ENGLISH

INTESIS MAPS: CONFIGURATION AND MONITORING SOFTWARE

IN775FGL00XO000 GATEWAY CONFIGURATION GUIDE FOR FUJITSU

INTESIS MAPS USER MANUAL
Version 1.0.1
Publication date 2023-12-01

Intesis MAPS

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1. Introduction

Intesis MAPS© is a software tool for configuring and monitoring the Intesis® gateways. Intesis MAPS has been designed and developed in-house, assuring an up-to-date tool to get all the potential of our 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:
  - Intesis IN775FGL00xO000 gateway
  - Gateway documentation:
    - Installation sheet: www.intesis.com/docs/installation-sheet-in775fglxxxo000
    - User manual: www.intesis.com/docs/user-manual-in775fglxxxo000
  - USB Mini-B type to USB A type cable to connect the gateway and the computer.

> **NOTE**
> For Modbus TCP, KNX, BACnet IP, and Home Automation, you can use an Ethernet cable instead (not included).

- 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 section on the Intesis webpage: https://www.intesis.com/products/intesis-maps
2. Fill out the form.
3. Check the consent box (**I hereby give consent for HMS to process my data**).
4. Click the **DOWNLOAD MAPS** 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 **Getting started** 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 in the **Order Code** field.

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

   - Looking for it on the list.

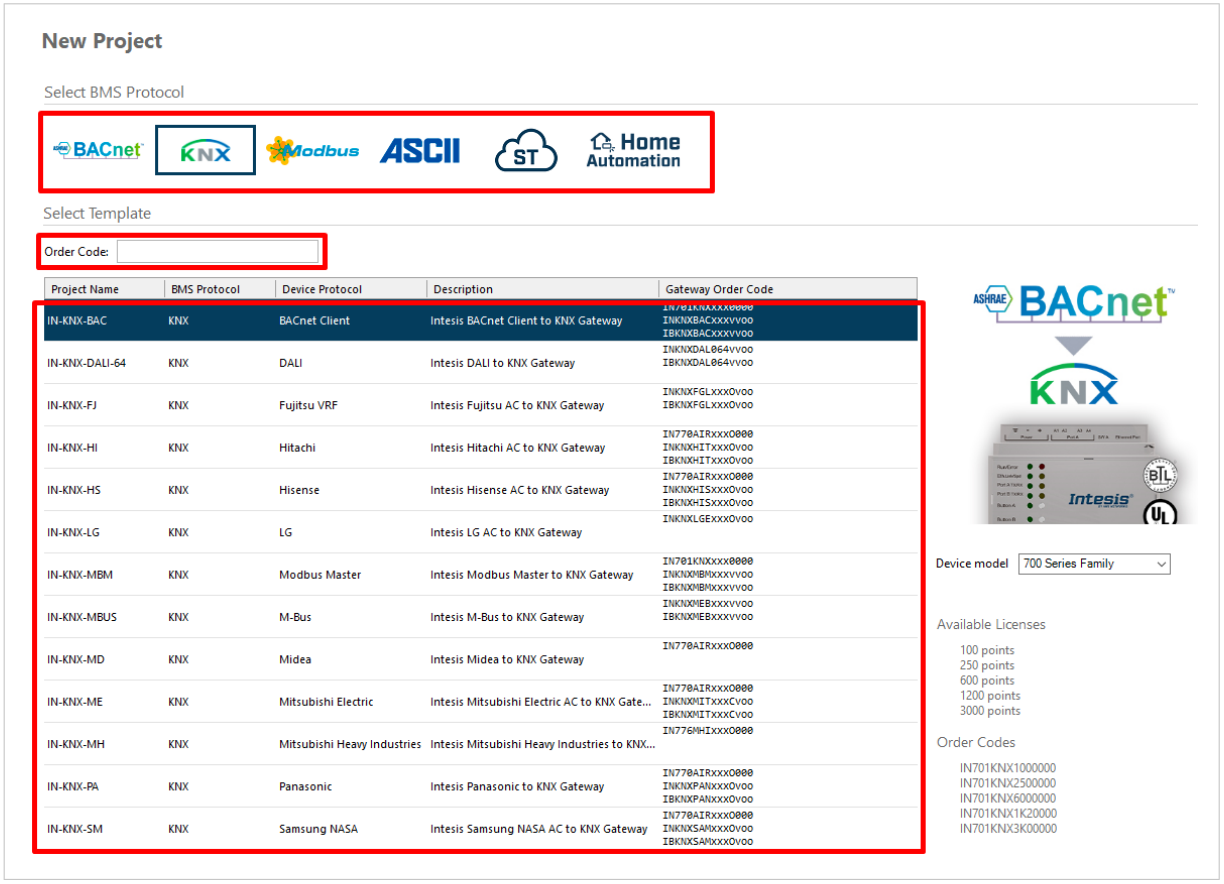


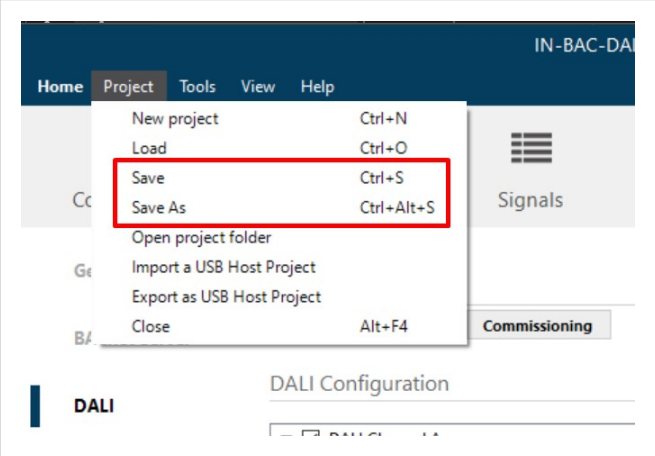
Figure 1. Three possibilities for the template selection

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

> **NOTE**
> Templates are just examples of integration. Depending on the type of integration, you may have to modify some parameters.

IMPORTANT

Don't forget to save your project on your computer before exiting Intesis MAPS. To do so, go to **Project** → **Save** or **Save As**. Later on, you can load the project to Intesis MAPS and continue with the configuration.



