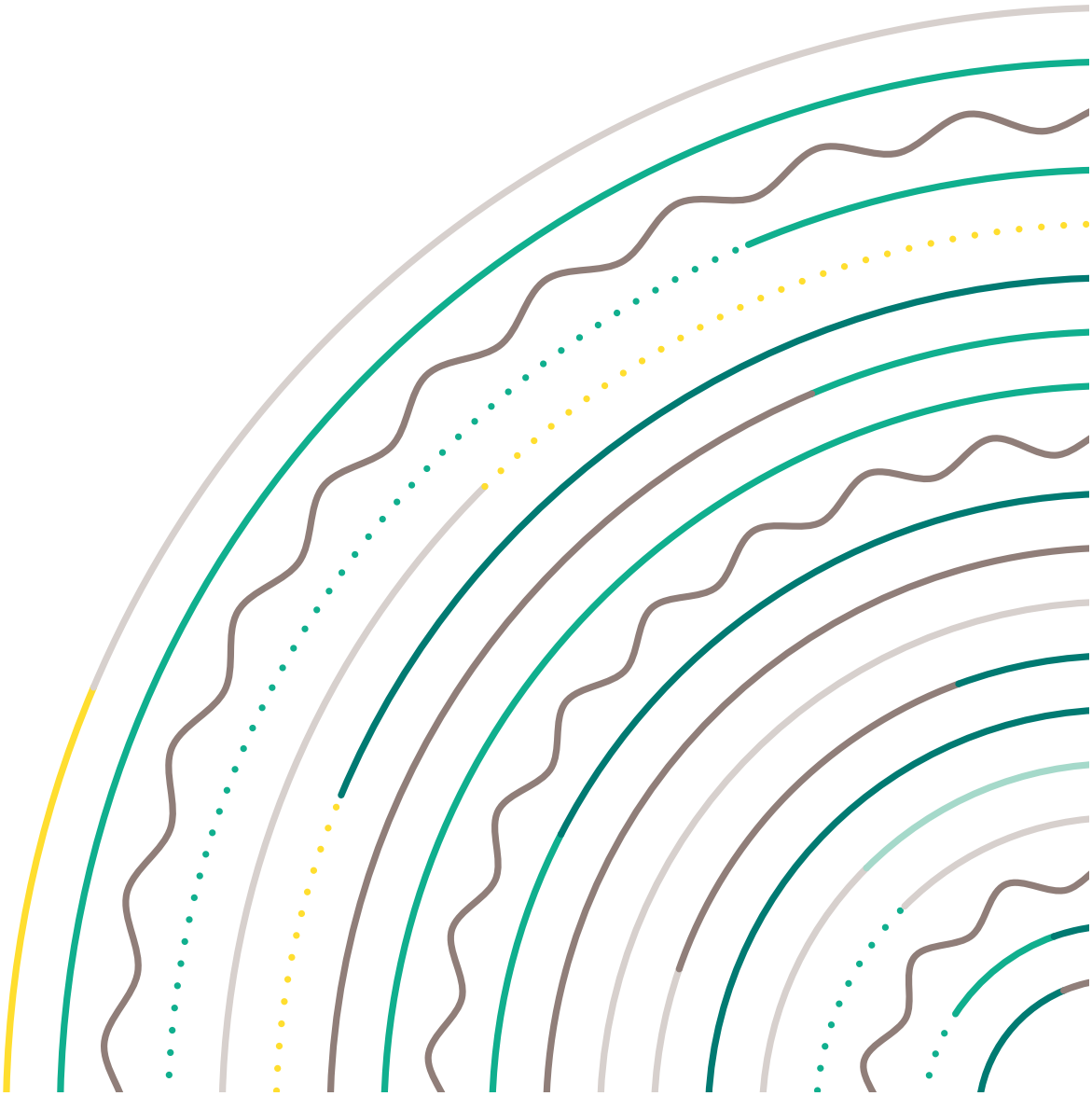
Lifedomus

Z-Wave

01/02/2018

Version 1.6



Z-Wave protocol

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1 Prerequisites

To fully understand this documentation, a few prerequisites are necessary:

- ✓ Addition, configuration and use of a connector in the 'Config Studio'.
- ✓ Basic knowledge of the Z-Wave protocol.
- ✓ Basic knowledge of the binary and hexadecimal system.

