
- **INFO?:** Get some gateway information.

- **RESET:** Reset the gateway.

**NOTE**

Depending on your screen resolution, the **ToolBox** icons may appear partially hidden behind the **Viewers** window.

VIEWERS

Intesis MAPS provides several viewers:

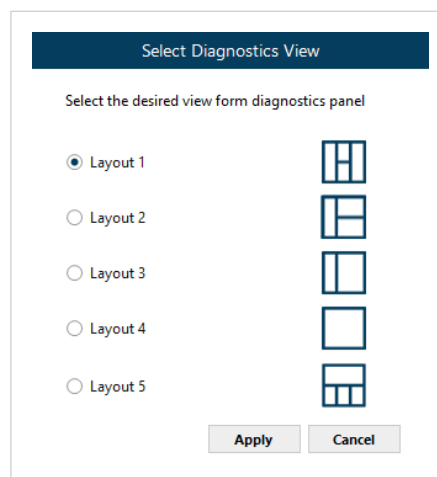
- A generic console viewer for general information about communications and the gateway status.
- A viewer for both protocols to check their current status.
- A signals viewers to simulate the BMS behavior or check the system's current values.

**NOTE**

Use the refresh button to get updated values on the signals viewer.

The layout of these viewers can be modified:

- Using the **Select Diagnostics View** option from the **View** menu:

**NOTE**

Layouts 3 and 4 offer two different tabbed options:

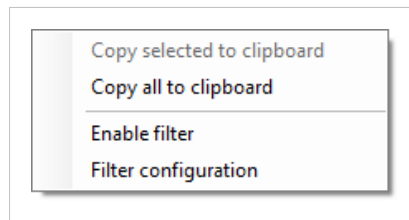
- Fixed console to the left and tabbed browser for the other viewers
- Full tabbed browser

- Clicking and dragging the border of a viewer. To do so, place the cursor over the edge of a viewer. On the vertical edges, the cursor changes to  to adjust the width, and on the horizontal edges, the cursor changes to  to adjust the height.

Viewers can also be arranged manually by clicking and dragging them from their title bar, to use them as independent windows or to position them in relation to other viewers.

FILTERING

A filtering tool is available for the console and the bus viewers to find the desired information more efficiently. To use this tool, right-click on the viewer.



The options available for this tool are:

- **Copy selected to clipboard:** It copies the selected text into the clipboard. If no text is selected, this option is disabled.
- **Copy all to clipboard:** It copies all the information from the viewer to the clipboard.
- **Enable filter:** This option enables or disables the configured filter. To use this option, a filter must be defined beforehand under Filter configuration.

- **Filter configuration:** The filter itself is defined here, using some additional options:
 - **Search Condition:**
 - **Filter Type:**
 - **Plain text:** It searches all the communication frames that include the text specified in the **Search Condition String** below.
 - **Regular Expression:** It searches all the communication frames that match the regular expression specified in the **Search Condition String** below.



NOTE

A regular expression is a sequence of characters that specifies a match pattern in text. If you are not familiar with regular expressions, use the **Plain text** option instead.

- **Display:**
 - **Visualization Options:**
 - **Filter:** It removes all the communication frames that do not fulfill the filter condition specified in the **Search Condition String**.
 - **Highlight:** It highlights the communication frames that fulfill the filter condition specified in the **Search Condition String**.

12. BMS Protocols Available

The Carrier CAR-DMS-770-004 gateway supports BACnet/IP and MS/TP, Modbus TCP and RTU, KNX, and Home Automation communication protocols. The following sections provide the most relevant information for each one.

13. BACnet

Figure 12. BACnet configuration parameters

The screenshot shows the Intesis MAPS configuration interface. The top navigation bar includes 'Home', 'Project', 'Tools', 'View', and 'Help'. Below this is a secondary bar with icons for 'Connection', 'Configuration', 'Signals', 'Receive / Send', and 'Diagnostic'. The 'Configuration' tab is active, and the 'BACnet Server' option is selected in the left sidebar. The main configuration area is titled 'BACnet Server General Configuration' and contains the following fields and sections:

- Device Name:** A text input field containing 'Device MD-AC-BAC'.
- Device Instance:** A numeric input field containing '246'.
- Password:** A text input field containing '(empty)', with a 'Change' button and a checkbox labeled 'Disable BACnet password (not recommended)'.
- Objects Information:** A button labeled 'Show'.
- BACnet Instances:** A dropdown menu set to 'Fixed'.
- Gateway Mode:**
 - Mode:** Radio buttons for 'IP' (selected) and 'MSTP'.
 - UDP Port:** A numeric input field containing '47808'.
 - Network Role:** A dropdown menu set to 'Disabled'.
 - Show Advanced Configuration:** A checkbox that is currently checked.
- Notification Class:** A section with an 'Edit Notification Class' button labeled 'Edit'.
- Calendars:** A section with an 'Edit Calendars' button labeled 'Edit'.
- Schedules:** A section with an 'Edit Schedules' button labeled 'Edit'.
- Trend Logs:** A section with an 'Edit Trend Logs' button labeled 'Edit'.

13.1. BACnet Server General Configuration

- **Device Name:** Type a descriptive name for your gateway.
- **Device Instance:** Set the BACnet device object instance property. This is a unique identifier for the gateway inside a single BACnet network segment (0 to 4194302. Default value: **246**).
- **Password:** Click the **Change** button and follow the instructions to set a password for the gateway.
- **Objects Information:** Click **Show** to see a table with the type of objects available.
- **BACnet Instances:** Define the type of BACnet instances.
 - **Fixed:** Instances cannot be modified.
 - **Custom:** The BACnet instances list can be edited.
- **Disable BACnet password (not recommended)** (parameter disabled by default): Disable the BACnet password.