5. Main Menu Overview

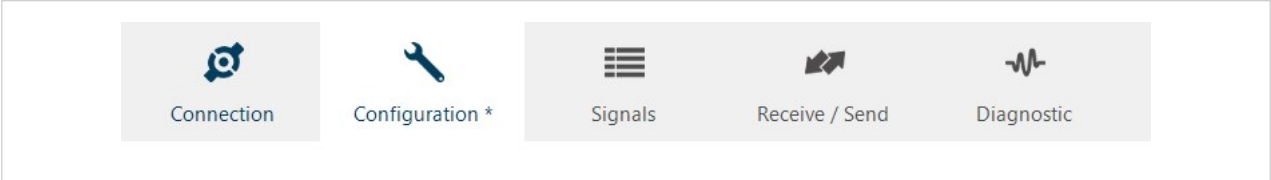


Figure 2. Intesis MAPS main menu

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

5.1. Configuration Tab

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

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

5.1.1. General

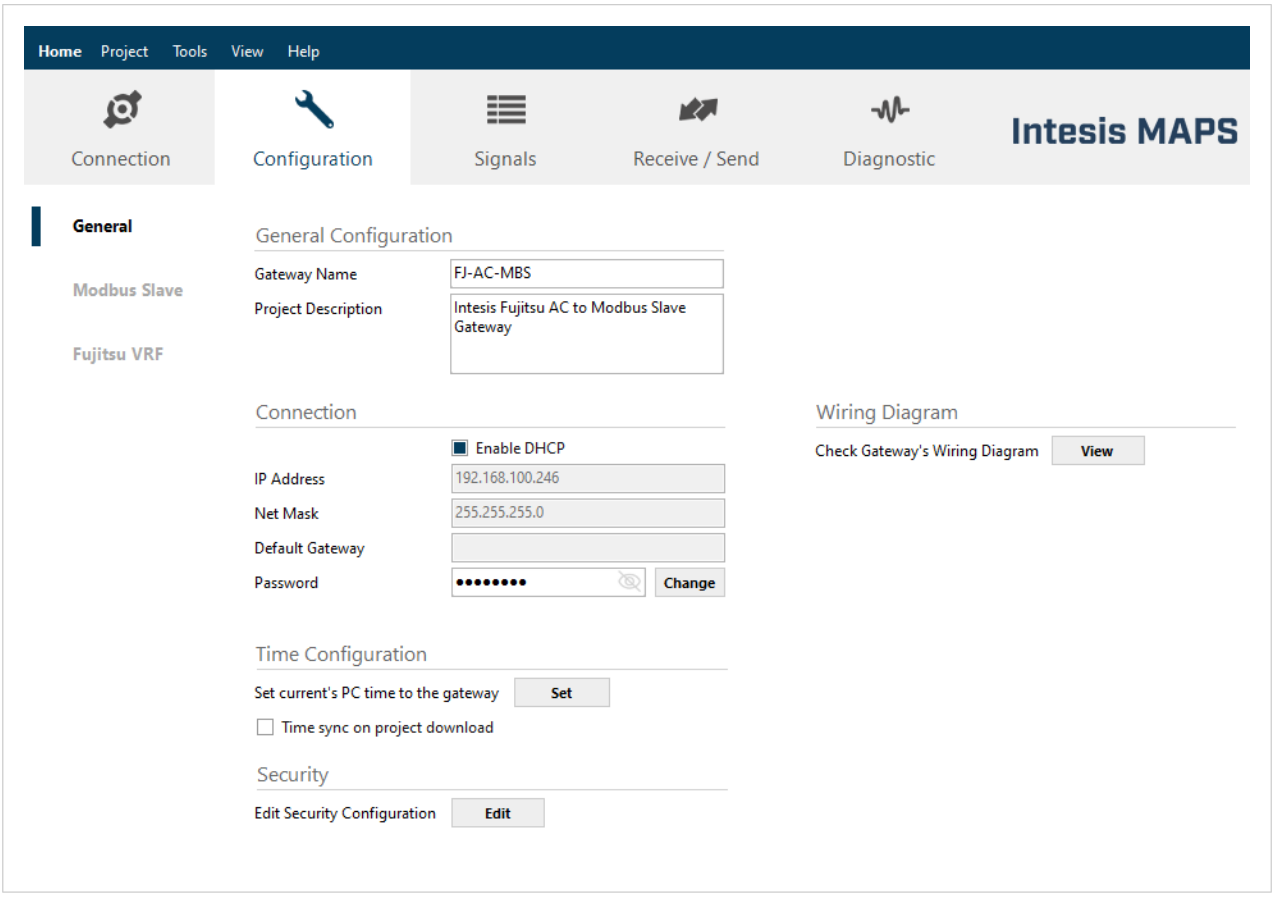
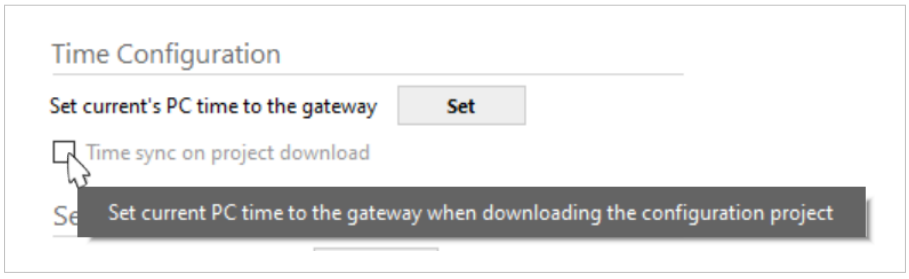


Figure 3. General configuration menu on the Configuration tab

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

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



5.1.1.1. General Configuration

- **Gateway Name**: Type a descriptive name for your gateway.
- **Project Description**: Type a short description of your project.

5.1.1.2. Connection

> **NOTE**
> When commissioning the gateway for the first time, DHCP will be enabled for 30 seconds. During that time, if there is a DHCP server, an IP address will be automatically assigned to the gateway. If there is no DHCP, you can type an IP address of your choice. 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 sheet.

- **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**: Set the default route assigned to the gateway.

    > **NOTE**
    > The **Default Gateway** parameter is optional, but you must define the gateway route when a connection to the internet or to other networks is needed.

- **Password**: Click the **Change** button and follow the instructions to set a password for the gateway.

5.1.1.3. 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 clock 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.

5.1.1.4. Security

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

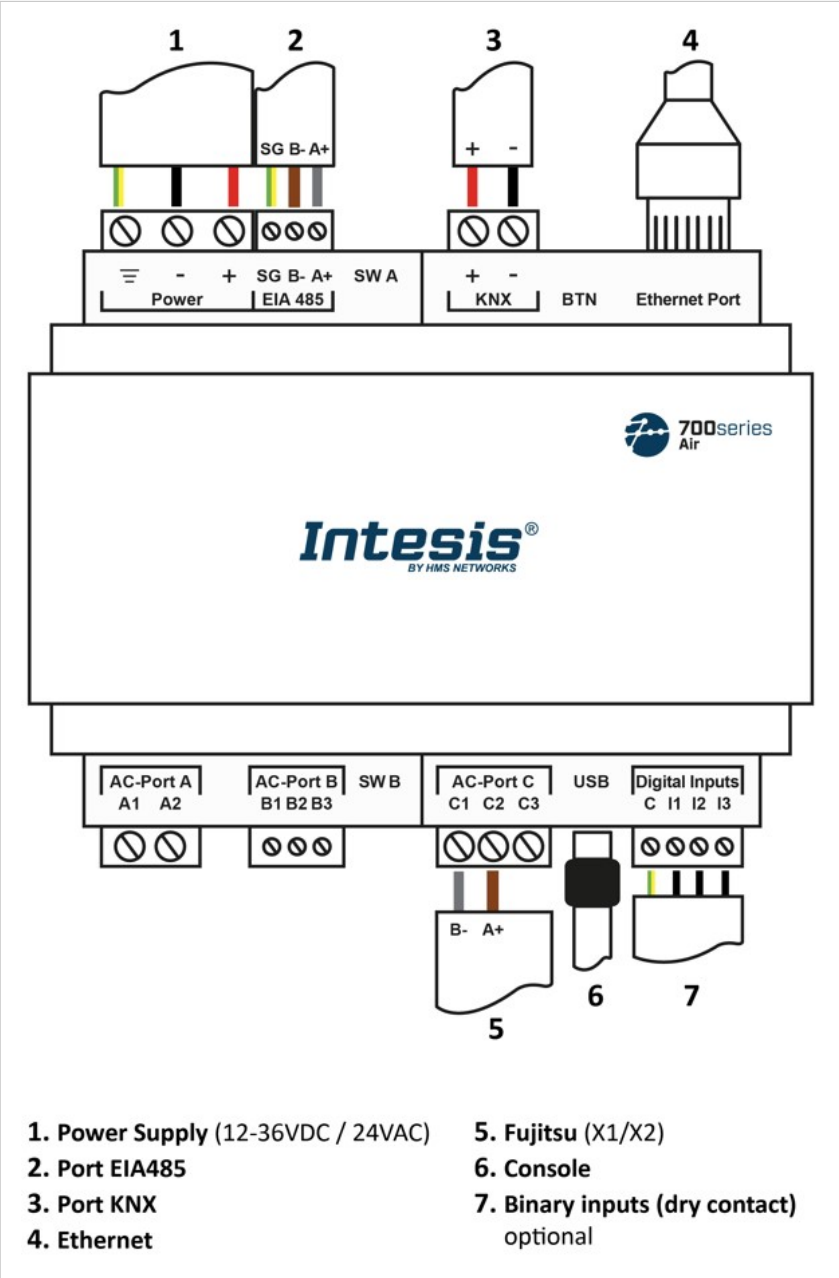
  > **IMPORTANT**
  > We recommend keeping the predetermined configuration.

  - **Disable UPD 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.

5.1.1.5. Wiring Diagram

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



5.1.2. BMS Protocol

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

- Modbus (page 20)
- KNX (page 21)
- BACnet (page 23)
- Home Automation (page 33)