2 Z-Wave connector

For interfacing between Lifemodus and a Z-Wave device to be possible, a Z-Wave gateway must be used as a dongle connected to a USB port of the Lifemodus server.

The gateway must be the Z-Wave network's main controller (node 1).

2.1 Adding a Z-Wave connector

You can add a Z-Wave connector by clicking on the icon.

2.2 Configuring a Z-Wave connector

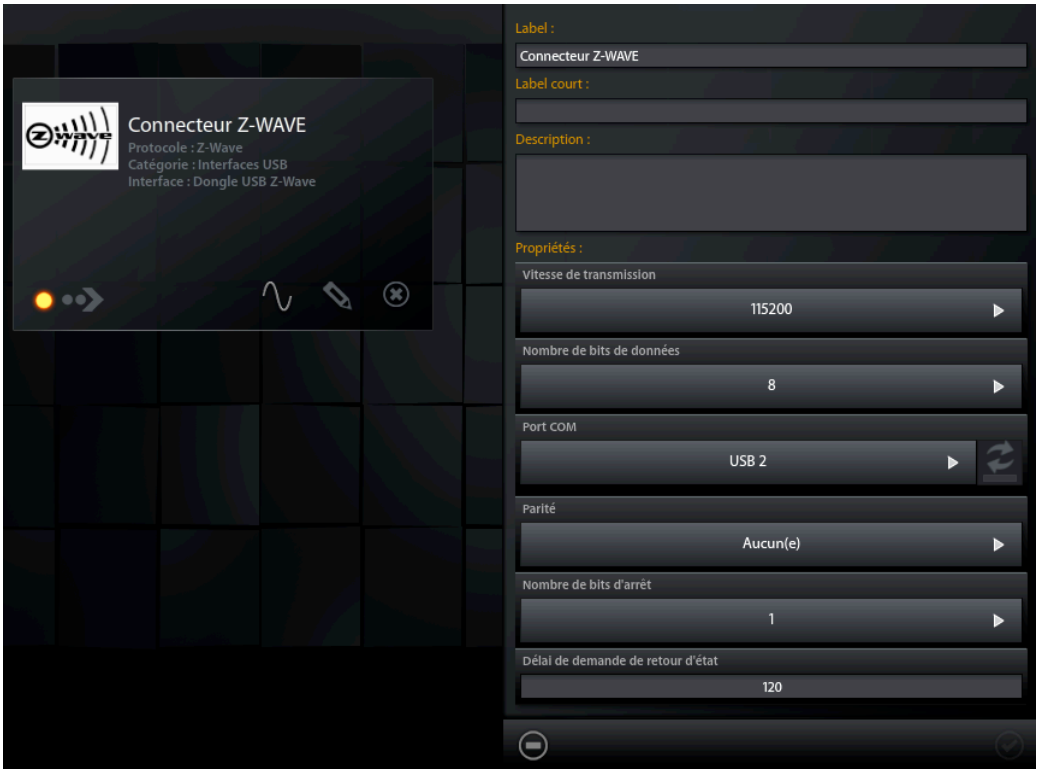
Clicking on the icon brings up the connector's configuration properties.

The configuration items of a Z-Wave connector are as follows:

- Transmission speed: 115200 by default.
- Number of data bits: 8 by default.
- COM port: use the icon to automatically recover the selected Com port.
- Parity: None by default.
- Number of stop bits: 1 by default.

- State feedback request time: Some modules cannot recover their state instantly. To update their state in *Design Studio,* you must send a request. The period corresponds to the interval (in seconds) between two state requests for the modules with active cyclic readout (refer to chapter 3.3 for the module properties). When this parameter is reset to 0, state requests are disabled.
  This readout is only used if the module returns no state (or partially), and if it can be controlled by other means than Lifemodus.

