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# ZIF MODULE 5028

**Z-Wave Interface** for Automation Systems

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Installation Guide and User's Manual

Firmware version 0.8





Z-Wave DIN-rail Module  
Type ZIF5028 / LHC5028

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# 1. Safety Instructions

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 Please read and follow the manual carefully.

- ! **Only authorised technicians under consideration of the country-specific installation norms may do works with 230 Volt mains power.**
- ! **Prior to the assembly of the product, the voltage network must be switched off.**

# 2. Disposal

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Dispose of the packaging in an environmentally-friendly manner. This product is labelled in accordance with European Directive 2012/19/EU concerning used electrical and electronic appliances (Waste Electrical and Electronic Equipment – WEEE). The guideline determines the framework for the return and recycling of used products as applicable throughout the EU.

# 3. Warranty

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The guarantee conditions for this product are as defined by your representative in the country in which it is sold. Details regarding these conditions can be obtained from the dealer from whom the product was purchased. The bill of sale or receipt must be produced when making any claim under the terms of this guarantee.

## 4. Product description

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The ZIF5028 DIN-rail module, which is built upon the wireless Z-Wave communication protocol, has 6 relay driven outputs and 6 digital inputs. The unit is a multi-purpose Z-Wave I/O module, which can be used for many applications. E.g. ZIF5028 provides the possibility to control other systems via the Z-Wave network, by utilizing the 6 outputs as a kind of hand-over function to another automation system.

The relay outputs, which can be controlled from the Z-Wave network, is suitable for switching up to 6 pcs. 230Vac loads. In connection with simultaneous connection to SELV (**S**afety **E**xtra **L**ow **V**oltage) and 230Vac power circuits for relay outputs, relays must be considered as two groups, where the first group includes output 1 to 3 and the second group includes the outputs 4 to 6. This ensures complete separation between the SELV and 230Vac circuits. If one of the relays in the group is connected to a SELV circuit, the remaining outputs are not allowed to be connected to 230Vac or another circuit which is not a SELV circuit.

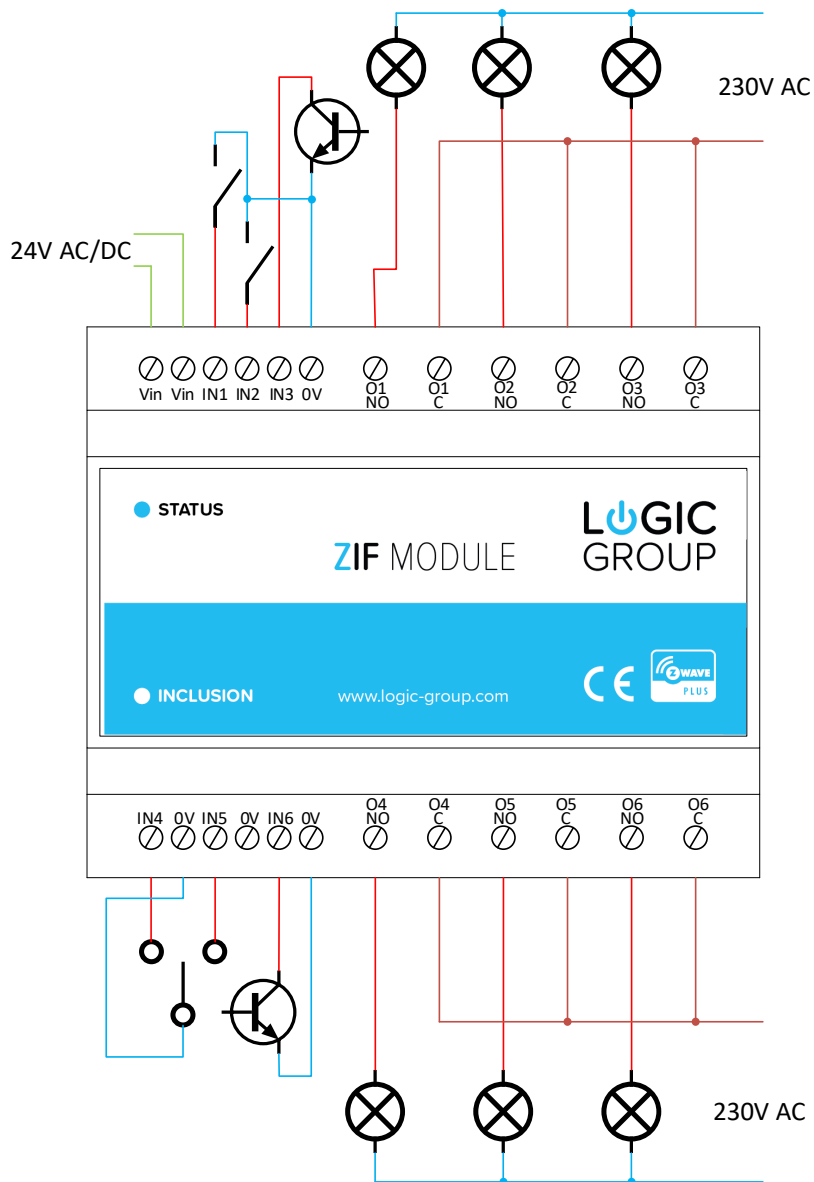
For example, the relay outputs of the ZIF5028 module can be used to control the 230Vac power supply outlet, making it possible to turn on and disconnect the electrical outlets directly through the Z-Wave network. For safety reasons, however, it is recommended not to use the ZIF5028 to plug electrical outlets that are normally used for hazardous tools and machinery.