5.1.3. Fujitsu Protocol (Device Protocol)

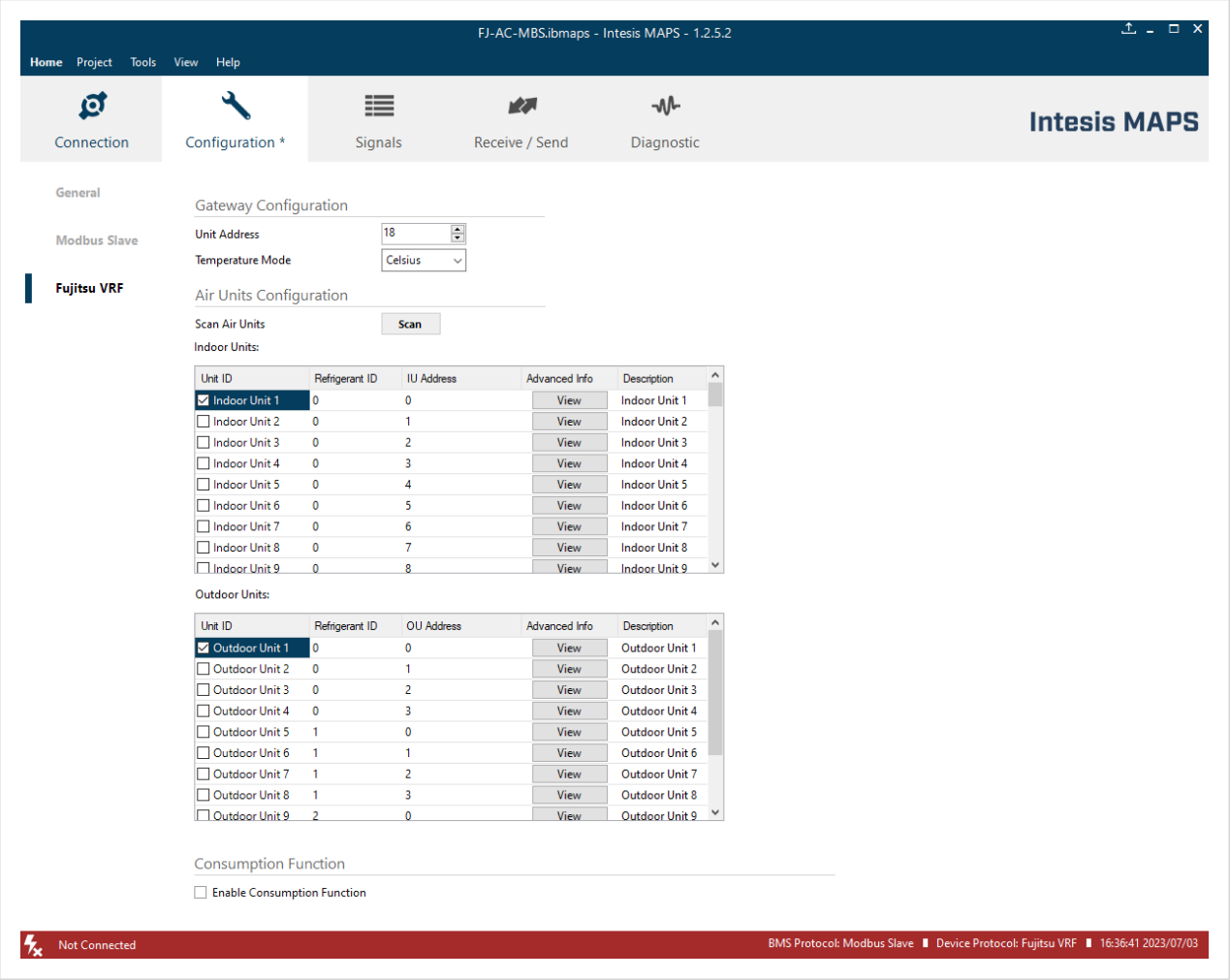


Figure 4. Fujitsu protocol parameters inside the Configuration tab

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

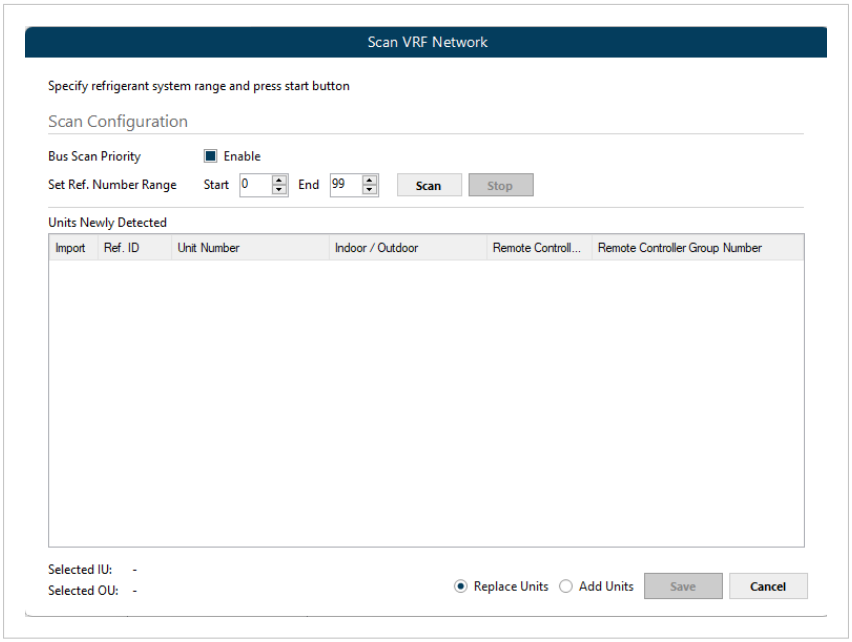
5.1.3.1. Gateway Configuration

- **Unit Address**: Select the source number for the gateway (3 to 18).
- **Temperature Mode**: Choose between Celsius and Fahrenheit degrees.

5.1.3.2. Air Units Configuration

- **Scan Air Units**:

1. Click **Scan**.



2. **Bus Scan Priority**: **Enable** this function (default value) to prioritize the bus scanning.
3. **Set Ref. Number Range**: Set the first refrigerant line (**Start**) and the last refrigerant line (**End**) to scan (0 to 99).
4. Click **Scan** to start the bus scanning.
5. 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 units you have now selected to replace the previously listed units.
   – Check the **Add Units** option if you want to add the units you have now selected to the previously listed units.
6. Click **Apply** to replace/add the discovered units you have selected.

- **Indoor Units**:
  1. Select the indoor units you want to integrate into your project.
  2. You can type a **Refrigerant ID**, **IU Address**, and **Description** for each indoor unit.
  3. Click the **View** button to see advanced information about each indoor unit.

- **Outdoor Units**:
  1. Select the outdoor units you want to integrate into your project.
  2. You can type a **Refrigerant ID**, **IU Address**, and **Description** for each outdoor unit.
  3. Click the **View** button to see advanced information about each outdoor unit.

5.1.3.3. Consumption Function

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

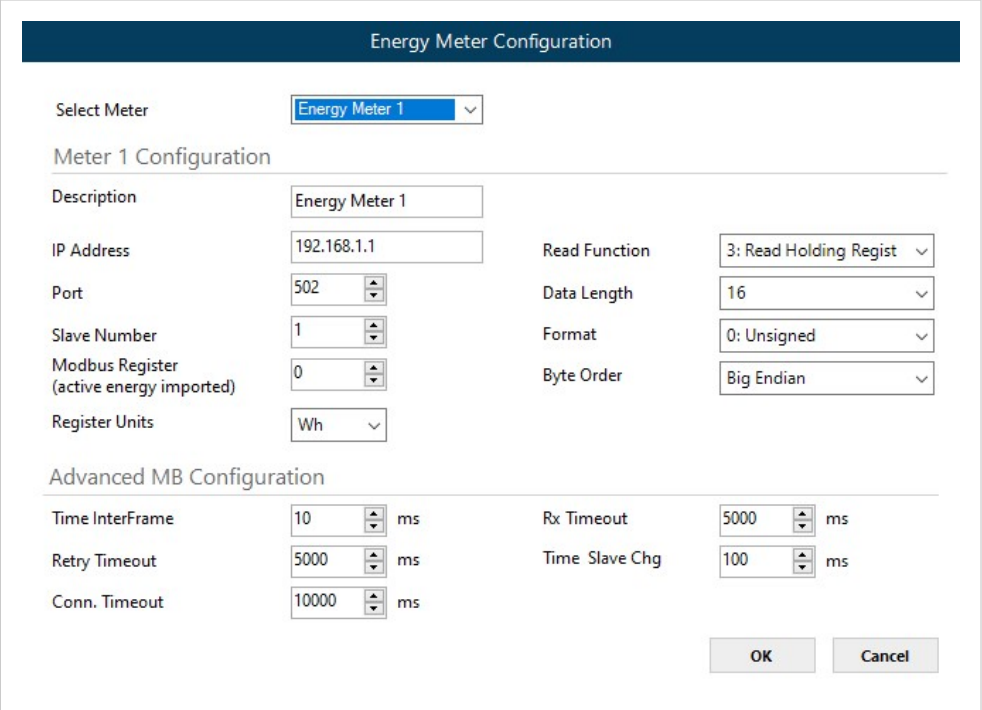
IMPORTANT
Before using this function, ensure the AC system and the pulse/Modbus energy meters are already installed, wired, configured, and properly working.

- **Enable Consumption Function**: Click the checkbox to enable this parameter.
- **Select Energy Meters Input Mode:** Choose between **Modbus TCP Energy Meters** and **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**.



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

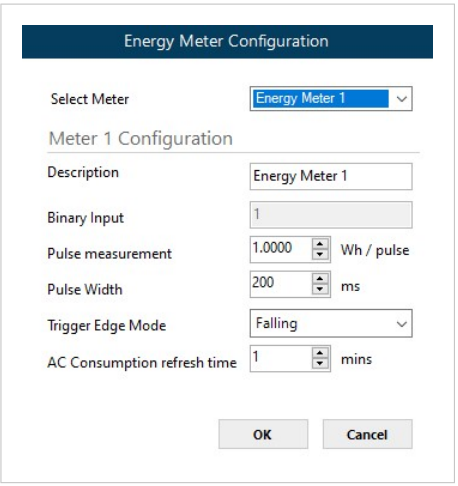
> **NOTE**
> Up to three energy meters are available.

- **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** parameter 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 to which gateway's digital input the meter will connect.
    - **Pulse Measurement**: Set the equivalence between pulses and energy.

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

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

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

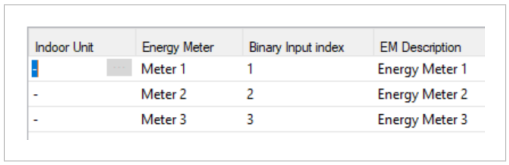
    - **Trigger Edge Mode**: Choose between **Falling** or **Raising** mode.
    - **AC Consumption Refresh Time**: It defines the time to refresh the consumption values for this energy meter.

- **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

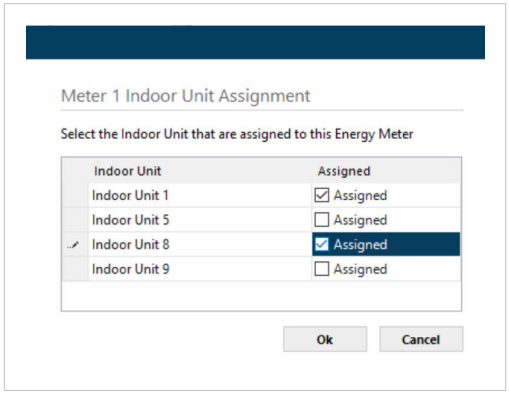
- Consumption Total Heat
- Consumption Yesterday Cool
- Consumption Today Cool
- Consumption Total Cool

- **Energy Metering Units**: Choose between **Wh** or **KWh**.
- **Assignation table**. Use this table to assign the previously selected **Indoor Units** to each **Energy Meter**.