**IMPORTANT**

Keep the BACnet password enabled to ensure the security of the gateway and the installation.

13.2. Gateway Mode

- **Mode:** Select the communication type.
 - **IP** (default value): IP communication over Ethernet.
 - **UDP Port:** Select the UDP port for the BACnet/IP communication (1 .. 65535).

**NOTE**

The UDP port is set to 47808 (BAC0 in hexadecimal) by default.

- **Network Role** (disabled by default): Define the gateway behavior regarding other network elements.

**IMPORTANT**

If you are unfamiliar with these options, please leave the parameter as **Disabled** to avoid issues with the BACnet communication/configuration.

- **Disabled:** The gateway provides no special service regarding network communication or settings.
 - **Foreign Device:** The gateway acts as a foreign device from the BACnet network point of view.
 - **BBMD:** The gateway acts as a BBMD in the BACnet network.
- **MS/TP:** Serial communication over the EIA-485 bus.
 - **Baud rate:** Select the communication speed: Auto, 9600, 19200, 38400, 57600, 76800, or 115200 bps.

**NOTE**

The baud rate is set to Auto by default.

- **Max. Masters:** Set the highest master MAC address in the MS/TP network (1 .. 127. Default value: **127**).
- **Max. Info Frames:** Set the maximum number of messages that can be sent onto MS/TP network per token pass (1 .. 100. Default value: **1**).
- **MAC Address:** Set the MAC address of the gateway in the MS/TP network (0 .. 127. Default value: **1**).

13.3. BACnet Advanced Configuration

Show Advanced Configuration: Open advanced configuration parameters (disabled by default).



IMPORTANT

These settings are for advanced users only. We recommend leaving the predetermined configuration.

13.3.1. Notification Class

Click **Edit** to open the **Notification Class Configuration** parameters.

Figure 13. Notification Class Configuration window

Click the **+** button to create up to ten Notification_Class objects. For each one, you can set:

- **Object Name:** Type a name for the Notification_Class.
- **Object Instance:** Sets the BACnet object instance for the Notification_Class.
- **Recipient List:** Click the **+** button to create eight different BACnet destinations. For each one, you can set:
 - **Destination Name:** Type a descriptive name for the BACnet destination.
 - **Transitions:** Select which transitions will force this Notification_Class to be active:
 - **Off_Normal** (disabled by default): When the status changes from off to normal.
 - **Fault** (disabled by default): When the status changes to fault.
 - **Normal** (disabled by default): When the status changes from fault to normal.

- **Recipient Type:** Select the type of destination:
 - **Device** (default value): The recipient is a device.
 - **Object Instance:** Select the device instance number for this device.
 - **Address (IP):** The recipient is set using the specific address on BACnet/IP. Specify:
 - **Network Number** (0 .. 65535. Default value: **0**).
 - **IP address** (192.168.100.10 by default) and **Port** (47808 by default) for the destination.
 - Set the destination as a **Global Broadcast** (disabled by default).
 - Set the destination as a **Broadcast** (disabled by default).
 - **Address (MS/TP):** The recipient is set using the specific address on BACnet MS/TP. You'll have to specify:
 - **Network Number** (0 .. 65535. Default value: **0**).
 - **MS/TP MAC Address** (0 .. 255. Default value: **0**).
 - Set the destination as a **Global Broadcast** (disabled by default).
 - Set the destination as a **Broadcast** (disabled by default).
 - **Address (Other):** The recipient is set using another type of address. You'll have to specify:
 - **Network Number** (0 .. 65535. Default value: **0**).
 - **Other Address** (HEX string. Default value: **ff**).
 - Set the destination as a **Global Broadcast** (disabled by default).
 - Set the destination as a **Broadcast** (disabled by default).
- **BACDestination Advanced Options** (disabled by default): Check this option to show some advanced options.
 - **Valid days:** Sets the days for receiving the notification.
 - **From:** Sets the starting point for the valid period.
 - **To:** Sets the ending point for the valid period.
 - **Issue Confirmed Notifications** (disabled by default): Determines if notification events are sent as Confirmed or Unconfirmed to the BACnet destination.

**IMPORTANT**

Sending them as Confirmed requires Ack.

- **Notification Class Advanced Options** (disabled by default): Check this option to show the **Ack Required** options.
 - **Off_Normal** (disabled by default): Enable the acknowledgment for the TO_OFF_NORMAL event.
 - **Fault** (disabled by default): Enable the acknowledgment for the TO_FAULT event.
 - **Normal** (disabled by default): Enable the acknowledgment for the TO_NORMAL event.