⚠ Important: To limit traffic on the Z-wave network and thus maintain stable communication with the modules, select a value according to the number of devices you are using.

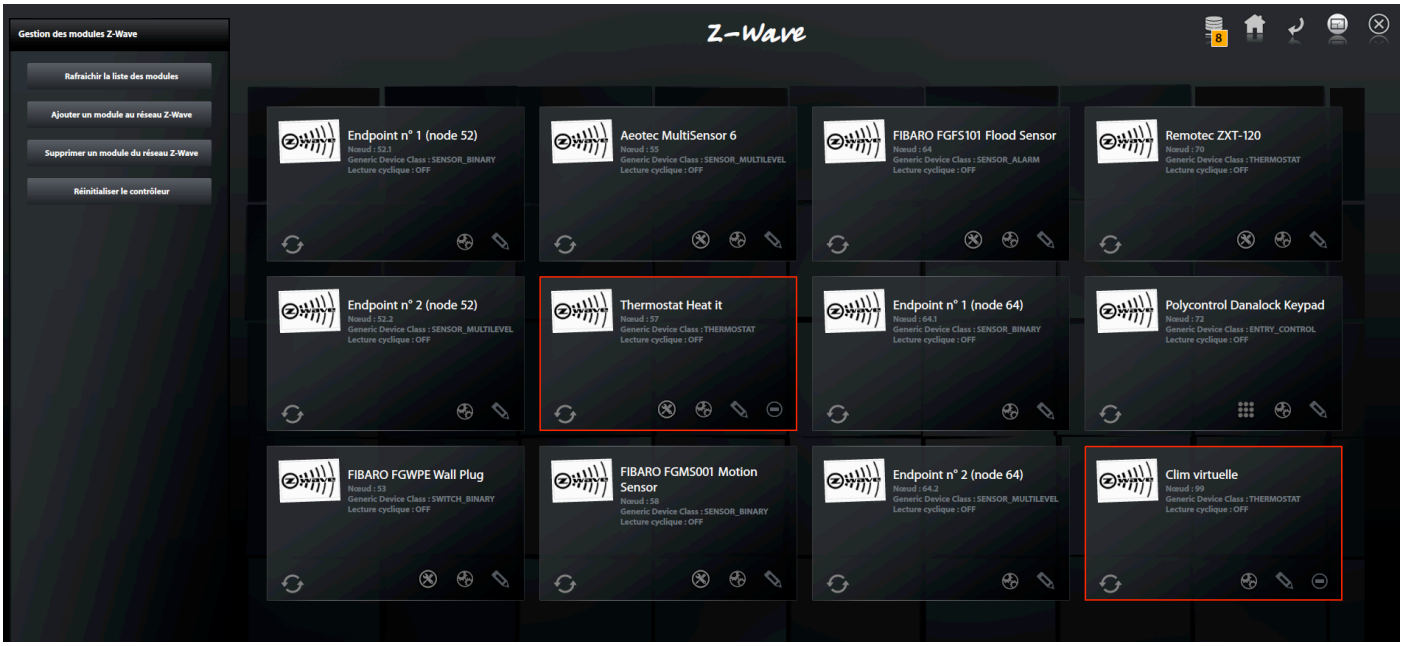


3 Z-Wave modules

3.1 'Modules' screen

A Z-Wave module is a node in Z-Wave terminology.

Clicking on the icon when your connector is on opens the Z-Wave module screen.



On the left hand menu, you will see three options:

- Refresh the list of modules:
  New detected modules appear in the wizard (see 3.2)
- Add a module to the Z-Wave network (see 3.2)
- Remove a module from the Z-Wave network:
  You can only remove one module at a time.
  This action sets the controller to '*exclusion*' mode.
  When you click on the button, a wait icon appears. You can start the module exclusion procedure.
  Refer to your device's documentation.
  When the exclusion procedure is complete, the list of modules is updated.