The 6 digital inputs of the ZIF5028 are useful for various purposes, where potential-free contacts, or Open Collector outputs, can be connected. The inputs can be configured to different trigger modes; leading edge, trailing edge or level triggered.

The ZIF5028's inputs can be programmed to control other Z-Wave devices when the inputs are activated, by sending Z-Wave commands over the Z-Wave network to e.g. Z-Wave relay modules, dimmer units etc. ZIF5028 allows sending different types of Z-Wave commands by utilizing the different association groups for the 6 inputs. In addition, the ZIF5028 also acts as a repeater, thus extending the range of the Z-Wave network.

By default, the ZIF5028's inputs and outputs are set to operate as toggle-relays. Input 1 controls the output 1, input 2 controls the output 2, etc. This functionality can be modified via the configuration parameters 3-8 and 13-18

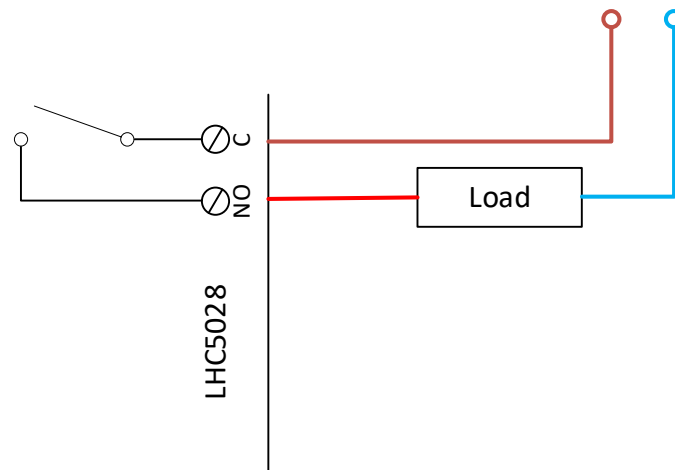
## 5. Mounting



The ZIF5028 must be connected to a 24 Volt AC or DC power supply via the terminals labeled "Vin". The polarity is of no importance. The supply must be dimensioned to allow the supplied module with enough power to enable all relays to be activated. Regarding power consumption: see the technical details section.

## 5.1. Relay Outputs

The 6 outputs of the ZIF5028 module consist of 1-pole SPST connectors (Single-Pole Single-Throw).



As default the outputs are configured to be controlled by its corresponding input (output 1 is controlled by input 1, etc.). This functionality is changeable via configuration parameter 13 to 18.

## 5.2. Inputs

The digital inputs of the ZIF5028 module can be connected to different types of control signals - switches, relays, open-collector outputs, etc.

The inputs IN1, IN2, IN3, IN4, IN5 and IN6 which operates as active low, are pr. default pulled up to 3V DC and must be pulled low in order to work, by mounting e.g. a contact between [IN1..IN6] and 0V.

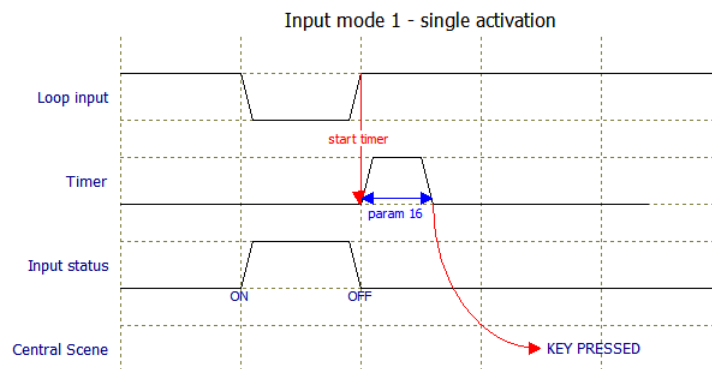
The inputs can be configured to different trigger functions using configuration parameters 3, 5, 7, 9, 11 and 13.

The default setup of the inputs is switching between the modes on/off, or off/on the leading edge of the input signal, i.e. on each activation of the input, the mode will change (toggle relay function).