1. Click the grey square of the **Indoor Unit** column.



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



3. Click the **OK** button.

5.2. Connection Tab

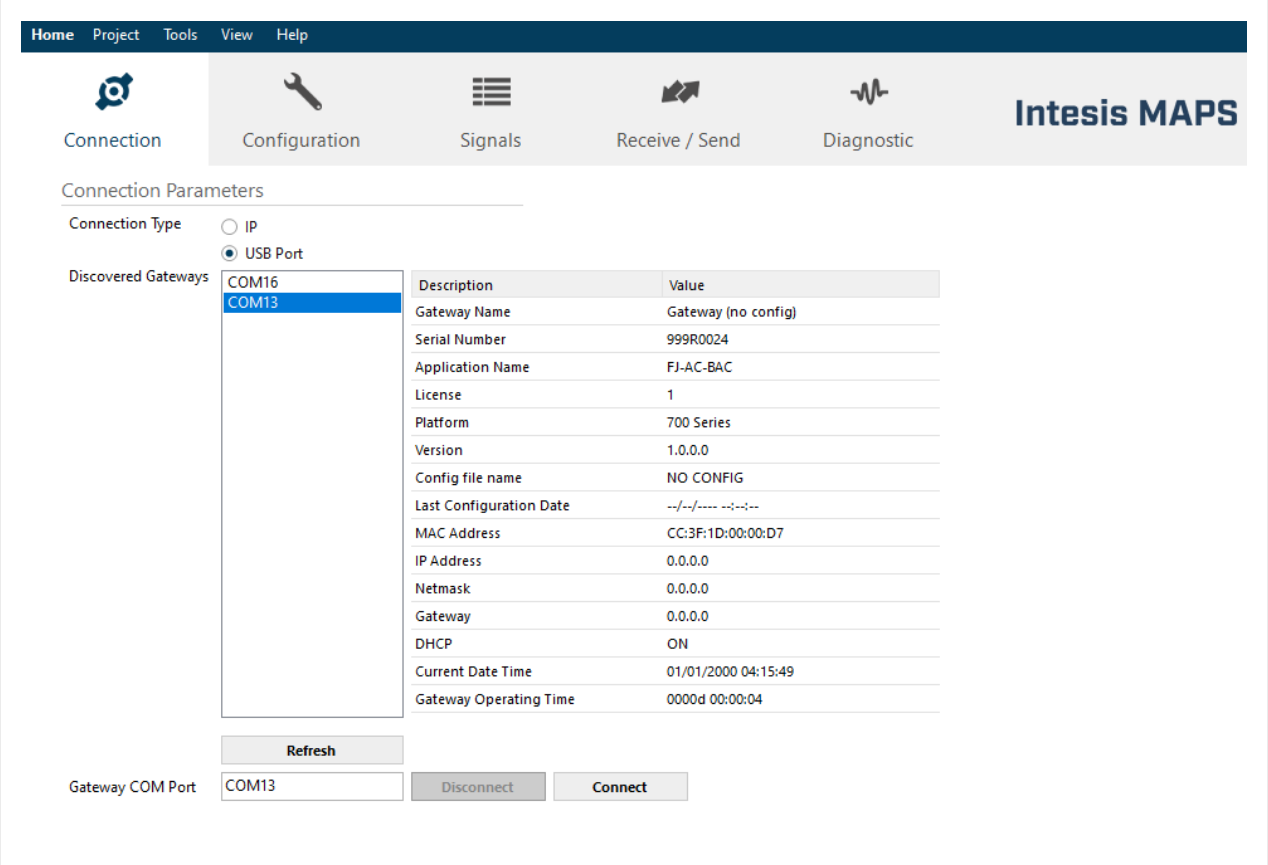


Figure 5. Connection tab window

1. 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 Intesis 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.

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

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

5.3. Signals Tab

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

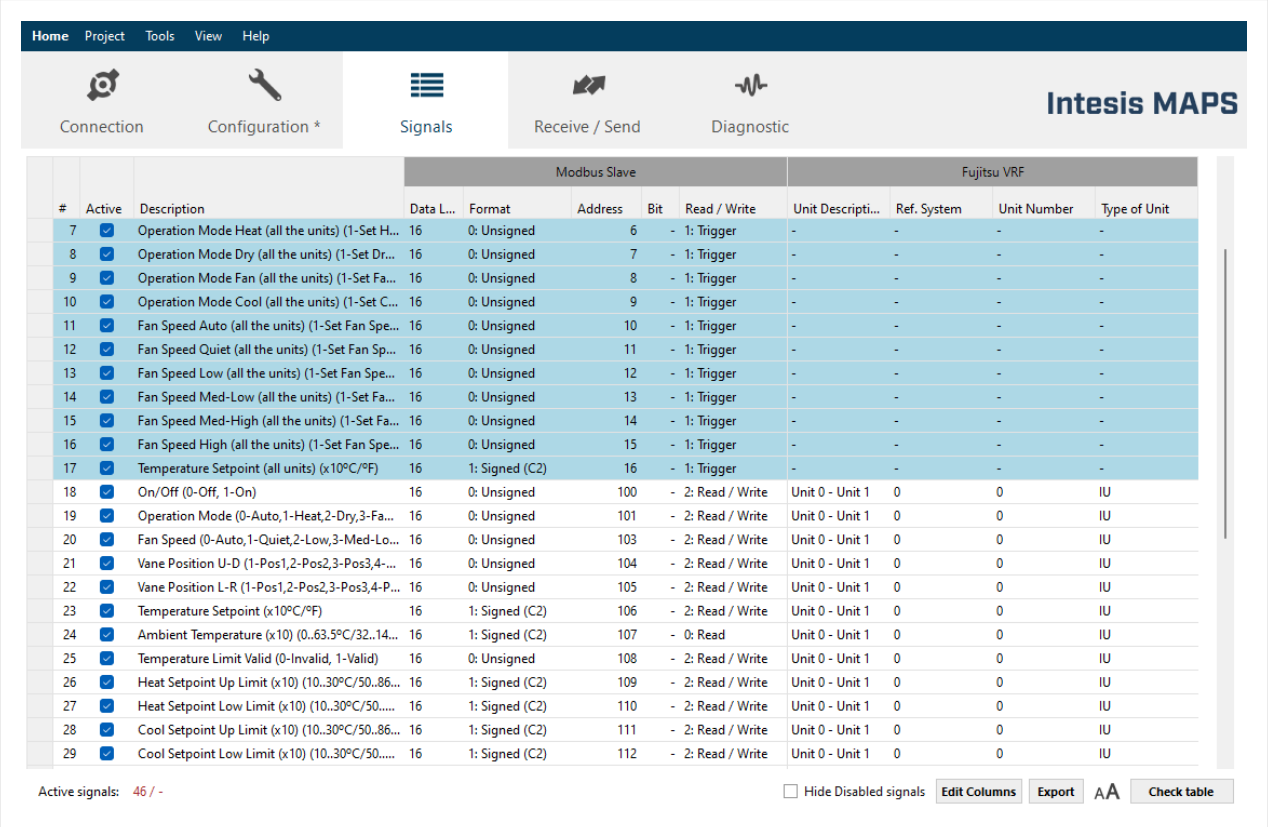


Figure 6. Signals tab for the Modbus server application

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:

- **Active signals**: Number of active 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.
- **Export**: Click this button to export the current signals' configuration to an xls file.
- **$_{A}$A**: Increases or decreases the font size.
- Click the **Check table** button to review the signals' configuration.

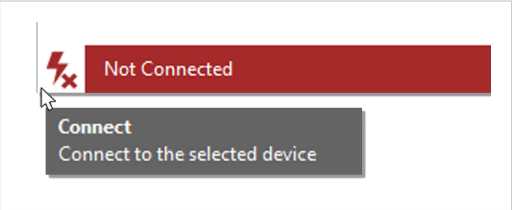
> **NOTE**
> If any parameter on any signal is wrong, a message will pop up with specific information about the error.

5.4. 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:

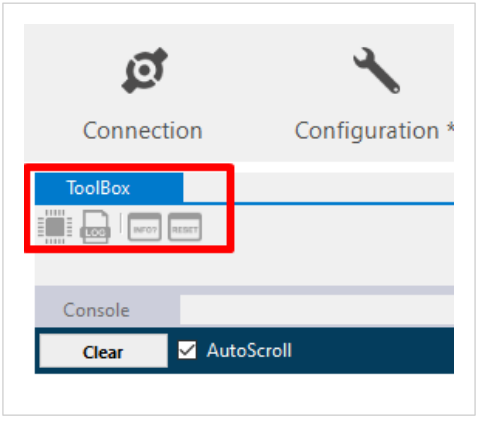
Use this function to get the configuration of a gateway, for example, when you need to change some parameters of a gateway already mounted in an installation.

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.

5.5. Diagnostic Tab

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

ToolBox:



Use the tools section to:

- **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.

6. BMS Protocols Available

The Intesis IN775FGL00xO000 gateway supports Modbus TCP and RTU, KNX, BACnet/IP and MS/TP, and Home Automation. The following sections provide the most relevant information for each one.

6.1. Modbus

6.1.1. Modbus Configuration Tab

6.1.1.1. 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.
  - **V4 compatibility**: Only Modbus addresses compatible with V4 gateways[1] are active. Addresses cannot be modified.