- Reset the USB dongle (this will remove all associated modules)

Each Z-Wave module is represented by a thumbnail.

When a module wakes up or if it sends information (NIF: Node Information Frame), the associated thumbnail has a yellow frame.

If a module is declared '*failed*', the associated thumbnail has a red frame.

The icon updates the module data ('*failed*' node, '*Command Class*' list, compatible devices, wake up value, etc.).

The icon opens a module device creation wizard.

The  icon opens the module configuration settings (if it is compatible with the CONFIGURATION command class)

The  icon configures the module (name, '*wake up*' value and associations groups).

The  icon opens the user code management pop-up window (if the module is compatible with the USER_CODE command class)

The  icon removes a module from the Z-wave network if it is declared as '*failed*'.

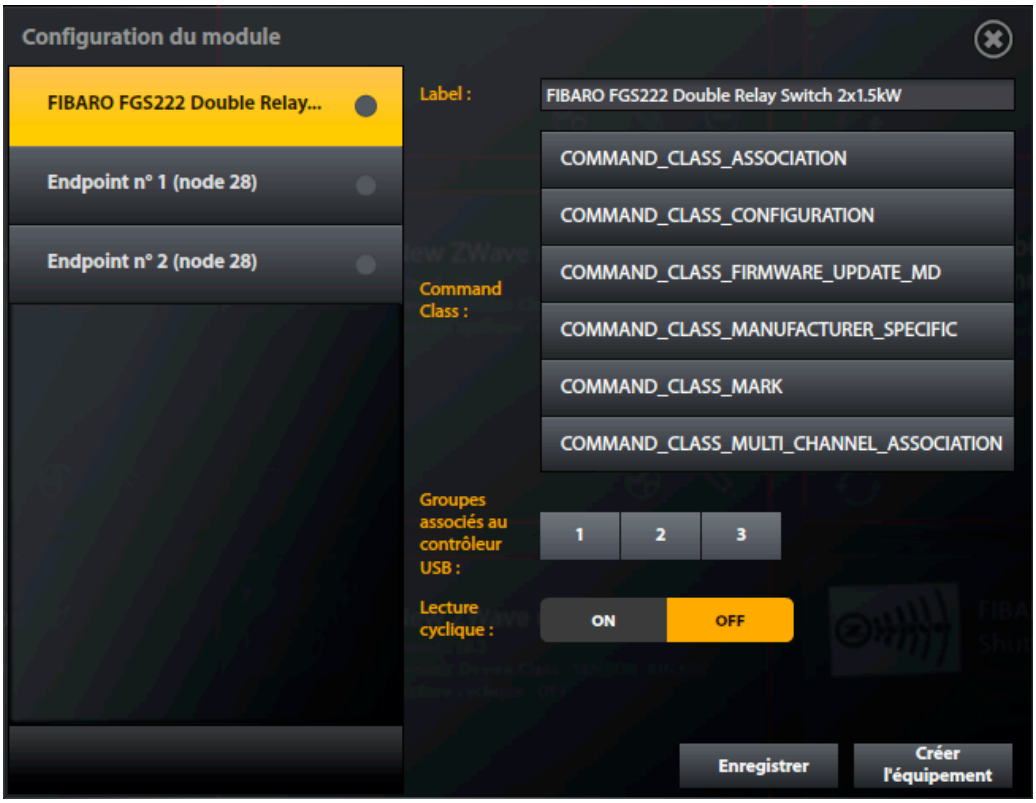
3.2 Module addition wizard

You can only add one module at a time.

This action sets the controller to '*inclusion*' mode.

When you click on the add module button, the module discovery pop-up window appears. You can then run the module's inclusion procedure. Refer to your device's documentation.

When the inclusion procedure is complete, the new modules appear. Some modules have several controllable zones called '*endpoint*', which will appear in the list of new modules if the device is compatible:



Select the module to configure. The screen displays the module's basic settings.

To receive the module's state feedbacks, you must associate the USB dongle with at least one of the module's groups (refer to the module documentation for associated groups).