The following modes can be setup for inputs:

### Input Mode 1.

When the configuration parameters for the inputs are set to the value '1', the inputs will have the functionality as shown in the figure below:



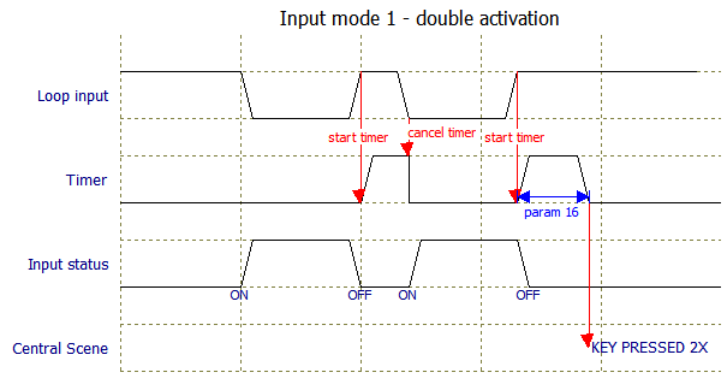
*Loop input:* Physical signals on the input. Will become 0V when the input is shorted by e.g. a contact.

*Timer:* A software timer that begins when the input is passivated. The time is set in configuration parameter 16.

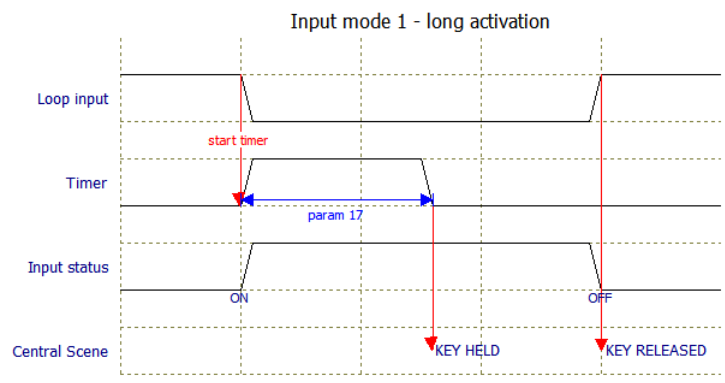
*Input status:* The status that the input takes and is reported through the various association groups.

*Central Scene:* Specifies which type of Central Scene message is sent through the Lifeline association group.





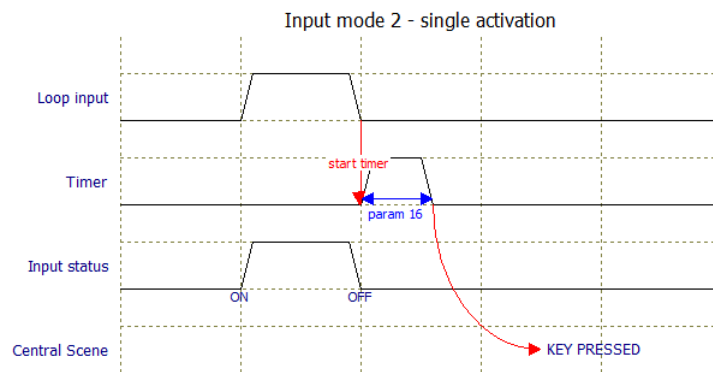
The figure above shows how a double activation is detected. The two activations must happen within the time specified in configuration parameter 16 to be accepted as a double activation.



The figure above shows how the timing works at a long activation, where the activation must be longer than the time specified in configuration parameter 17 to be accepted as a long activation (Central Scene Key Held).

**Input Mode 2.**

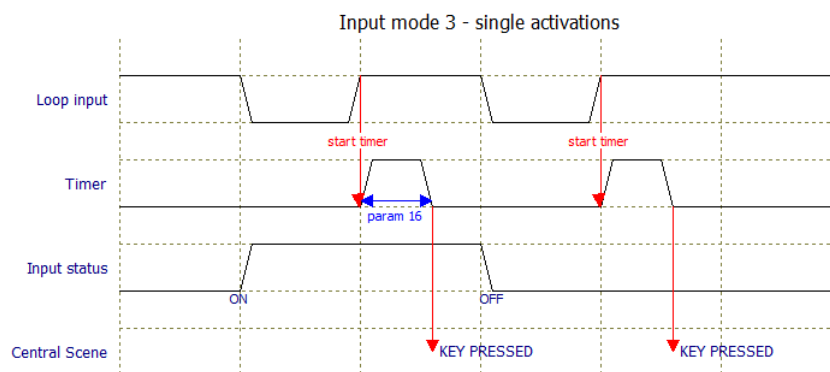
When the configuration parameters for the inputs are set to the value '2' the inputs will have same functionality as Input Mode 1 except the input signal is inverted, making it possible to use contacts of the type 'normally-closed'.



Other activations are corresponding to Input Mode 1 except *Loop Input* is inverted.