6.1.1.2. 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.

> **NOTE**
> Default values are **8bit/None/1**

Data bits	Parity	Stop bits
8bit	None/Even/Odd	1, 2

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

6.1.1.3. 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).

[1] V4 refers to old models of gateways.

NOTE
The default port is 502.

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

NOTE
Set the parameter to 0 to disable this function.

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

6.2. KNX

6.2.1. KNX Configuration Tab

6.2.1.1. 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). The gateway supports (P/S) and (P/I/S) format levels.
- **Extended Addresses**: Select it to extend the range of available KNX group addresses from the standard 15/7/255 to 31/7/255.

6.2.1.2. 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**: Datapoints 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-standarized): 0-Auto, 1-Heat, 2-Dry, 3-Fan, 4-Cool.
  - **Extra DPT:** You can enable these additional datapoints:
    - 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.

6.2.1.3. Temperature Sensor

- **Ambient temperature provided from KNX**: Enables the object **Control_KNX ambient temperature**, which allows a temperature reference from KNX to regulate the indoor unit operating temperature.

IMPORTANT

When enabling this function, the gateway uses a formula to establish which temperature should send to the indoor unit. Consequently, the indoor unit and the KNX temperature setpoints may differ, and the user won't be able to use any external device, such as a remote controller, to set the AC indoor unit temperature.

The formula applied is:

AC Setp. Temp = AC Ret. Temp - (KNX Amb. Temp. - KNX Setp. Temp)

Where:

- AC Setp. Temp: AC indoor unit setpoint temperature.
- AC Ret. Temp: AC indoor unit return temperature.
- KNX Amb. Temp.: Ambient temperature provided from KNX.
- KNX Setp. Temp: Setpoint temperature provided from KNX.

6.2.1.4. Fan Speed

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

- **Auto Fan Speed**: It enables the Fan Speed AUTO object.
- **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.

6.2.1.5. 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.

6.3. BACnet

6.3.1. BACnet Configuration Tab

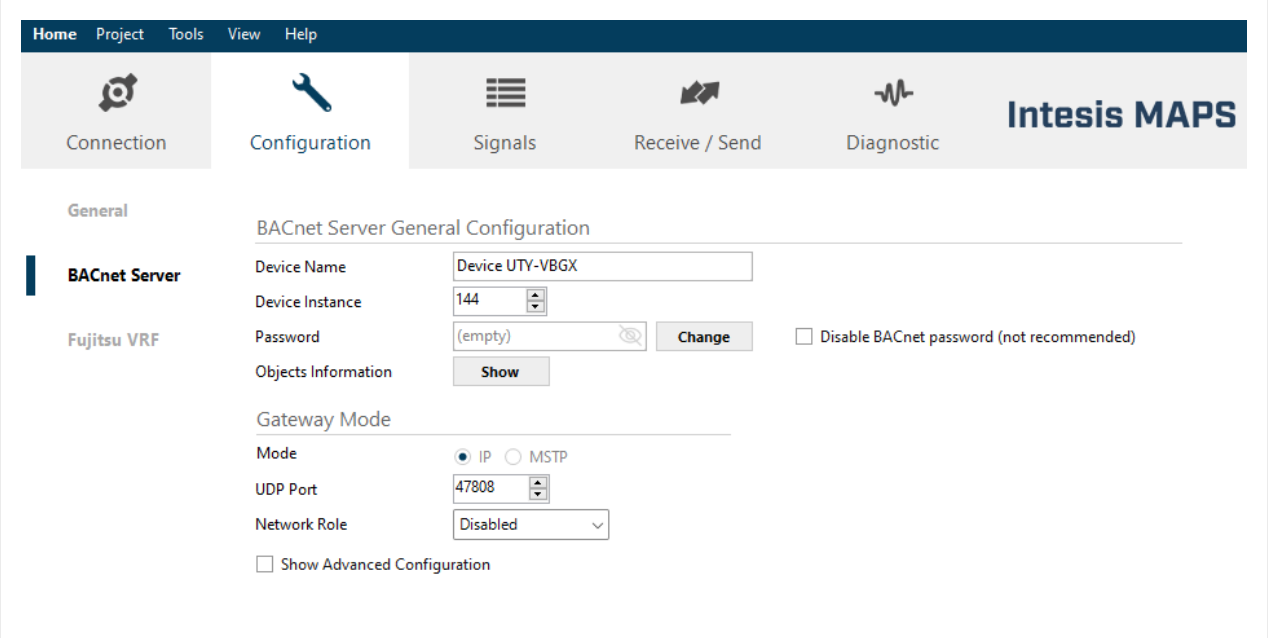


Figure 7. BACnet configuration parameters

6.3.1.1. 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.
- **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.

6.3.1.2. 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.

> **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.
  - **Baudrate**: Select the communication speed: Auto, 9600, 19200, 38400, 57600, 76800, or 115200 bps.

> **NOTE**
> The baudrate 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**).
  - **Edit MSTP Timeouts**: Click **Edit** to open the **MSTP Timeouts Configuration** window.
    - **PFM Timeout**: Set the polling for master timeout in milliseconds (20 .. 100 ms. Default value: **60 ms**).
    - **TP Timeout**: Set the token passing timeout in milliseconds (20 .. 100 ms. Default value: **60 ms**).

6.3.1.3. 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.