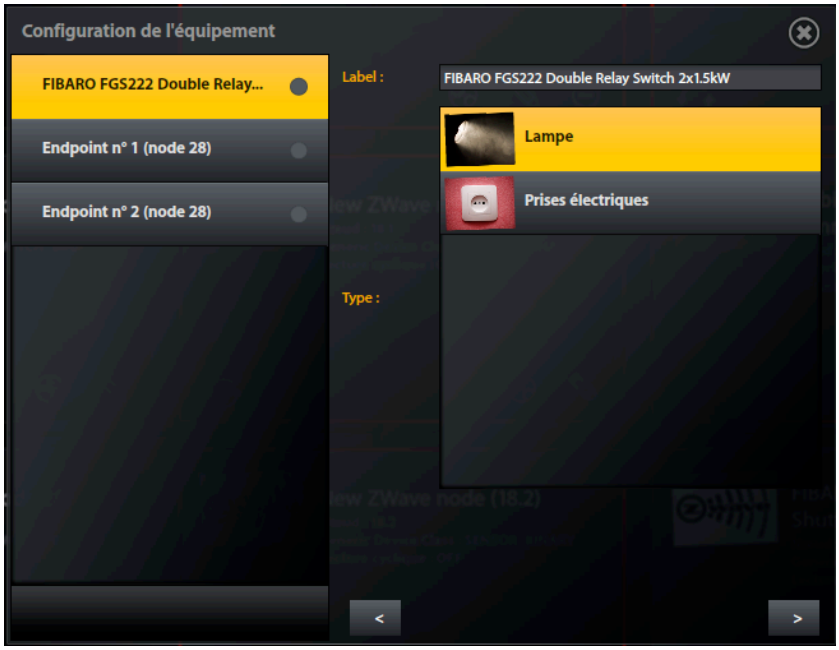
Cyclic readout has a dual application:

- When associated with the connector's 'State feedback request time' property, the module states will be queried at regular intervals.
- If it is enabled, the device property state will be read (e.g. temperature setting, light state, etc.) after each action run from Design Studio.

This property must only be activated when the module state cannot be received via an association group.

To extend the batteries' service life, some modules are not continuously in message listen mode. For these modules a '*wake up*' interval is required. The commands for these modules will only be sent when they are awake. However, the modules can be awoken manually (refer to the module's documentation).