**Input Mode 3.**

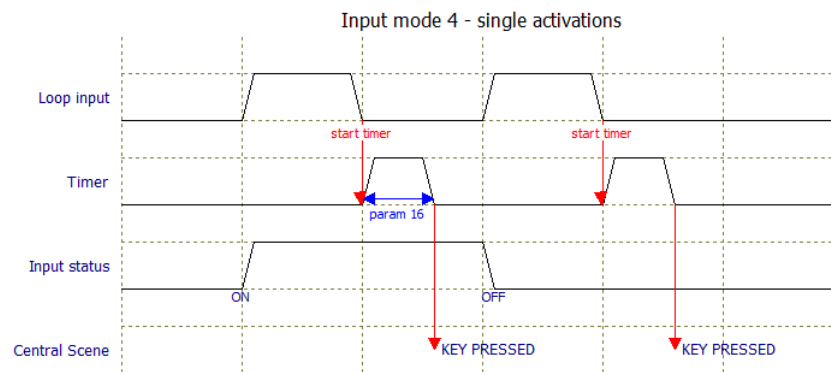
When configuration parameters for an input is set to the value '3' the inputs will work as a toggle switch; the first activation will give the input the status "ON", next activation will change the status to "OFF". See figure below.



Other activation scenarios are as described in Input Mode 1, except the input status will change for each activation of the input instead of following *Loop input*.

### Input Mode 4.

When the configuration parameters for the inputs are set to the value '4', the inputs will have same function as Input Mode 3 except the detection of the input signal is inverted, making it possible to use contacts of the type 'normally-closed'.

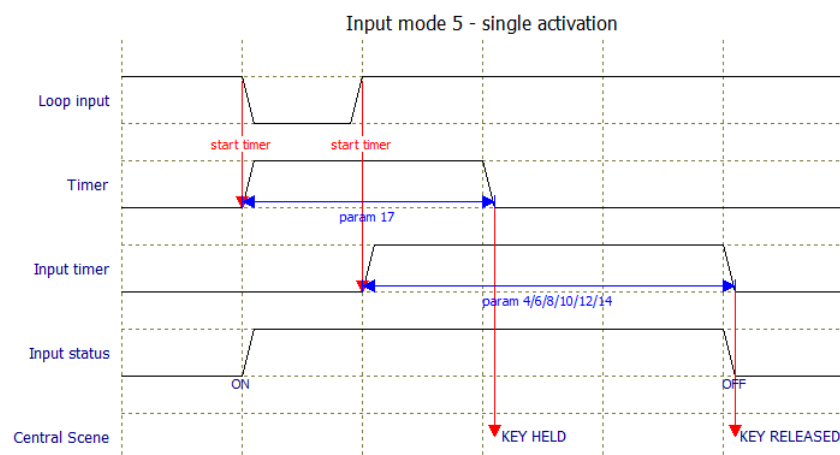


Other activations are corresponding to Input Mode 3, except the *Loop Input* is inverted.

### Input Mode 5.

When the configuration parameters for the inputs are set to the value '5', the inputs will have same function as for Input Mode 1, except the input status can be prolonged with a configurable timer (configuration parameter 4, 6, 8, 10, 12 and 14).

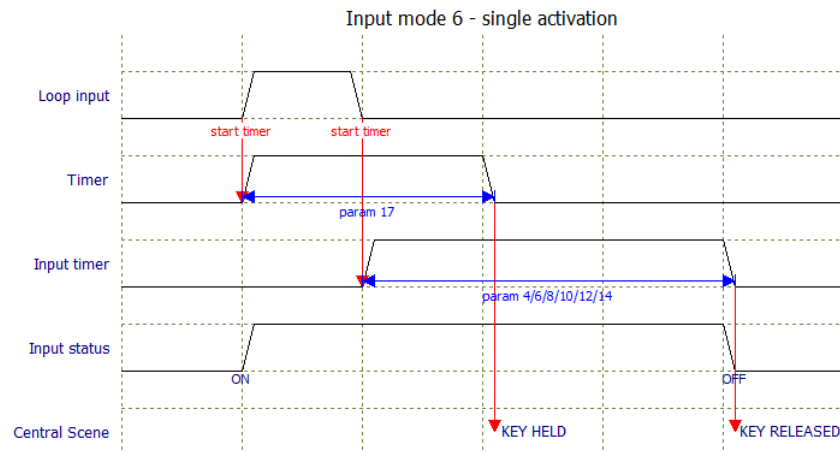
This makes it possible to control e.g. lighting where the input is connected to a motion detector. So when a movement is detected the status is preserved during the time the associated timer is set to.



As seen from the above, a KEY HELD Central Scene notification will appear even though the activation on the input is shorter than configuration parameter 17. This is because the status on the input is prolonged with the time specified in the configuration parameter for the input timer (parameter 4/6/8/10/12/14).

### Input Mode 6.

When the configuration parameters for the inputs are set to the value '6' the inputs will have same function as for Input Mode 5, except the detection of the input signal is inverted, making it possible to use contacts of the type 'normally-closed'.



Other activations are corresponding to Input Mode 5, except the *Loop Input* is inverted.

## 6. Factory Reset

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ZIF5028 can be reset to factory settings, i.e. all configurations and device address will be reset to default settings. The device must then be reconnected to the Z-Wave network.