6.3.1.3.1. Notification Class

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

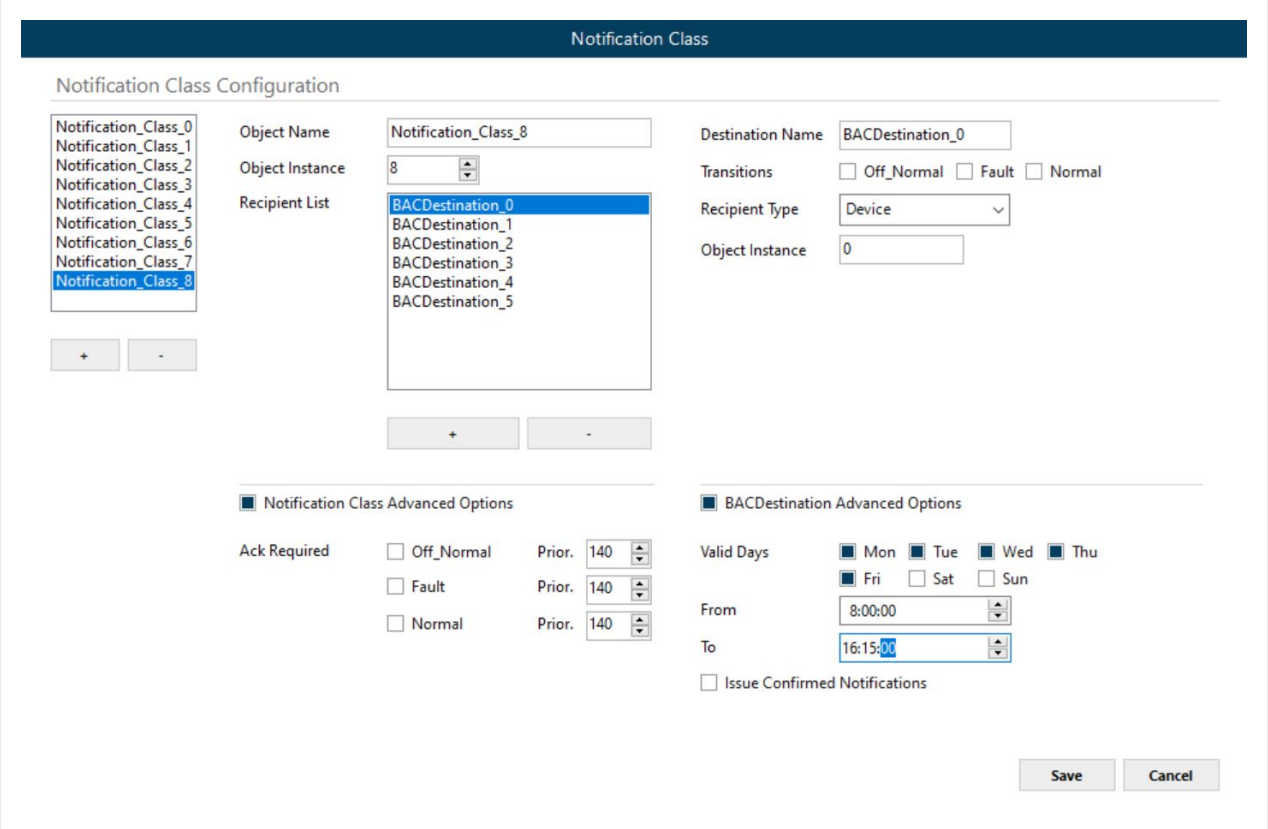


Figure 8. Notification Class Configuration window

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

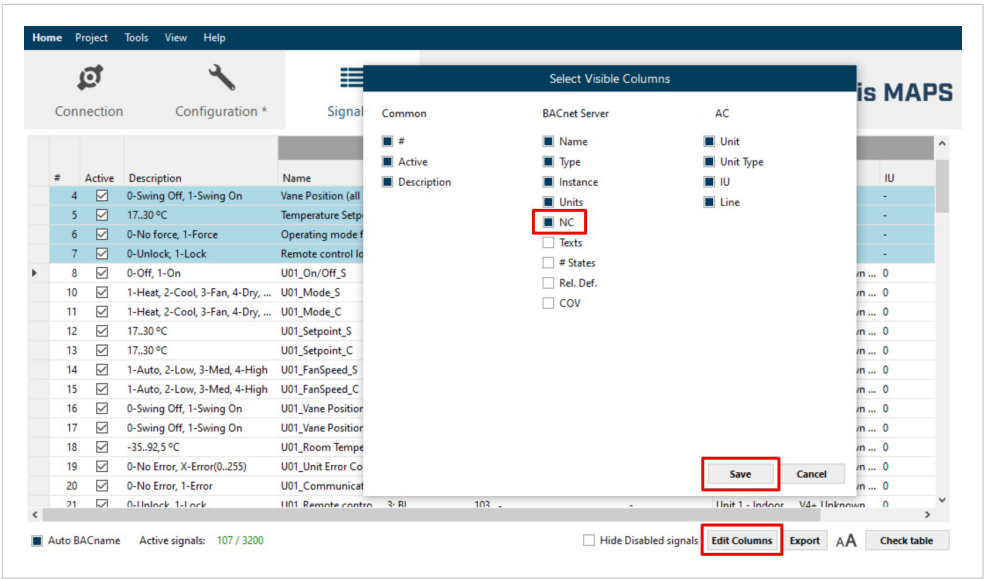
- **Object Name**: Type a name for the Notification_Class.
- **Object Instance**: Sets the BACnet object instance for the Notification_Class.
- **Recipient List**: Click the + button to create eight different BACnet destinations. For each one, you can set:
  - **Destination Name**: Type a descriptive 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. Select the device instance number for this device in the **Object Instance** text box.
    - **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**.
      - 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.

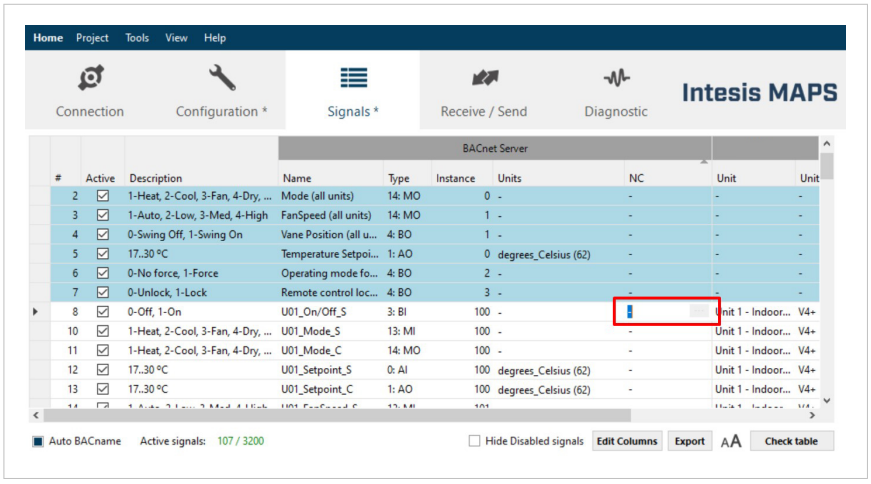
NOTE
Set the priority for each parameter (0 .. 255. Default value: **140**).

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

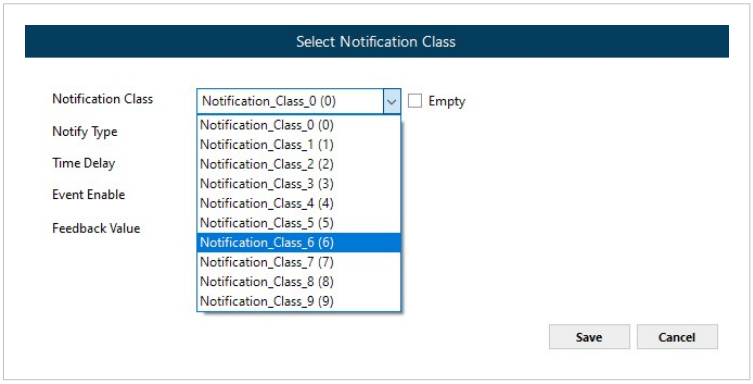


3. In the **Select Visible Columns** window, check **NC**.
4. Click **Save**.
   A new column named **NC** is now visible.
5. Look for the signal to which you want to assign the Notification_Class object and click the corresponding cell in the NC column.



6. Click the ... button.
7. In the **Select Notification Class** window, uncheck the **Empty** parameter.

8. Use the dropdown menu to select the Notification_Class object.



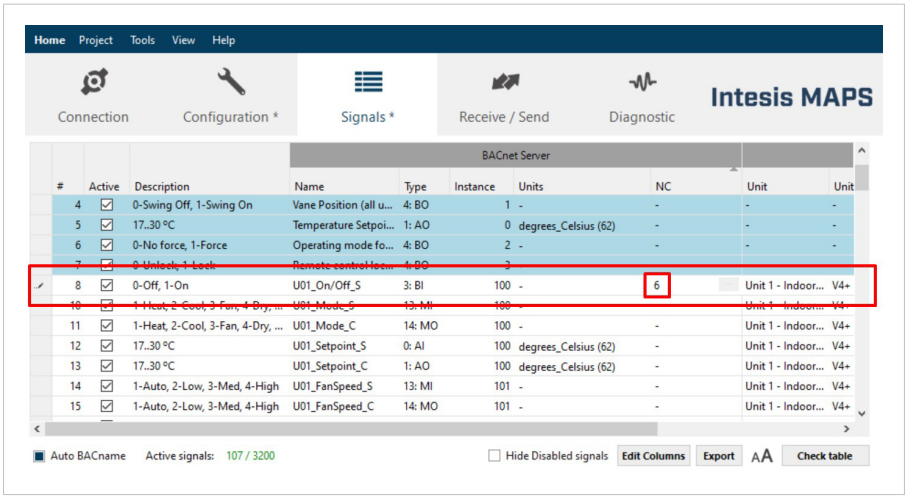
9. Set the rest of the parameters:

> **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.



6.3.1.3.2. Calendars

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

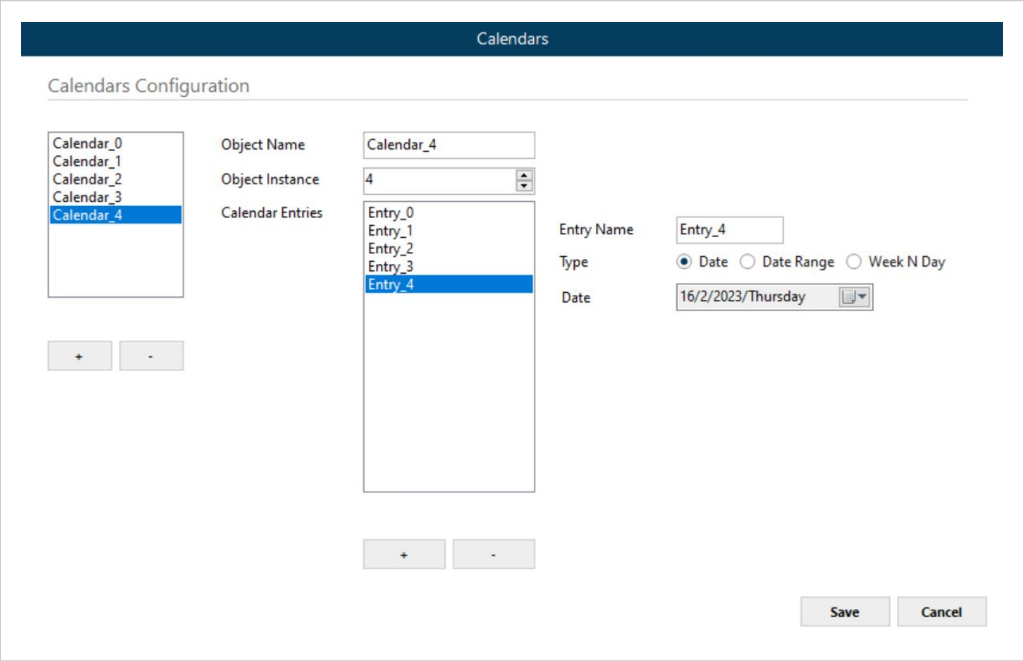


Figure 9. Calendars Configuration window

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.