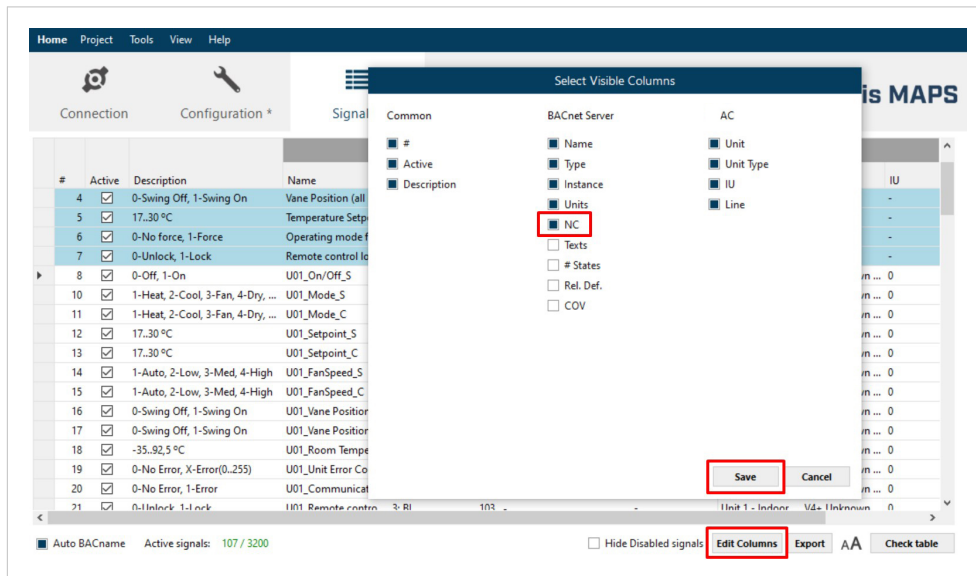
**NOTE**

Set the priority for each parameter (0 .. 255. Default value: **140**).

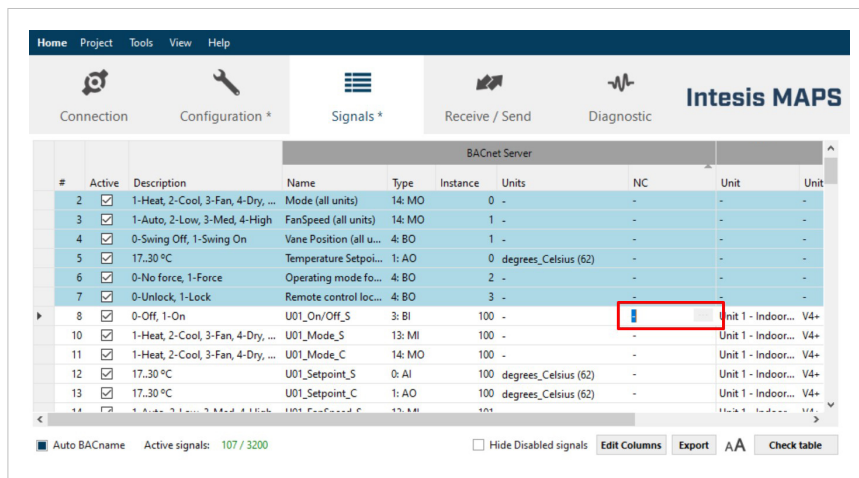
Once you have created and configured the needed Notification_Class objects, the next step is to assign them to signals:

1. Go to the **Signals** tab.

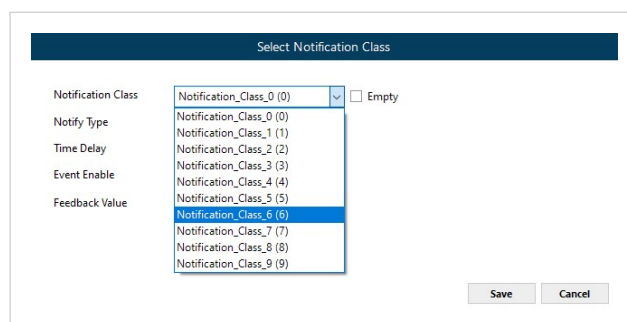
- Click the **Edit Columns** button from the bottom menu.



- In the **Select Visible Columns** window, check **NC**.
- Click **Save**.
A new column named **NC** is now visible.
- Look for the signal to which you want to assign the Notification_Class object and click the corresponding cell in the NC column.



- Click the **...** button.
- In the **Select Notification Class** window, uncheck the **Empty** parameter.
- Use the dropdown menu to select the Notification_Class object.



9. Set the rest of the parameters:

**NOTE**

These parameters vary depending on the signal type.

- **Notify Type:** Choose if the notification is sent as an **Alarm** (default) or an **Event**.
- **Time Delay:** Set the time in seconds before launching the notification (0 .. 65535. Default value: **0 seconds**).
- **Event Enable:** Click in the field to enable/disable the following options:
 - **TO_OFF_NORMAL** (enabled by default): Enable/disable the TO_OFF_NORMAL event.
 - **TO_FAULT** (enabled by default): Enable/disable the TO_FAULT event.
 - **TO_NORMAL** (enabled by default): Enable/disable the TO_NORMAL event.
- **Initial Feedback Value:** Set the initial feedback value (1 .. 5. Default value: **2**)
- **Alarm Value:** Choose if the alarm value is **Active** or **Inactive** (default).
- **Alarm Value LUT:** Set an alarm value look-up table collection (use commas to separate values).
- **Feedback Value:** Choose if the feedback value is **Active** or **Inactive** (default).
- **High Limit** (Disabled by default): Enable this parameter to set the high limit for the notification.
- **Low Limit** (Disabled by default): Enable this parameter to set the low limit for the notification (0.00 .. 999.00).
- **Deadband:** Set the deadband for the notification.

10. Click **Save** to save the changes.

Once assigned, the instance number of the Notification_Class object appears in the **NC** column.