Resetting is performed by activating the small pushbutton marked "INCLUSION" located on the front for at least 10 seconds until the LED flashes briefly. E.g. slide a needle pin or a toothpick through the small hole to activate the pushbutton.

This procedure only applies to cases where the primary network controller is not available or not operational.

## 7. Z-Wave network enrollment

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Upon delivery, the ZIF5028 module has not been enrolled into any Z-Wave network. In order to communicate with other devices in the Z-Wave network, ZIF5028 must be enrolled in the network. This process is called to *add* the device in the Z-Wave network. Devices can also be removed from the Z-Wave network if they are to be used in another installation. This is called to *remove* the device from the Z-Wave network.

Both processes are initiated by setting the central network controls in either *inclusion* or *exclusion* mode. Please refer to the network controller's manual how to set the central controls in either inclusion or exclusion mode. Then, the inclusion mode / exclusion mode on the ZIF5028 device is activated by pressing the small button through the hole in the front of the module, marked "INCLUSION", after which the status LED will start flashing. If the device already belongs to a network, the device must be excluded before it can be included in the current network, otherwise the inclusion process will fail.

## 8. Association Groups

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The ZIF5028 consists of 12 virtual devices (endpoints), as well as a basic virtual device; i.e. basic device (root device or endpoint 0), as well as 12 sub devices (endpoint 1 to 12).

The base device is used by the Controllers which does not support Multichannel communication, hence providing a very limited use of this module.

The 12 endpoints consist of 6 devices for controlling module outputs and 6 units for reporting module inputs. Shown below is an overview of the various association groups for each individual unit.

The first number in the association group number indicates the group number for actual device, and the second number is the group number on the root device (endpoint 0).

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<b>Device 1</b> (End Point 1)	Relay Output 1
Group 1 / 1	<p><i>Lifeline.</i> Lifeline group for the entire module.</p> <p>Sends Basic Report On / Off when relay output 1 is activated.</p> <p>This group is typically used for reporting the actual status of the output to the Controller to let the Controller visualize the output in its user interface.</p> <p>Max. nodes in the group: 1</p>
<b>Device 2</b> (End Point 2)	Relay Output 2
Group 1 / -	<p><i>Lifeline.</i> Lifeline group for the entire module.</p> <p>Sends Basic Report On / Off when relay output 2 is activated.</p> <p>This group is typically used for reporting the actual status of the output to the Controller to let the Controller visualize the output in its user interface.</p> <p>Max. nodes in the group: 1</p>
<b>Device 3</b> (End Point 3)	Relay Output 3
Group 1 / -	<p><i>Lifeline.</i> Lifeline group for the entire module.</p> <p>Sends Basic Report On / Off when relay output 3 is activated.</p> <p>This group is typically used for reporting the actual status of the output to the Controller to let the Controller visualize the output in its user interface.</p> <p>Max. nodes in the group: 1</p>

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<b>Device 4</b> (End Point 4)	Relay Output 4
Group 1 / -	<p><i>Lifeline.</i> Lifeline group for the entire module. Sends Basic Report On / Off when relay output 4 is activated. This group is typically used for reporting the actual status of the output to the Controller to let the Controller visualize the output in its user interface. Max. nodes in the group: 1</p>
<hr/>	
<b>Device 5</b> (End Point 5)	Relay Output 5
Group 1 / -	<p><i>Lifeline.</i> Lifeline group for the entire module. Sends Basic Report On / Off when relay output 5 is activated. This group is typically used for reporting the actual status of the output to the Controller to let the Controller visualize the output in its user interface. Max. nodes in the group: 1</p>
<hr/>	
<b>Device 6</b> (End Point 6)	Relay Output 6
Group 1 / -	<p><i>Lifeline.</i> Lifeline group for the entire module. Sends Basic Report On / Off when relay output 6 is activated. This group is typically used for reporting the actual status of the output to the Controller to let the Controller visualize the output in its user interface. Max. nodes in the group: 1</p>
<hr/>	
<b>Device 7</b> (End Point 7)	Digital Input 1
Group 1 / -	<p><i>Lifeline.</i> <b>Sends Basic Report On / Off when input 1 is activated.</b> Max. nodes in the group: 1</p>
Group 2 / 2	<p>Sends <b>Basic Set On / Off</b> when input 1 is activated. For example, used to control relay modules or for visualization in the central controller unit (e.g., Fibaro Home Center). Max. nodes in the group: 5</p>
Group 3 / 3	<p>Sends <b>Binary Switch Set On / Off</b> when input 1 is activated. For example, used to control relay modules. Max. nodes in the group: 5</p>
Group 4 / 4	<p>Sends <b>Multilevel Switch Set / Multilevel Switch Start Level Change / Multilevel Switch Stop Level Change</b> when input 1 is activated. Typically used to control dimmers, curtain controls, etc. Max. Number of units in the group: 5</p>

