# Lifedomus Z-Wave

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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 f 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 Eilicon to automatically recover the selected Com port.
- Parity: None by default.

•

• Number of stop bits: 1 by default.

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• 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.

	Connecteur Z-WAVE	
Protocole : Z-Wave		
Catégorie : Interfaces USB Interface : Dongle USB Z-Wave		
	Propriétés :	
	Vitesse de transmission	
	115200	>
	Nombre de bits de données	
	8	>
	Port COM	
	USB 2	
	Parité	
	Aucun(e)	•
	Nombre de bits d'arrêt	
	1	•
	Délai de demande de retour d'état	
	120	
	Θ	



# 3 Z-Wave modules

#### 3.1 'Modules' screen

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

Clicking on the Vicon 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.).* 



icon opens a module device creation wizard.



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

he 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:

Configuration du module		- <u>1</u>		۲	
FIBARO FGS222 Double Relay	Label :	FIBARO FGS222	Double Relay Swit	tch 2x1.5kW	
Endpoint nº 1 (node 28)					
	Later Thilman	COMMAND_CLASS_CONFIGURATION			
Endpoint n° 2 (node 28)	Command	COMMAND_CLASS_FIRMWARE_UPDATE_MD			
	Class :	COMMAND_CLASS_MANUFACTURER_SPECIFIC			
		COMMAND_C	CLASS_MARK		
		COMMAND_C	CLASS_MULTI_CH	ANNEL_ASSOCIATION	
13781191214	Groupes				
	associés au contrôleur	1 2	3		
11111111111111111	USB :				
	Lecture cyclique :	ON	OFF		
the second se					
			Enregistrer	Créer l'équipement	

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

Laver							
Label :				Association	:		
FIBARO FGMS001 Motion Sensor			-	1	Dongle USB Z-W	'ave +	0
7200					FIBARO FGS222	Double Relay Switch 2x1.5kW	•
Lecture cyclique :		_		2			
ON OFF Danfoss 7 Thermostat				ic	VINC VILLENE		
Command Class :				3	Qubino ZMNHJA	2 Flush Dimmer Fil Pilote	
COMMAND_CLASS_CRC_16_ENCAP		v1	9		FIBARO FGRM22	2 Roller Shutter Controller 2	
COMMAND_CLASS_SENSOR_BINARY		v2	▶		Thermofloor The	ermostat Heat it	
COMMAND_CLASS_MANUFACTURER_SPECIFIC		v2	►		Everspring SM10	3 Door/Window Sensor	 •
COMMAND_CLASS_MULTI_CMD	_	v1			FIBARO FGR221 I	Roller Shutter Controller	 •
COMMAND_CLASS_BATTERY		v1			FIBARO FGWPE	Wall Plug	•
COMMAND_CLASS_ASSOCIATION		v2	•				£.
COMMAND_CLASS_WAKE_UP		v2				Generic Lecture	
COMMAND_CLASS_SENSOR_MULTILEVEL		v7					
COMMAND_CLASS_SENSOR_ALARM		v1					
COMMAND_CLASS_MULTI_CHANNEL_ASSOCIATION	_	v2					
COMMAND_CLASS_CONFIGURATION		v2	•				
COMMAND_CLASS_VERSION		v2	•				
Manuel 11 Generic Device Class : SERSOR, BINARY Lecture cyclique : ON						CHANNE CONSTRUCT OF CONSTRUCT O	

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 on/off command lamp contact will send an to а 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 *content of the selected group and thus, updates the 'Config Studio'* interface.



#### 3.4 Configuration

Configuration	۲
N° paramètre :	
Valeur (hexa) :	

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.

Pin Codes	
Isaac	Nom du code : Aragom
Aragorn	Code :
Judas	Type de planification : Hebdomadaire De date à date
Eden	Planification : Jours : Lun. Mar. Mer. Jeu. Ven. Sam. Dim. De: 14 A 000 A A: 18 A 30 A Dim. De: Heurs() V Minute() V Minute() V De: Heurs() V Minute() V
	Jours: Lun. Mar. Mer. Jeu. Ven. Sam. Dim. De: 09 * 00 * A. A: 12 * 00 * Minute() * Minute() * Minute() * Minute() * Minute()
	+
÷	

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

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A 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.

	۲
Appartement <b>Yeshon des equip</b>	Propriétés :
	Module
	Lampe
Cuisine	Volet
Label: Lampe Radiateur	Température et humidité
Lampe	Varlateur
Etat : Cuisine Constant	
(?) ▶	
Consommation (Watts) :	
0	
Connecteur :	
Connecteur Z-WAVE	
Pièce: d'ambiance	
Culsine	
محتلفا المحرب المحاصير المستحرب المحتجرين	
1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
Θ	8 0

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:

Propriétés :	/	
Module		
Aeotec MultiSensor 6		►
Sensor		
Ultraviolet		•