#	Active	Description	Name	Type	Instance	Units	NC	Unit	Unit
4	☒	0-Swing Off, 1-Swing On	Vane Position (all u...	4: BO	1	-	-	-	-
5	☒	17..30 °C	Temperature Setpoi...	1: AO	0	degrees_Celsius (62)	-	-	-
6	☒	0-No force, 1-Force	Operating mode fo...	4: BO	2	-	-	-	-
7	☒	0-Unlock, 1-Lock	Remote control Mec...	4: BO	3	-	-	-	-
8	☒	0-Off, 1-On	U01_On/Off_S	3: BI	100	-	6	Unit 1 - Indoor...	V4+
10	☒	1-Heat, 2-Cool, 3-Fan, 4-Dry, ...	U01_Mode_S	13: MI	100	-	-	Unit 1 - Indoor...	V4+
11	☒	1-Heat, 2-Cool, 3-Fan, 4-Dry, ...	U01_Mode_C	14: MO	100	-	-	Unit 1 - Indoor...	V4+
12	☒	17..30 °C	U01_Setpoint_S	0: AI	100	degrees_Celsius (62)	-	Unit 1 - Indoor...	V4+
13	☒	17..30 °C	U01_Setpoint_C	1: AO	100	degrees_Celsius (62)	-	Unit 1 - Indoor...	V4+
14	☒	1-Auto, 2-Low, 3-Med, 4-High	U01_FanSpeed_S	13: MI	101	-	-	Unit 1 - Indoor...	V4+
15	☒	1-Auto, 2-Low, 3-Med, 4-High	U01_FanSpeed_C	14: MO	101	-	-	Unit 1 - Indoor...	V4+

Auto BACName Active signals: 107 / 3200 ☐ Hide Disabled signals [Edit Columns](#) [Export](#) [Check table](#)

13.3.2. Calendars

Click **Edit** to open the **Calendars Configuration** parameters.

Figure 14. Calendars Configuration window

Click the **+** button to create up to ten calendars. For each one, you can set:

- **Object Name:** Type a name for this BACnet object.
- **Object Instance:** Set the BACnet object instance for the calendar (0 .. 4194303. Default value: **0**).
- **Calendar Entries:** Click the **+** button to determine the number of calendar entries (patterns). Create up to 32 different entries per calendar. For each entry, you can set:
 - **Entry Name:** Type the calendar entry name.
 - **Type:** Set the date type for the calendar:
 - **Date** (default value): To select a single day.
 - **Date Range:** To select a date range. Set the starting day (**From**) and the ending day (**To**).
 - **Week N Day:** To set the date by selecting a **Month**, a **Week of the Month**, and/or a **Day of the Week**.



NOTE

Select an asterisk (*) to apply the rule to all cases.

13.3.3. Schedules

Click **Edit** to open the **Schedules Configuration** parameters.

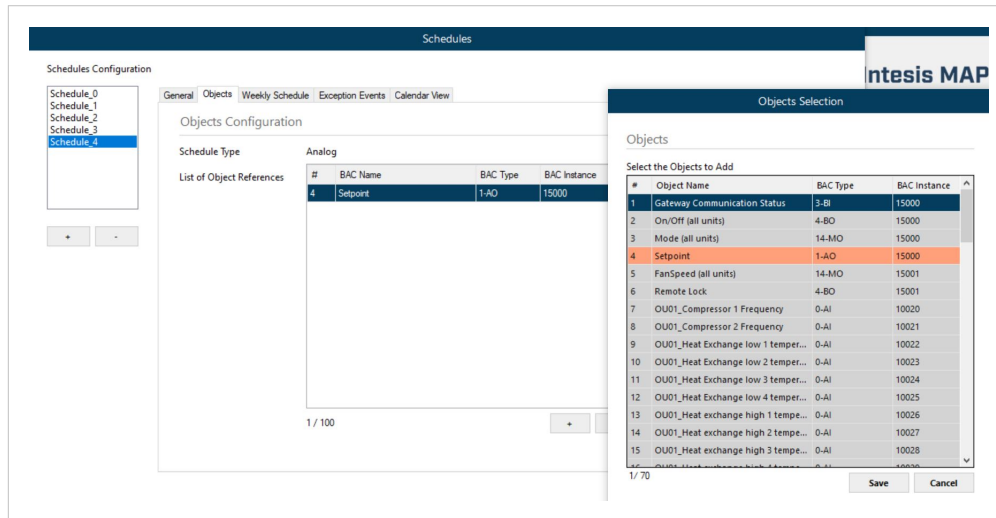
Figure 15. Schedules Configuration window

Click the **+** button to create up to ten schedules. For each one, you can set:

- **General Configuration:**
 - **Name:** Type a name for this BACnet object.
 - **Object Instance:** Set the BACnet object instance for the schedule (0 .. 4194303. Default value: **0**).
 - **Schedule Type:** Set it as an **Analog** (default), **Binary**, or **Multistate** object.
 - **Priority for Writing:** Select the writing priority of the schedule value (1 .. 16. Default value: **16**).
 - **Schedule Default:** Set the default value for the schedule (0.00 .. 65535.00. Default value: **0.00**).
 - **Effective Period:** Sets the starting and ending day of the effective period.

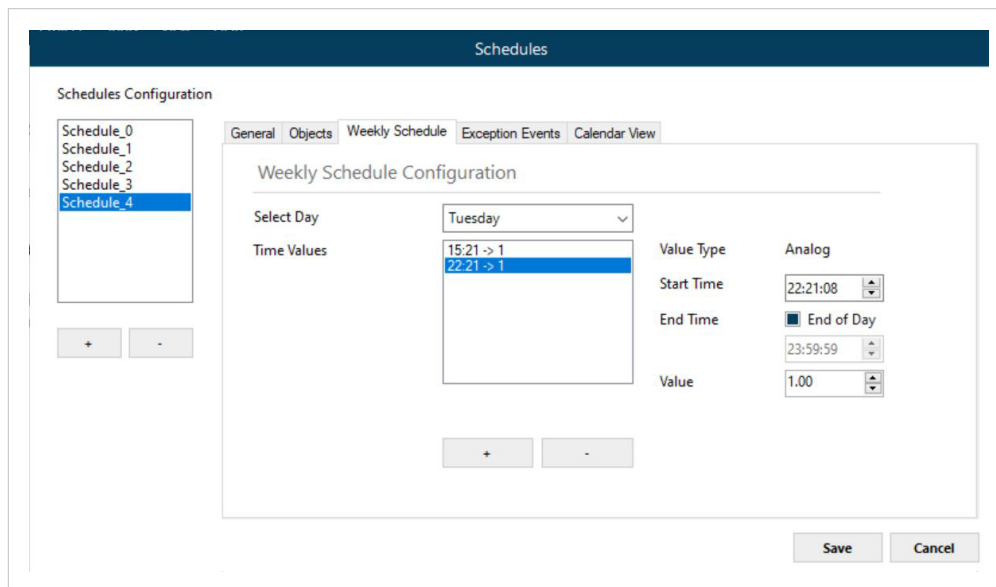
- **Objects Configuration:** Include BACnet objects in a specific schedule.