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<b>Device 8</b> ( <i>End Point 8</i> )	Digital Input 2
Group 1 / -	<p><i>Lifeline.</i></p> <p>Sends <b>Basic Report On / Off</b> when input 2 is activated.</p> <p>Max. Number of units in the group: 1</p>
Group 2 / 5	<p>Sends <b>Basic Set On / Off</b> when input 2 is activated.</p> <p>For example, used to control relay modules or for visualization in the central controller unit (E.g. Fibaro Home Center).</p> <p>Max. Number of units in the group: 5</p>
Group 3 / 6	<p>Sends <b>Binary Switch Set On / Off</b> when input 2 is activated.</p> <p>For example, used to control relay modules.</p> <p>Max. Number of units in the group: 5</p>
Group 4 / 7	<p>Sends <b>Multilevel Switch Set / Multilevel Switch Start Level Change / Multilevel Switch Stop Level Change</b> when input 2 is activated.</p> <p>Typically used to control dimmers, curtain controls, etc.</p> <p>Max. Number of units in the group: 5</p>

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<b>Device 9</b> ( <i>End Point 9</i> )	Digital Input 3
Group 1 / -	<p><i>Lifeline.</i></p> <p>Sends <b>Basic Report On / Off</b> when input 3 is activated.</p> <p>Max. Number of units in the group: 1</p>
Group 2 / 8	<p>Sends <b>Basic Set On / Off</b> when input 3 is activated.</p> <p>For example, used to control relay modules or for visualization in the central controller unit (E.g. Fibaro Home Center).</p> <p>Max. Number of units in the group: 5</p>
Group 3 / 9	<p>Sends <b>Binary Switch Set On / Off</b> when input 3 is activated.</p> <p>For example, used to control relay modules.</p> <p>Max. Number of units in the group: 5</p>
Group 4 / 10	<p>Sends <b>Multilevel Switch Set / Multilevel Switch Start Level Change / Multilevel Switch Stop Level Change</b> when input 3 is activated.</p> <p>Typically used to control dimmers, curtain controls, etc.</p> <p>Max. Number of units in the group: 5</p>

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<b>Device 10</b> ( <i>End Point 10</i> )	Digital Input 4
Group 1 / -	<p><i>Lifeline.</i></p> <p>Sends <b>Basic Report On / Off</b> when input 4 is activated.</p> <p>Max. Number of units in the group: 1</p>
Group 2 / 11	<p>Sends <b>Basic Set On / Off</b> when input 4 is activated.</p> <p>For example, used to control relay modules or for visualization in the central controller unit (E.g. Fibaro Home Center).</p> <p>Max. Number of units in the group: 5</p>



- Group 3 / 12 Sends **Binary Switch Set On / Off** when input 4 is activated.  
For example, used to control relay modules.  
Max. Number of units in the group: 5
- Group 4 / 13 Sends **Multilevel Switch Set / Multilevel Switch Start Level Change / Multilevel Switch Stop Level Change** when input 4 is activated.  
Typically used to control dimmers, curtain controls, etc.  
Max. Number of units in the group: 5

**Device 11***(End Point 11)*

Digital Input 5

- Gruppe 1 / - *Lifeline.*  
Sends **Basic Report On / Off** when input 5 is activated.  
Max. Number of units in the group: 1
- Group 2 / 14 Sends **Basic Set On / Off** when input 5 is activated.  
For example, used to control relay modules or for visualization in the central controller unit (E.g. Fibaro Home Center).  
Max. Number of units in the group: 5
- Group 3 / 15 Sends **Binary Switch Set On / Off** when input 5 is activated.  
For example, used to control relay modules.  
Max. Number of units in the group: 5
- Group 4 / 16 Sends **Multilevel Switch Set / Multilevel Switch Start Level Change / Multilevel Switch Stop Level Change** when input 5 is activated.  
Typically used to control dimmers, curtain controls, etc.  
Max. Number of units in the group: 5

**Device 12***(End Point 12)*

Digital Input 6

- Group 1 / - *Lifeline.*  
Sends **Basic Report On / Off** when input 6 is activated.  
Max. Number of units in the group: 1
- Group 2 / 17 Sends **Basic Set On / Off** when input 6 is activated.  
For example, used to control relay modules or for visualization in the central controller unit (E.g. Fibaro Home Center).  
Max. Number of units in the group: 5
- Group 3 / 18 Sends **Binary Switch Set On / Off** when input 6 is activated.  
For example, used to control relay modules.  
Max. Number of units in the group: 5
- Group 4 / 19 Sends **Multilevel Switch Set / Multilevel Switch Start Level Change / Multilevel Switch Stop Level Change** when input 6 is activated.  
Typically used to control dimmers, curtain controls, etc.  
Max. Number of units in the group: 5

## 9. Configuration parameters

Z-Wave devices should be able to work directly after they have been included in the Z-Wave network, but by use of different configuration parameters, the device functionality can be changed to better match individual wishes or needs, as well as allow for additional features.

*Parameter 1: Parameter size: 1 byte. Status of LED.*

This parameter can be used to change the mode of the front-mounted status LED.