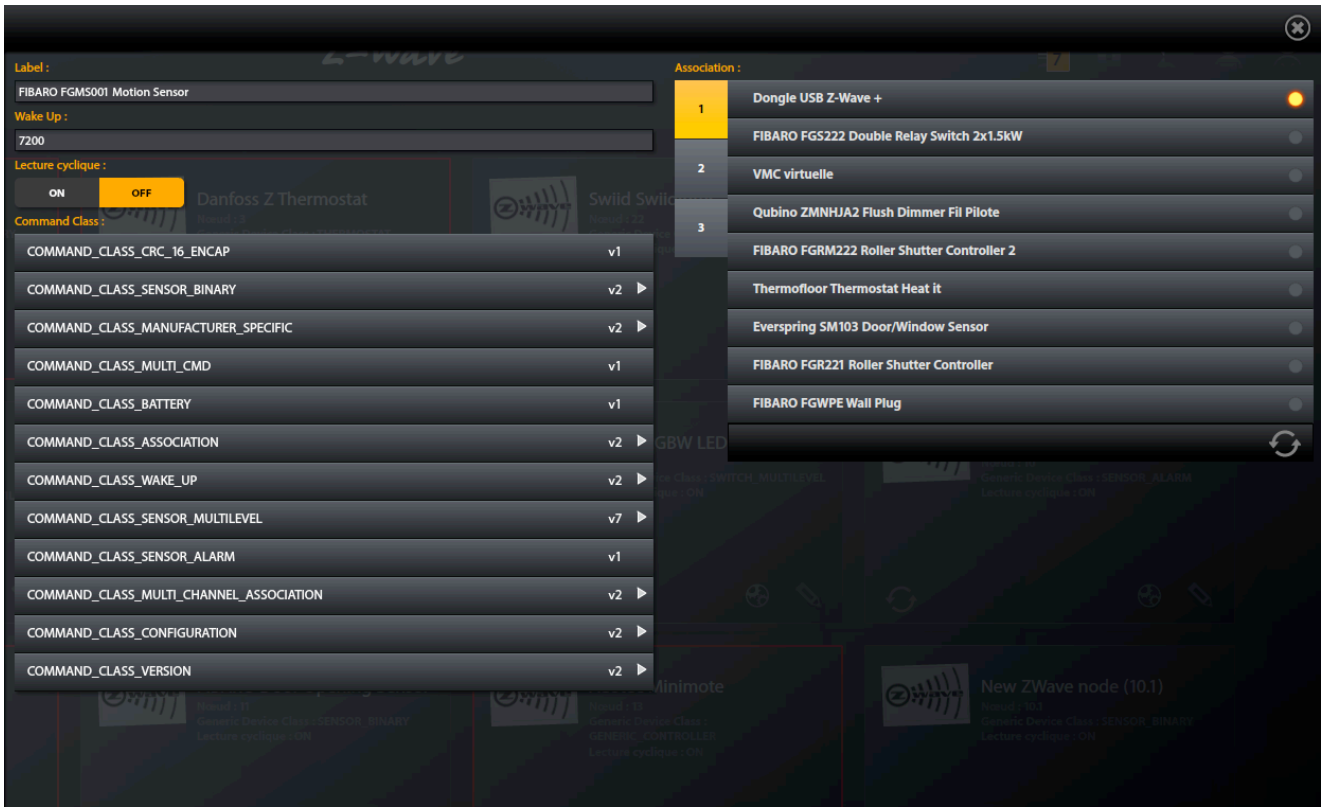
Once the settings are finalised, click on save. Click on 'Create device' to open the device selection list:



Select a device type and its label, and then click on > to assign it to a room. Now confirm.

3.3 Module properties

Clicking on the thumbnail's icon displays the module's properties.



The wizard features editable properties (label, wake up, cyclic readout), as well as the complete association groups.

3.3.1 Command class

This list includes all the '*Command Class*' implemented in the module. You can specify the version of each of the module's command class to filter the devices compatible with the module.

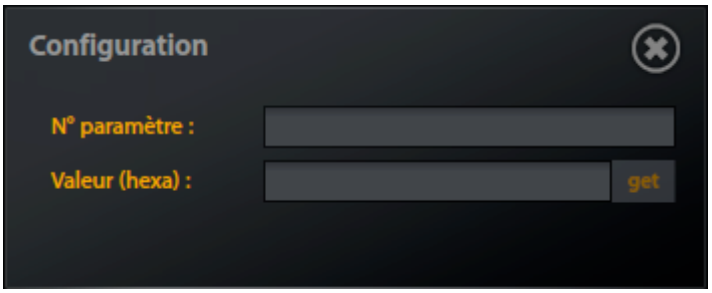
If your module implements the '*Command Class*' **ASSOCIATION**, you can manage associations (see 3.3.2).

3.3.2 Association

Associations enable direct exchanges between modules, without using lifemodus (e.g., a door/window magnetic contact will send an on/off command to a lamp when an action is detected). The number of groups varies depending on the module, as does the number of modules you can associate per group.

The icon recovers module association details for the selected group and thus, updates the '*Config Studio*' interface.

3.4 Configuration



Refer to your module manufacturer's documentation for further details about the required '*parameter number*' and '*value*'.