Figure 16. Objects Configuration window



- **Schedule Type:** It shows the previous **Schedule Type** object you selected: Analog, Binary, or Multistate.
- **List of Object References:** Click the **+** button to open the **Objects Selection** window, where the available objects are listed. Select the object and click **Save** to add it.
- **Weekly Schedule Configuration:**

Figure 17. Weekly Schedule Configuration window



- **Select Day:** Select which day(s) of the week the schedule applies.
- **Time Values:** Click the **+** button to create up to six time periods. For each one, set the **Starting Time**, the **End Time**, and the **Value**.

- **Exception Events Configuration:** Create exceptions to the schedules.

Figure 18. Exception Events Configuration window

- **Exception Events List:** Click the **+** button to create up to 16 different exceptions. For each one, you can set:
 - **Name:** Type a name for the exception.
 - **Event Priority:** Set a priority for the exception (1 [maximum priority] .. 16 [minimum priority]. Default value: 16).
 - **Time Values:** Click the **+** button to can create up to six time periods. For each one, set the **Starting Time**, the **End Time**, and the **Value**.
 - **Exception Type:** Set the type of date for the exception:
 - **Date** (default): Select a single day.
 - **Date Range:** Select a date range. Set the starting day (**From**) and the ending day (**To**).
 - **Week N Day:** Set the date by selecting a **Month**, a **Week of the Month**, and/or a **Day of the Week**.



NOTE

Select an asterisk (*) to apply the rule to all cases.

- **Calendar:** Select a Calendar to apply its values to the exception event.

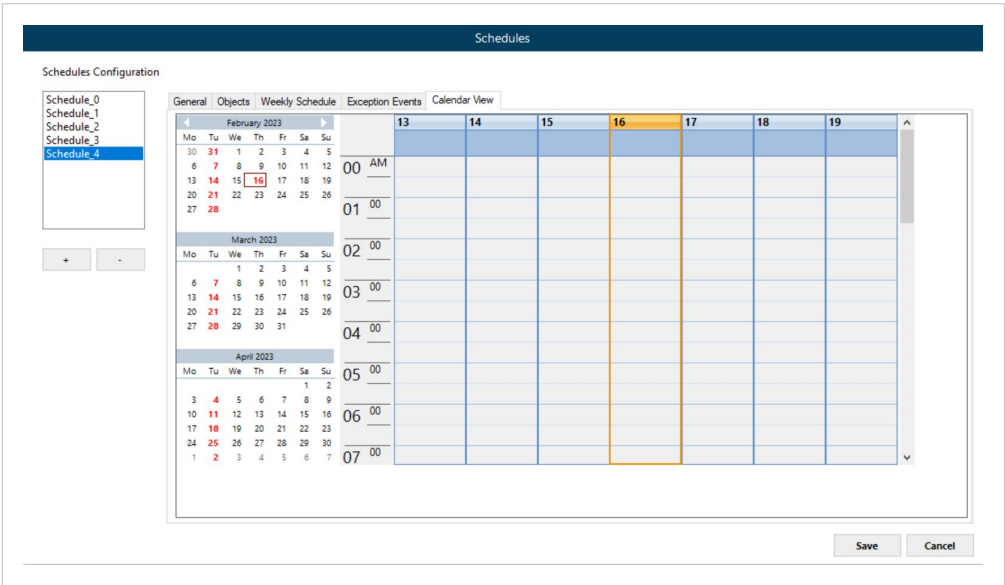


NOTE

This option is only enabled when at least a Calendar has been created.

- **Calendar View:** Display a calendar to consult all the configured schedules.

Figure 19. Calendar window



13.3.4. Trend Logs

Click **Edit** to open the **Trend Logs** parameters.

Figure 20. Trend Logs Configuration window

Trend Logs Configuration

Trend Log 0
Trend Log 1
Trend Log 2
Trend Log 3

General Configuration

Object Name: Trend Log 3

Object Instance: 3

Logging Type: Polled

Log Interval: 300 sec

Client COV Increment: 0.00

☒ Enable

☒ Stop When Full

Date Time Configuration

Start/Stop Time: ☒ Always ☐ Range

Selected Objects (max 10)

#	BAC Name	BAC Type	BAC Instance
2	On/Off (all units)	4-BO	15000
3	Mode (all units)	14-MO	15000

Save Cancel

Click the **+** button to create up to five trend logs. For each one, you can set:

- **Object Name:** Type a name for the trend log.
- **Object Instance:** Set the BACnet object instance for the trend log (0 .. 4194303. Default value: **0**).
- **Logging Type:** Select the trend log type:
 - **Polled** (default value): The trend log is triggered when polling.
Use the **Log Interval** parameter to set the poll cadence in seconds (1 .. 65535. Default value: **300 sec**).
 - **COV:** The trend log is triggered when there is a change of value.
Use the **Client COV Increment** parameter to set (0.00 .. 100000.00. Default value: **0.00**).
 - **Triggered:** The trend log is triggered by the BACnet system.
- **Enable** (enabled by default): Enable or disable the specific trend log even if the trend log is in the valid time range.
- **Stop When Full** (enabled by default): If **enabled**, it will stop the trend log when the buffer is full. If **disabled**, it will keep the last 2880 valid values.
- **Date Time Configuration:** Set the period when trend logs are active.
 - **Always** (default value).
 - **Range:** Use the **Start Time** and **End Time** parameters to set a time range.