Value	Description
0	The LED is Off.
1	The LED is steadily lit-up. (Standard)
2	The LED flashes in 1 second interval (1 Hz).
3	The LED flashes in ½ second interval (½ Hz).

*Parameter 2: Parameter size: 1 byte. Brightness of status LED.*

Determines the brightness of the status LED.

Value	Description
0	Switch off LED.
1 - 99	Brightness level (%). (Standard 50%)

*Parameter 3: Parameter size 1 byte. Function setup of input 1.*

Select the value from the table below. Please refer to the section reg. input functions.

Value	Description
0	Inactive.
1	Mode 1, level-controlled input – normally open.
2	Mode 2, level controlled input – normally closed.
3	Mode 3, toggle controlled input – normally open (Standard)
4	Mode 4, toggle controlled input – normally closed
5	Mode 5, timer controlled input – normally open.
6	Mode 6, timer controlled input – normally closed.

*Parameter 4: Parameter size: 1 byte. Timer for input 1*

Timer value for input 1, used when input Mode 5 or 6 is chosen.

Value	Description
0	Inactive (standard)
1 - 127	Time in seconds: 1 – 127 seconds.
128 - 255	Time in minutes: 128 – 255 minutes.

**Parameter 5:** *Parameter size: 1 byte. Function setup of input 2.*

Select the value from the table below. Please refer to the section reg. input functions.

<i>Value</i>	<i>Description</i>
0	Inactive.
1	Mode 1, level-controlled input – normally open.
2	Mode 2, level controlled input – normally closed.
3	Mode 3, toggle controlled input – normally open (Standard)
4	Mode 4, toggle controlled input – normally closed
5	Mode 5, timer controlled input – normally open.
6	Mode 6, timer controlled input – normally closed.

**Parameter 6:** *Parameter size: 1 byte. Timer for input 2*

Timer value for input 2, used when input Mode 5 or 6 is chosen.

<i>Value</i>	<i>Description</i>
0	Inactive (standard)
1 - 127	Time in seconds: 1 – 127 seconds.
128 - 255	Time in minutes: 128 – 255 minutes.

**Parameter 7:** *Parameter size: 1 byte. Function setup of input 3.*

Select the value from the table below. Please refer to the section reg. input functions.

<i>Value</i>	<i>Description</i>
0	Inactive.
1	Mode 1, level-controlled input – normally open.
2	Mode 2, level controlled input – normally closed.
3	Mode 3, toggle controlled input – normally open (Standard)
4	Mode 4, toggle controlled input – normally closed
5	Mode 5, timer controlled input – normally open.
6	Mode 6, timer controlled input – normally closed.

**Parameter 8:** *Parameter size: 1 byte. Timer for input 3.*

Select the value from the table below. Please refer to the section reg. input functions.

<i>Value</i>	<i>Description</i>
0	Inactive (standard)
1 - 127	Time in seconds: 1 – 127 seconds.
128 - 255	Time in minutes: 128 – 255 minutes.

**Parameter 9:** *Parameter size: 1 byte. Function setup of input 4.*

Select the value from the table below. Please refer to the section reg. input functions.

<i>Value</i>	<i>Description</i>
0	Inactive.
1	Mode 1, level-controlled input – normally open.
2	Mode 2, level controlled input – normally closed.
3	Mode 3, toggle controlled input – normally open (Standard)
4	Mode 4, toggle controlled input – normally closed
5	Mode 5, timer controlled input – normally open.
6	Mode 6, timer controlled input – normally closed.

**Parameter 10:** *Parameter size: 1 byte. Timer for input 4.*

Select the value from the table below. Please refer to the section reg. input functions.

<i>Value</i>	<i>Description</i>
0	Inactive (standard)
1 - 127	Time in seconds: 1 – 127 seconds.
128 - 255	Time in minutes: 128 – 255 minutes.

**Parameter 11:** *Parameter size: 1 byte. Function setup of input 5.*

Select the value from the table below. Please refer to the section reg. input functions.

<i>Value</i>	<i>Description</i>
0	Inactive.
1	Mode 1, level-controlled input – normally open.
2	Mode 2, level controlled input – normally closed.
3	Mode 3, toggle controlled input – normally open (Standard)
4	Mode 4, toggle controlled input – normally closed
5	Mode 5, timer controlled input – normally open.
6	Mode 6, timer controlled input – normally closed.

**Parameter 12:** *Parameter size: 1 byte. Timer for input 5.*

Select the value from the table below. Please refer to the section reg. input functions.

<i>Value</i>	<i>Description</i>
0	Inactive (standard)
1 - 127	Time in seconds: 1 – 127 seconds.
128 - 255	Time in minutes: 128 – 255 minutes.

**Parameter 13: Parameter size: 1 byte. Function setup of input 6.**

Select the value from the table below. Please refer to the section reg. input functions.