6.3.1.3.3. Schedules

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

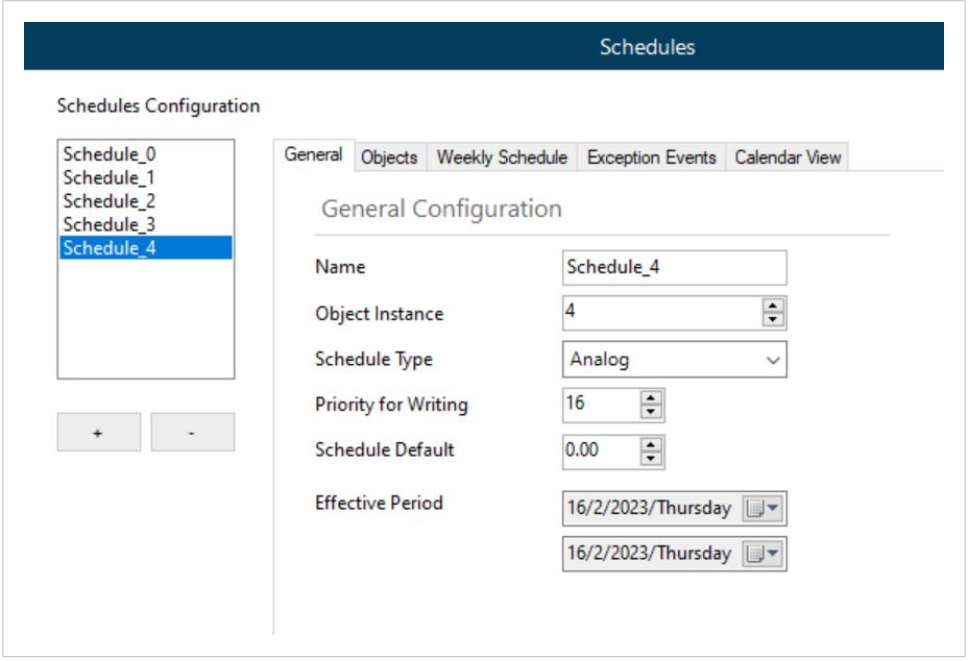


Figure 10. Schedules Configuration window

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.

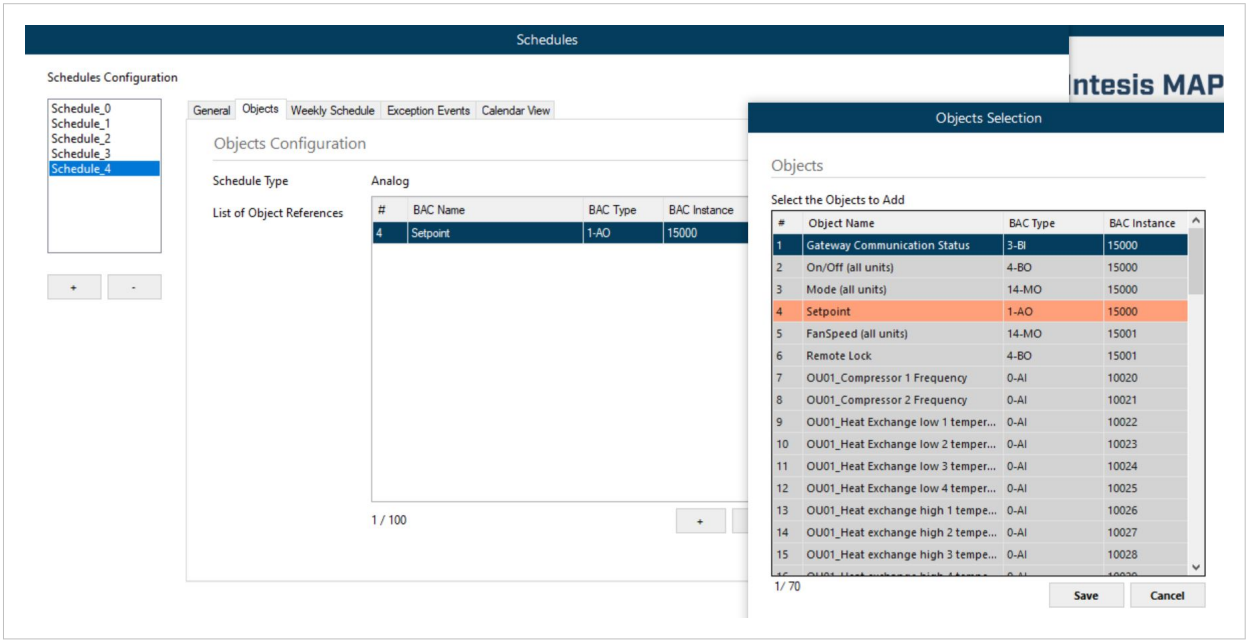


Figure 11. Objects Configuration window

- **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:**

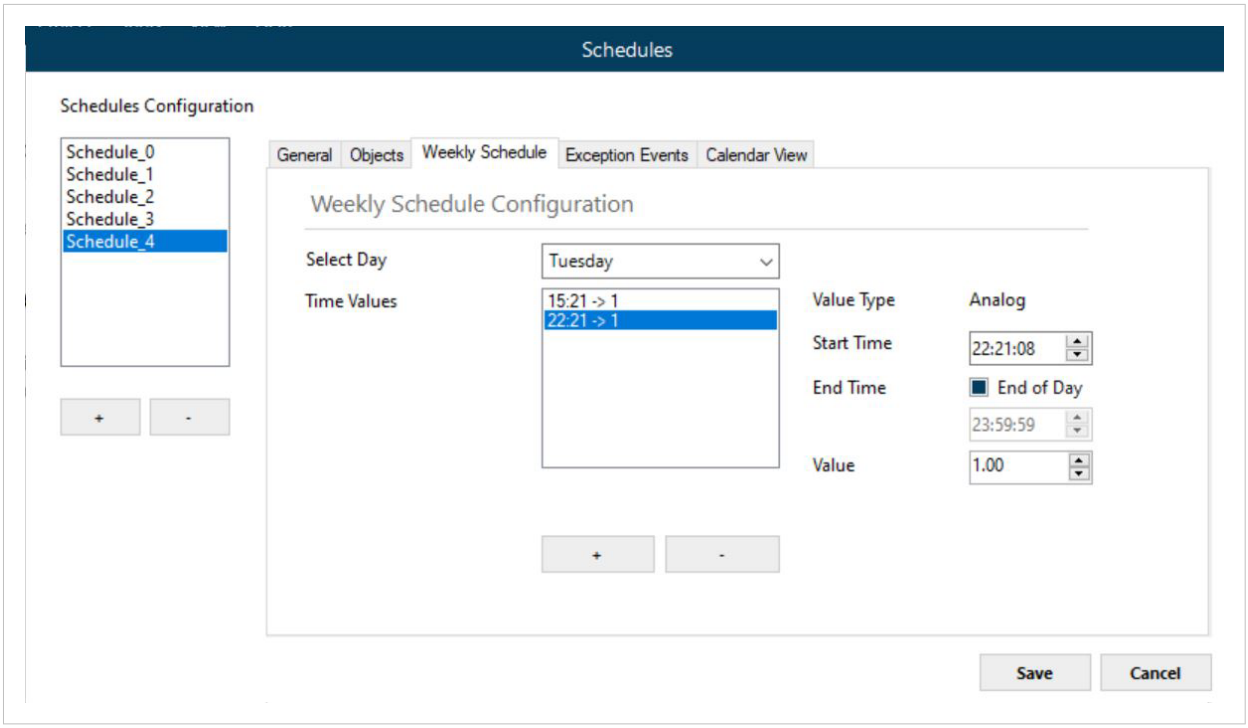


Figure 12. Weekly Schedule Configuration window

- **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.