- **Selected Objects (max 10):** Click the **+** button to include up to ten BACnet objects in a trend log. To remove previously added objects, use the **-** button.

Figure 21. BACnet Objects Selection

Objects Selection

Objects

Select the Objects to Add

#	Object Name	BAC Type	BAC Instance
1	On/Off (all units)	4-BO	0
2	Mode (all units)	14-MO	0
3	FanSpeed Ext (all units)	14-MO	2
4	Vane Position Left/Right (all units)	14-MO	3
5	Vane Position Up/Down (all units)	14-MO	4
6	Temperature Setpoint (all units)	1-AO	0
7	Operating mode force (all Units)	4-BO	2
8	Remote control lock (all units)	4-BO	3
9	U01_On/Off_S	3-BI	100
10	U01_On/Off_C	4-BO	100
11	U01_Mode_S	13-MI	100
12	U01_Mode_C	14-MO	100
13	U01_Setpoint_S	0-AI	100
14	U01_Setpoint_C	1-AO	100
15	U01_FanSpeed_Extended_S	13-MI	102

2 / 39

Save

Cancel

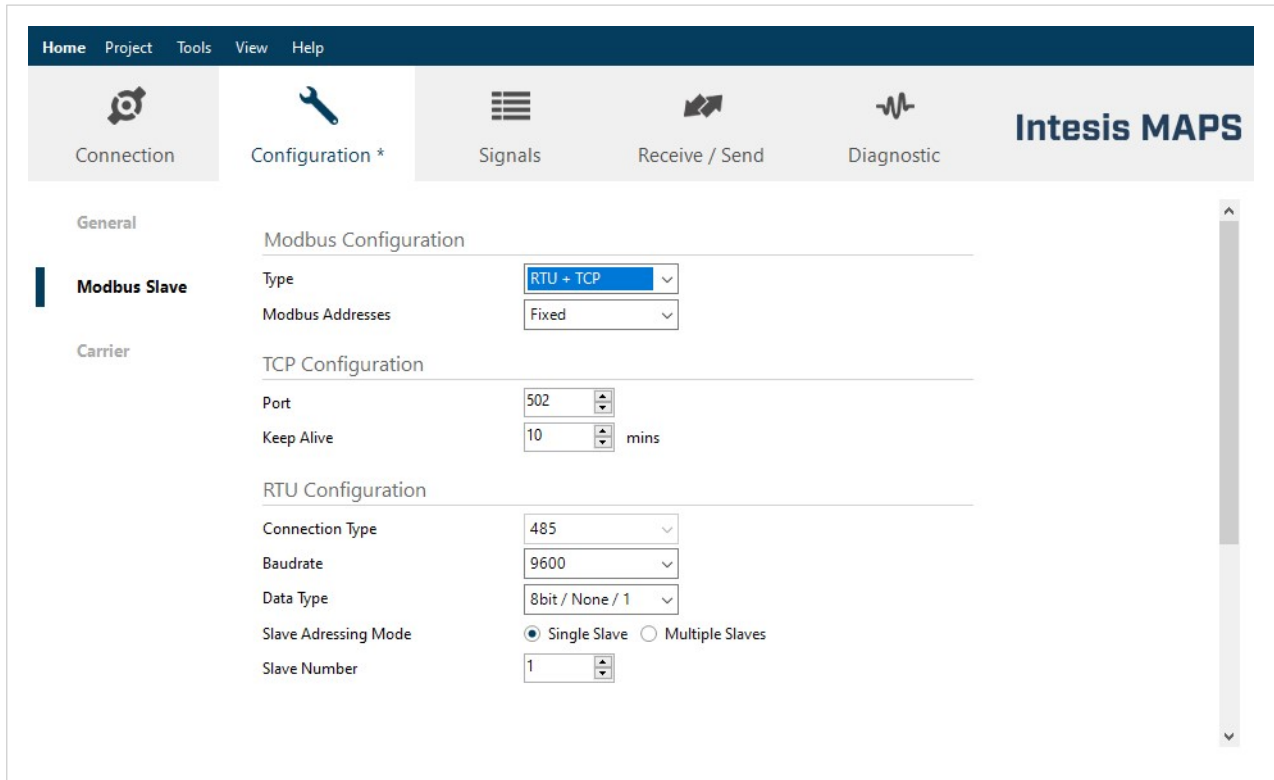


NOTE

To select multiple items in both the **Selected Objects** and the **Objects Selection** tables, press and hold the **Shift** key when clicking for consecutive objects or the **Control** key for non-consecutive objects. Objects already added are shown with an orange background.

14. Modbus

Figure 22. Modbus configuration parameters



The screenshot displays the Intesis MAPS configuration window. The top navigation bar includes 'Home', 'Project', 'Tools', 'View', and 'Help'. Below this, a secondary bar contains icons for 'Connection', 'Configuration *', 'Signals', 'Receive / Send', and 'Diagnostic'. The 'Configuration *' tab is selected, showing a sidebar with 'General' and 'Modbus Slave' (highlighted). The main area is divided into sections: 'Modbus Configuration' with 'Type' set to 'RTU + TCP' and 'Modbus Addresses' set to 'Fixed'; 'TCP Configuration' with 'Port' at 502 and 'Keep Alive' at 10 mins; and 'RTU Configuration' with 'Connection Type' at 485, 'Baudrate' at 9600, 'Data Type' at 8bit / None / 1, 'Slave Addressing Mode' set to 'Single Slave' (radio button), and 'Slave Number' at 1.

14.1. Modbus Configuration

- **Type:** Select the communication type.
 - **RTU:** Serial communication over the EIA-485 bus.
 - **TCP:** IP communication over Ethernet.
 - **RTU + TCP:** Simultaneous communication: serial over the EIA-485 bus and IP over Ethernet simultaneously.
- **Modbus Addresses:** Define the type of Modbus register list.
 - **Fixed:** Addresses cannot be modified.
 - **Custom:** The Modbus register list can be freely edited.

14.2. TCP Configuration

By selecting TCP as the communication type, you can configure:

- **Port:** Set the port for communication between the gateway and the Modbus TCP system (1 .. 65535).

**NOTE**

The default port is 502.

- **Keep Alive:** Set the time in minutes before sending a keep-alive message (1 .. 1440. Default value: **10 minutes**).

**NOTE**

Set the parameter to 0 to disable this function.

- **Slave Addressing Mode:**
 - Select the **Single Slave** option if you have one single server.
 - Select the **Multiple Slaves** option if you have multiple servers.
- **Slave Number:** Set the server address (1 .. 255. Default value: **1**).

14.3. RTU Configuration

By selecting RTU as the communication type, you can configure:

- **Baudrate:** Select the communication speed: 1200, 2400, 4800, 9600, 19200, 38400, 57600, or 115200 bps.

**NOTE**

The baudrate is set to 9600 bps by default.

- **Data Type:** Select the frame format (Data bits / Parity / Stop bits).
 - **8bit / None / 1** (default values)
 - **8bit / Even / 1**
 - **8bit / Odd / 1**
 - **8bit / None / 2**
- **Slave Addressing Mode:**
 - Select the **Single Slave** option if you have one single server.
 - Select the **Multiple Slaves** option if you have multiple servers.
- **Slave Number:** Set the server starting address (1 .. 255. Default value: **1**).

15. KNX

Figure 23. KNX configuration parameters

Home Project Tools View Help

Connection Configuration Signals Receive / Send Diagnostic Intesis MAPS

General

KNX

Carrier

Device Configuration

Physical Address 15.15.255

Extended Addresses ☐ Enabled

Operating Mode

KNX DPT for HVAC operation mode comm. object

Base DPT 20.105 - DPT_HVACContrMode (0-Auto, 1-Heat, 3-Cool, 9-Fan, 14- Dry) ▼

Extra DPT ☒ 1.100 - DPT_Heat/Cool (0-Cool, 1-Heat) ☐ 5.001 - DPT_Scaling (PID compatibility)

Use of 1-bit Operating Modes

☐ 1-bit Control Objects ☐ 1-bit Status Objects

Temperature Sensor

Ambient temperature provided from KNX ☒ Enabled

Fan Speed

KNX DPT for Fan Speed comm. objects DPT_Scaling (5.001) ▼

Use of 1-bit Fan Speed

☐ 1-bit Control Objects ☐ 1-bit Status Objects

Vanes Position

Auto / Swing Vanes ☐ Enabled

KNX DPT for Vane Position comm. objects DPT_Scaling (5.001) ▼

Use of 1-bit Vane Position

☐ 1-bit Control Objects ☐ 1-bit Status Objects

15.1. Device Configuration

- **Physical Address:** Sets the gateway's KNX physical address in the network. This is a unique identifier for the gateway inside a single KNX TP-1 segment. The maximum value is 15.15.255 (default).
- **Extended Addresses:** Select it to extend the range of available KNX group addresses from the standard 15/7/255 to 31/7/255.

15.2. Operating Mode

These parameters are related to the control and monitoring of the AC unit operating mode.

- **KNX DPT for HVAC operation mode comm. object:**
 - **Base DPT:** Datapoint Type to control and monitor the operating mode.
 - DPT_20.105. DPT_HVACContrMode: 0-Auto, 1-Heat, 3-Cool, 9-Fan, 14-Dry.
 - DPT_5.x (non-standardized): 0-Auto, 1-Heat, 2-Dry, 3-Fan, 4-Cool.

- **Extra DPT:** You can enable these additional Datapoint Types:
 - DPT_1.100. DPT_Heat/Cool: 0-Cool, 1-Heat.
 - DPT_5.001. DPT_Scaling (PID compatibility): It enables two objects: **Control_Heat Mode & On** and **Control_Cool Mode & On**, whose type is DPT_Scaling (0...100%). They provide compatibility with certain thermostats oriented to the operation of valves for heating and cooling. When these objects receive a value > 0%, the corresponding operating mode (heat or cool) and the status On are sent to the indoor unit. When the value received is 0%, the status sent for the operating mode is Off.
- **Use of 1-bit Operating Modes:**
 - **1-bit Control Objects:** Enables a bit-type object to control each operating mode.
 - **1-bit Status Objects:** Enables a bit-type object for the monitoring of each operating mode.

15.3. Temperature Sensor

- **Ambient temperature provided from KNX:** Enables the object **Control_KNX ambient temperature**, which allows writing the temperature received from a sensor from the KNX side as the indoor unit reference temperature.
When enabled, the gateway uses a formula to establish which temperature must be sent to the indoor unit:

$$S_{AC} = T_{AC} - (T_{BMS} - S_{BMS})$$
 Where:
 - S_{AC} : AC indoor unit setpoint temperature.
 - T_{AC} : AC indoor unit return temperature.
 - T_{BMS} : Ambient temperature provided from KNX.
 - S_{BMS} : Setpoint temperature provided from KNX.



NOTE

Due to this function, the indoor unit and the KNX temperature setpoints may differ.



IMPORTANT

When using this function, the user won't be able to use any external device, such as a remote controller, to set the AC indoor unit temperature.

15.4. Fan Speed

These parameters are related to the control and monitoring of the AC unit fan speed.

- **KNX DPT for Fan Speed comm. objects:**
 - **DPT_Scaling (5.001):** Percentage values are used to control/monitor the fan speed. Their value will vary according to the number of fan speeds available for the unit.
 - **DPT_Value_1_Ucount (5.010):** Enumerated values are used to control/monitor the fan speed.
- **Use of 1-bit Fan Speed:**
 - **1-bit Control Objects:** Enables a bit-type object to control the fan speed.
 - **1-bit Status Objects:** Enables a bit-type object for the monitoring of each fan speed.

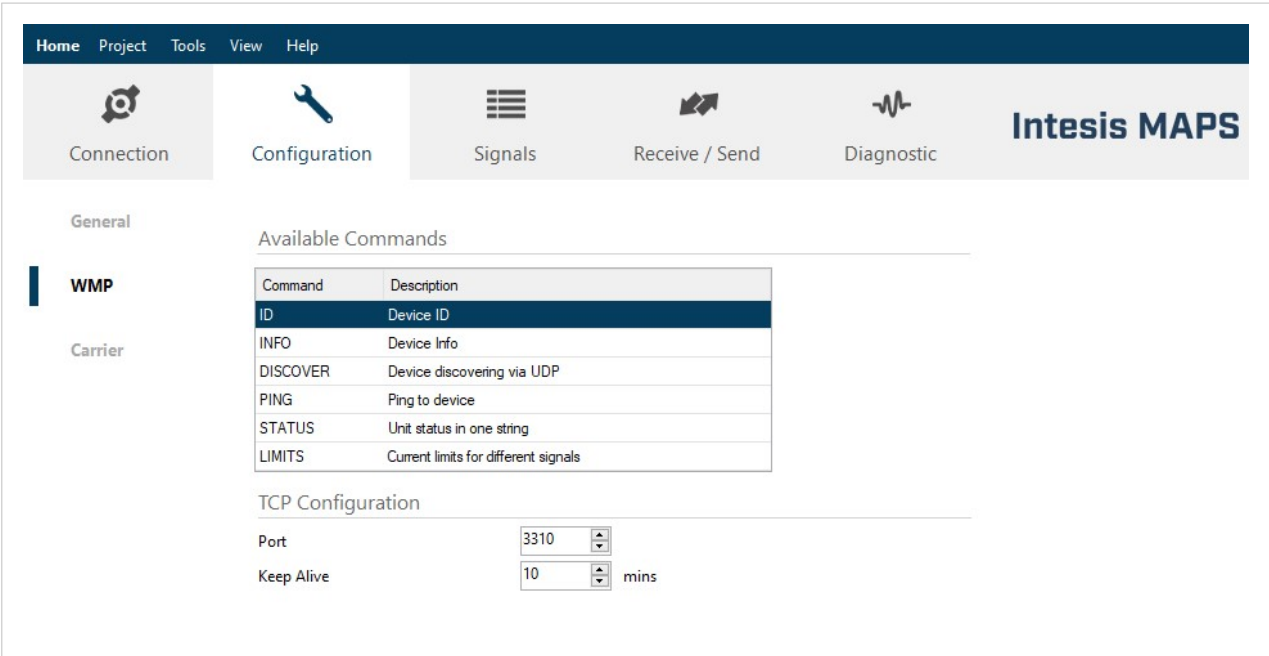
15.5. Vanes Position

These parameters are related to the control and monitoring of the AC unit vanes position.

- **Auto / Swing Vanes:** It enables Auto and Swing control and monitoring objects.
- **KNX DPT for Vane Position comm. objects:**
 - **DPT_Scaling (5.001):** Percentage values are used to control/monitor the vanes position. Their value will vary according to the number of positions available for the unit.
 - **DPT_Value_1_Ucount (5.010):** Enumerated values are used to control/monitor the vanes position.
- **Use of 1-bit Vane Position:**
 - **1-bit Control Objects:** Enables a bit-type object to control the vanes position.
 - **1-bit Status Objects:** Enables a bit-type object for the monitoring of each vanes position.

16. Home Automation

Figure 24. Home Automation configuration parameters



16.1. Available Commands

This informative section displays all commands available for communication between the gateway and the Home Automation system:

- ID, INFO, DISCOVER, PING, STATUS, and LIMITS.

16.2. TCP Configuration

- **Port:** You can set the TCP port for the communication between the gateway and the Home Automation system.



NOTE

The default port is 3310.

- **Keep Alive:** Set the time in minutes before sending a keep-alive message (1 .. 140. Default value: **10 min**).



NOTE

Set the parameter to 0 to disable this function.

17. Field Configuration: Change the Gateway's Protocol

Reconfiguring the gateway with a different protocol is very easy:

1. Connect the gateway to the PC and open the configuration tool Intesis MAPS.
2. Select the new template you need.
3. Click **Next** or double-click the template in the list.
4. A message will pop up, asking if you want to save the project currently loaded in the gateway.
5. Click **Yes** or **No**, depending on your needs.
6. Configure the needed parameters and signals for your new project.
7. Send the configuration to the gateway.



NOTE

The configuration tool will indicate if new firmware is needed, and you'll just have to download it from Intesis MAPS.