Value	Description
0	Inactive.
1	Mode 1, level-controlled input – normally open.
2	Mode 2, level controlled input – normally closed.
3	Mode 3, toggle controlled input – normally open (Standard)
4	Mode 4, toggle controlled input – normally closed
5	Mode 5, timer controlled input – normally open.
6	Mode 6, timer controlled input – normally closed.

**Parameter 14: Parameter size: 1 byte. Timer for input 6.**

Select the value from the table below. Please refer to the section reg. input functions.

Value	Description
0	Inactive (standard)
1 - 127	Time in seconds: 1 – 127 seconds.
128 - 255	Time in minutes: 128 – 255 minutes.

**Parameter 15: Parameter size: 1 byte. Input Snubber-filter time\_constant.**

Specifies the time used to define the time constant of the input snubber-filter. (Increments in 0.01 second resolution.)

Value	Description
0 - 255	0 – 2,55 seconds. The standard value is 5, which corresponds to a snubber-filter-time constant of 50 milliseconds (0,05 seconds).

**Parameter 16: Parameter size: 1 byte. Threshold value for activation of inputs.**

Specifies the time that an entry must be stable before it is accepted as active / idle in 0.01 second resolution.

Value	Description
0 - 255	0 – 2,55 seconds. The standard value is 20, which corresponds to 200 milliseconds (0,2 seconds).

**Parameter 17: Parameter size: 1 byte. Threshold for input in latched mode.**

Indicates the time that an input must be activated before it accepts the button latched mode. (Increments in 0.01 second resolution.)

Value	Description
0 - 255	0 – 2,55 seconds. The standard value is 50, which corresponds to 500 milliseconds (0,5 seconds).

**Parameter 18:** Parameter size: 1 byte. Deactivate Central Scene notifications.

It is possible to enable Central Scene notifications when the 6 inputs are activated.

Value	Description
0	Central Scene notifications enabled. (Standard)
1	Central Scene notifications disabled.

**Parameter 19:** Parameter size: 1 byte. Output function, Output 1.

Choose parameter value from the scheme below.

Value	Description
0	Output is controlled via Z-Wave messages.
1	Output is controlled by input 1. (Standard)

**Parameter 20:** Parameter size: 1 byte. Output function, Output 2.

Choose parameter value from the scheme below.

Value	Description
0	Output is controlled via Z-Wave messages.
1	Output is controlled by input 2. (Standard)

**Parameter 21:** Parameter size: 1 byte. Output function, Output 3.

Choose parameter value from the scheme below.

Value	Description
0	Output is controlled via Z-Wave messages.
1	Output is controlled by input 3. (Standard)

**Parameter 22:** Parameter size 1 byte. Output function, Output 4.

Choose parameter value below.

Value	Description
0	Output is controlled via Z-Wave messages.
1	Output is controlled by input 4. (Standard)

**Parameter 23:** Parameter size 1 byte. Output function, Output 5.

Choose parameter value below.

Value	Description
0	Output is controlled via Z-Wave messages.
1	Output is controlled by input 5. (Standard)

*Parameter 24: Parameter size 1 byte. Output function, Output 6.*

Choose parameter value below.

<i>Value</i>	<i>Description</i>
0	Output is controlled via Z-Wave messages.
1	Output is controlled by input 6. (Standard)

## 10. Command Classes

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Supported Command Classes.

- *Association (version 2)*
- *Association Group Information (version 1)*
- *Multi-Channel Association (version 2)*
- *Version (version 2)*
- *Configuration (version 3)*
- *Manufacturer Specific (version 2)*
- *Z-Wave Plus Information (version 2)*
- *Device Reset Locally (version 1)*
- *Power level (version 1)*
- *Firmware Update (version 2)*
- *Basic (version 2)*
- *Binary Switch (version 2)*
- *Security Command Class (version 2)*
- *Supervision Command Class (version 1)*
- *Central Scene (version 3)*

Controlled Command Classes

- *Basic (version 2)*
- *Binary Switch (version 2)*
- *Multilevel Switch (version 4)*
- *Central Scene (version 3)*



## 11. Technical Specifications

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Power supply	10 - 24V DC, 8 – 24V AC
Relay outputs	AC1: 16A 250V AC AC3: 750W (motor) AC15: 360VA Inrush: 80A/20ms (Max)
Inputs	Digital potential free, input impedance 22Kohm.
Terminals	Screw terminals: 0,2 – 2,5 mm <sup>2</sup> Outputs: 6 x 2 pole connection; 6 x 1-pole NO contacts. Inputs: 2 x 6 pole connection; 6 x inputs, 4 x 0V.
Power consumption	Standby: 0,6 W. All relays activated: 3,5 W.
Radio protocol	Z-Wave®: EU 868.4MHz – 500 Series.
Approvals	CE
Explorer Frame Support	Ja
SDK	6.71.00
Device type	Slave with router / repeater functionality.
Generic Device Class	Binary Switch.
Specific Device Class	Power Binary Switch.
Routing	Yes
FLiRS	No
Z-Wave Plus	Yes
Firmware Version	0.8