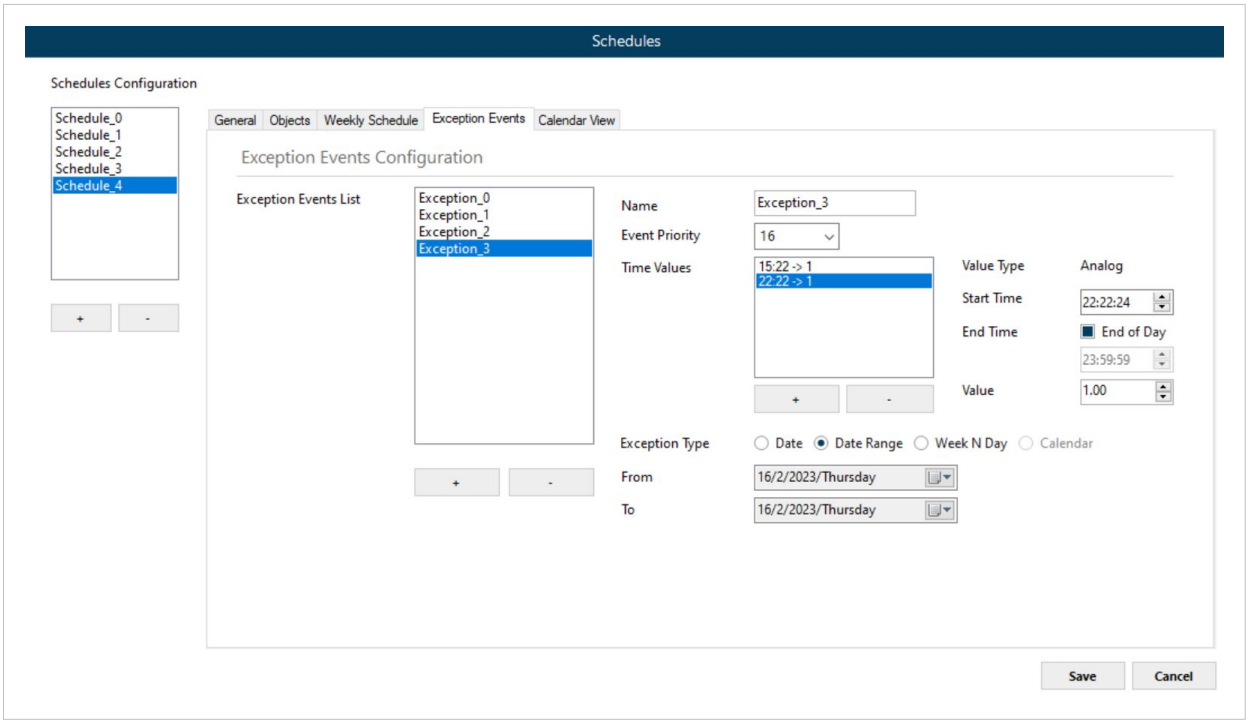


Figure 13. Exception Events Configuration window

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

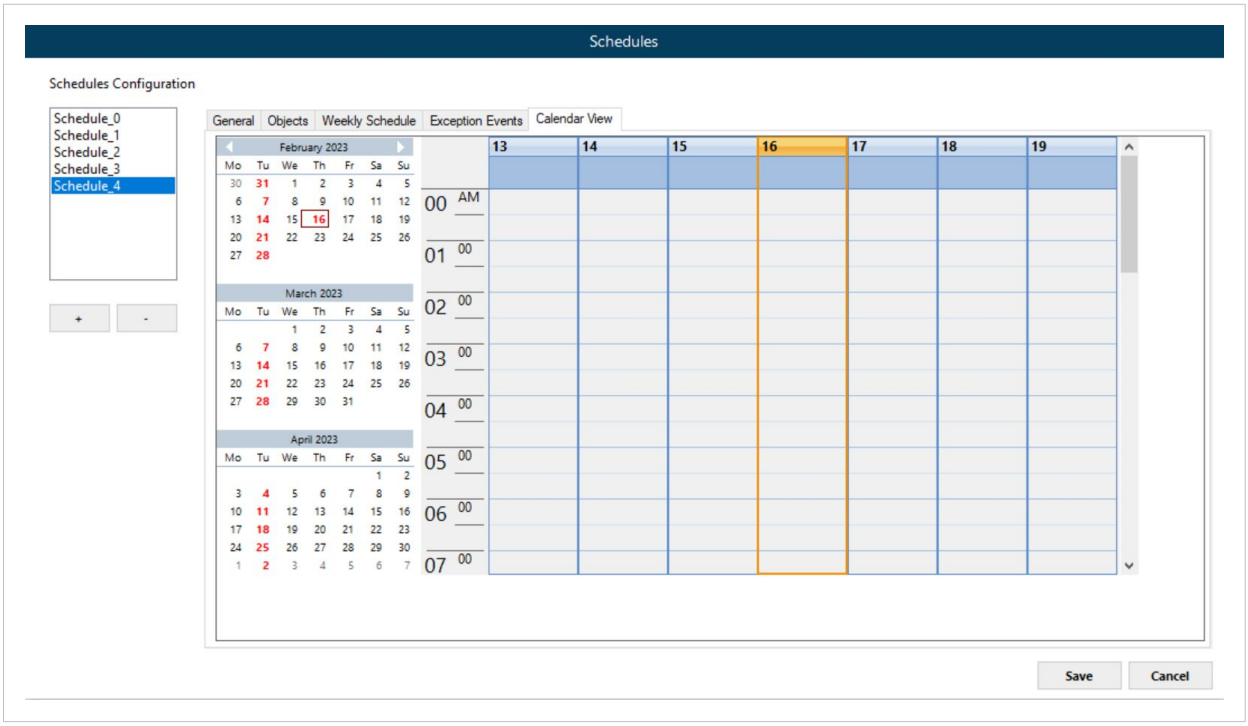


Figure 14. Calendar window

6.3.1.3.4. Trend Logs

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

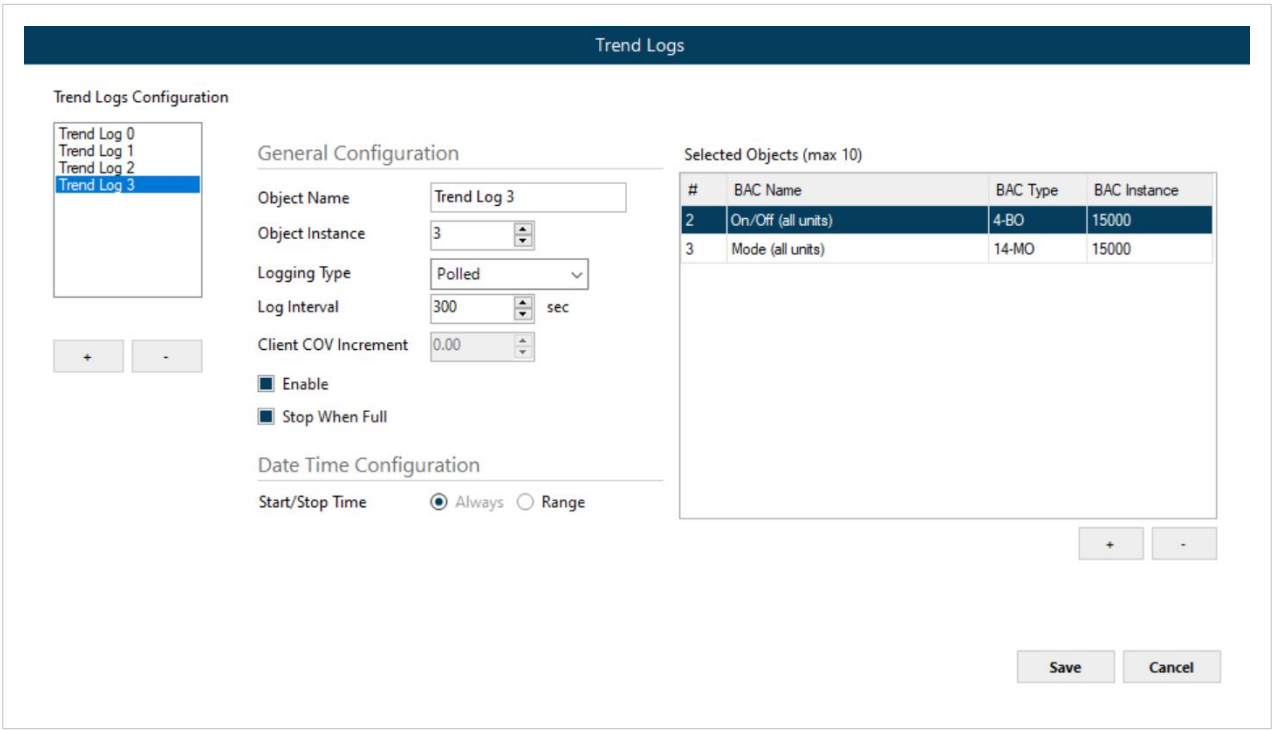


Figure 15. Trend Logs Configuration window

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.

6.4. Home Automation

6.4.1. Home Automation Configuration Tab

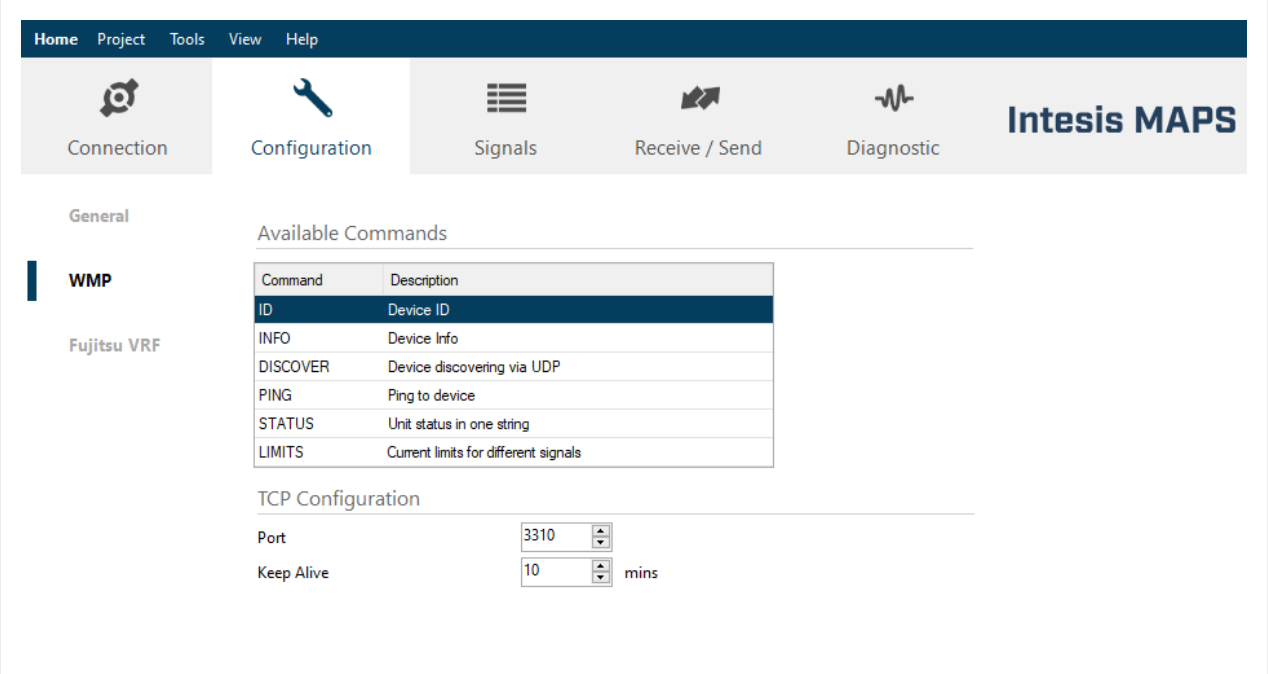


Figure 16. Home Automation configuration parameters

6.4.1.1. 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.

6.4.1.2. 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.

7. Late 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.