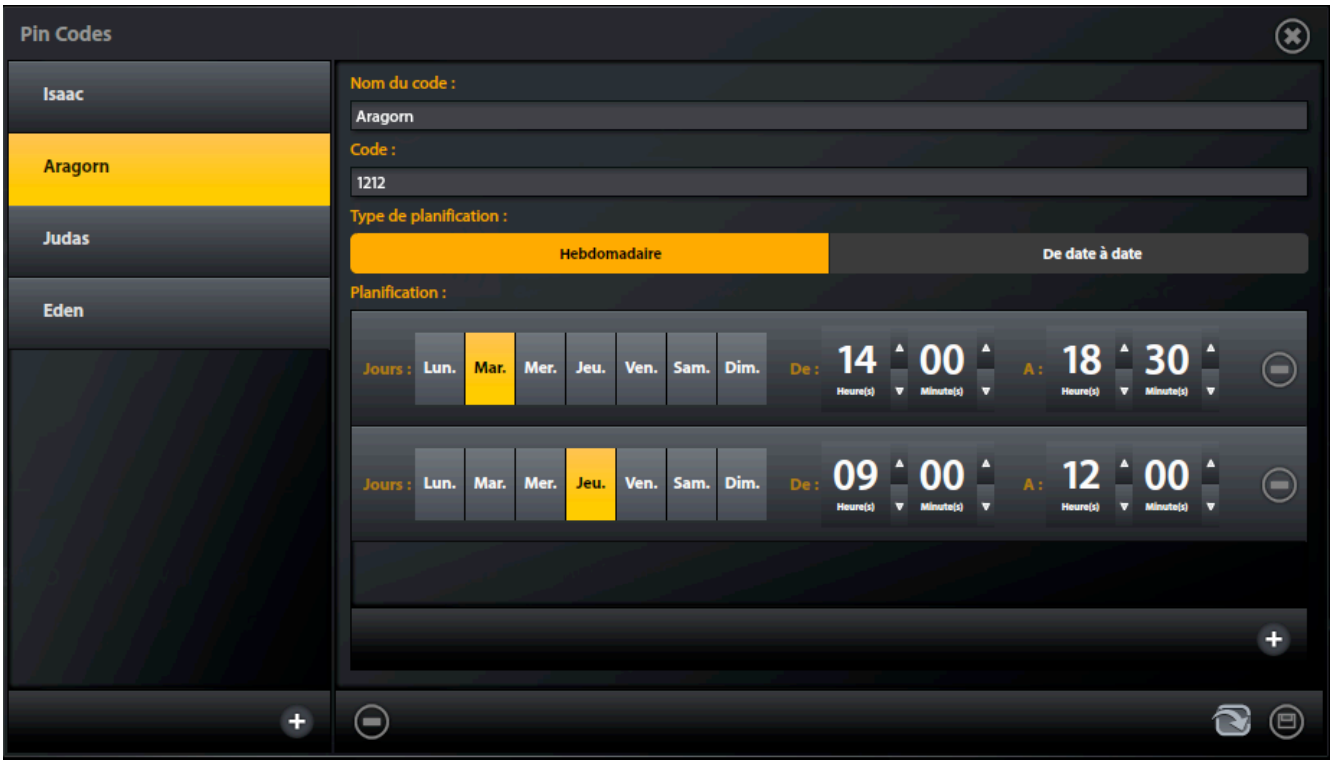
You can recover the current value by only entering the '*parameter number*' field.

You can send the new value by entering the '*parameter number*' and '*value*' fields.

The '*value*' field corresponds to a hexadecimal byte table. Thus, if a value requires 2 bytes (e.g. 02 and D0) enter 02D0 in the '*value*' field. On the other hand, if received value includes several bytes, each byte will be separated by a '/' character.

3.5 User code management

Modules compatible with the USER_CODE command class (e.g. the polypad) can manage user codes, as well as access control (only if the SCHEDULE_ENTRY_LOCK class is implemented) for each code.



Click on + to add a new user. Then enter a name and code. The code can be directly imported from an rfid card if the module includes a card reader (press).

Access can be controlled as follows:

- Weekly schedule management: Click on + to add a new time slot, then select the day of the week and start and end times, then save.
- Date to date management: Enter the start and end dates

Important: Switching over from one access control type to another will lead to the removal of the time slots entered for the associated user code.

Each module has its specific limits (user code, time slots). Example for the polypad:

- 15 user codes
- 7 time slots for the weekly schedule
- 2 time slots for a date to date schedule

3.6 Non 'Listening' modules

Non listening modules cannot receive messages if they are not awake.

If you send messages to these modules via Lifemodus, they will automatically be put in a queue.

For the messages to be delivered, wait for the module to send a message.

For example, to send a configuration message to this type of module, enter the parameter and value first. Then click on the button to send the message. Then, **after** pressing the button, wait for the module to wake up or wake it up manually so that it sends a message.

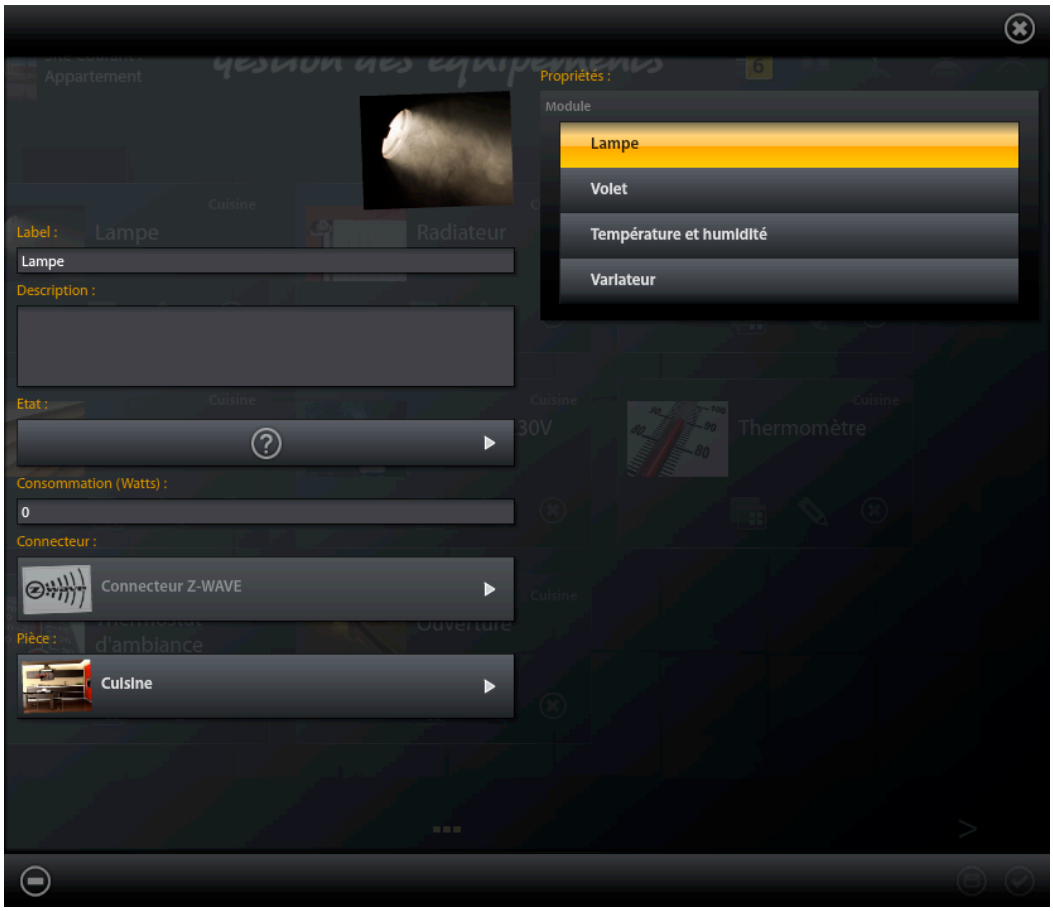
The configuration message will then be sent after receiving a message from this module.

4 Devices

To store a Z-Wave device outside the wizard, select the Z-Wave connector.

The list of modules associated with this connector appears in the right pane.

Now, select the required module.



For the 'Generic sensor' device (use if the required sensor is not part of the device list, e.g. UV sensor), the sensor type is entered in addition to the associated module: