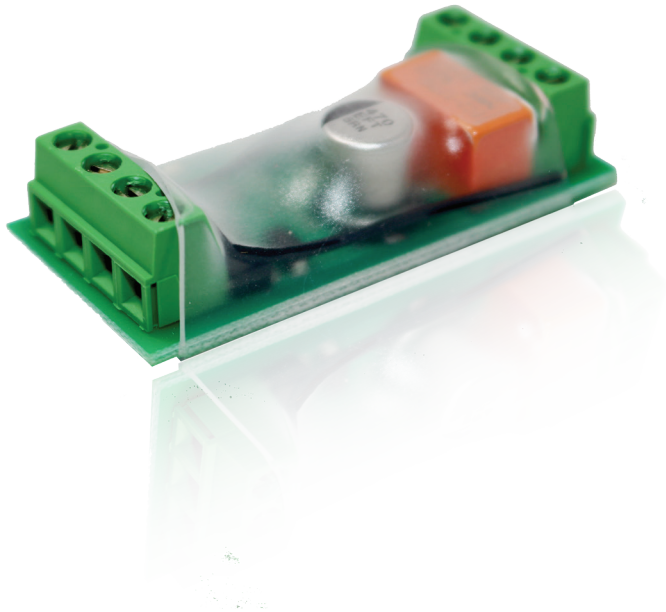# Electric Strike Lock Control

Manual

Quick Start

This device is a Z-Wave actuator. Pressing the "Z-Wave button" 3 times in 1 second (includes) and removes (excludes) the device from/to the Z-Wave network.

Please refer to the chapters below for detailed information about all aspects of the product.
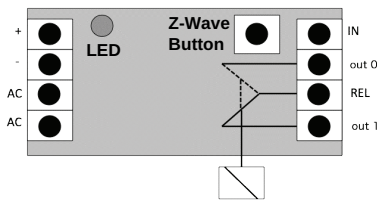
Product Description

An electric strike is an access control device used to lock and release doors. Electric strikes are installed in or on the doorframe and work in conjunction with mechanical door locks, on the principle of electronically controlling the rotation of the keeper. Allowing for door opening without manual retraction of the mechanical door lock. This product combines a 16 mm thick strike lock (that will fit into almost all door formats) with a Z-Wave plus empowered wireless control.

The lock mechanics and the Z-Wave control are operated by a 9V block battery or an external 8-12V AC / 8-24V DC transformer. The Z-Wave control accepts commands to open or close the strike. Depending on a configuration parameter the door will be looked automatically after a certain time even if no 'close' command was sent. According to the connected Z-Wave Gateway all actions of the Strike Lock will be recorded with a time stamp.

The device is a secure Z-Wave Plus device and can be used in one wireless Z-Wave network with other certified devices regardless of origin and brand. It supports secure communication if the central controller supports secure communication as well.
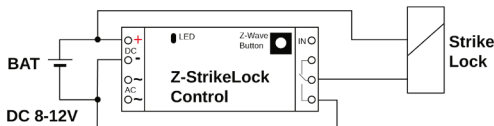
Installation Guidelines

The Strike-Lock has a IP 20 protection class. Because of that it is not recommended to install the device directly outdoors.

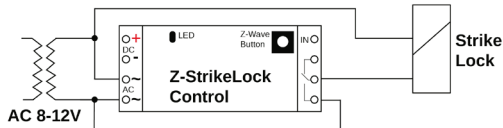There 4 possible starting situations when you want to install the Strike-Lock:

No existing installation of an electrical door opener:
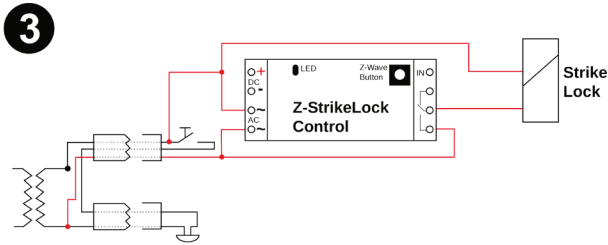

You have to install the mechanical part first. Depending if there is an existing electrical transformer or the door opener will be battery powered you refer to picture 1 or 2.

The strike lock can be installed:
- next to electrical transformer
- behind the mechanic doorlock
- between those mentioned parts

Analog Installation

There is already an existing door opener and a switch to control the door opener. Normally that is powered by an electrical transformer. In that system a simple electric circuit exists. Switch and opener – refer to the picture. The electrical circuit can be realized by two different options.

1. Cable from transformer to switch – cable from switch to lock – cable from cable to transformer
2. Pair of Cable from transformer to switch – pair of cable from transformer to lock

Connecting terminal at the transformer between a cable from the switch and a cable from the lock.

Both kinds of wiring are electrical identic. Both are possible and work properly. The more convenient solution is Version 2.

The Z-Wave Stricke Lock can be installed in all 3 positions depending on the available space. The electrical wiring is identical to a new installation, but it could be necessary to install an additional cable to the switch or the lock. So that the module is has electricity – refer to picture 3.

Existing door intercom without door opener
In that case the installation equals a complete new installation of a doorlock. It is only possible that the existing transformer can be used. The door lock control can be easily connected parallel to the transformer, if the transformer has the right output voltage.
Look at picture ½

Existing intercom with door opener
The intercom with one or more participants is normally based on an internal communicationbussystem and a gateway or control box, which is connected to the actual door opener. Here you have many different options for the installation. But for the installation of the Strike-Lock that is not relevant. You just have to find both wires, which connect the control module with the door lock mechanism. For that you just have to uninstall the existing doorlock or you refer to the information of the vendor/installer, who has installed the intercom.
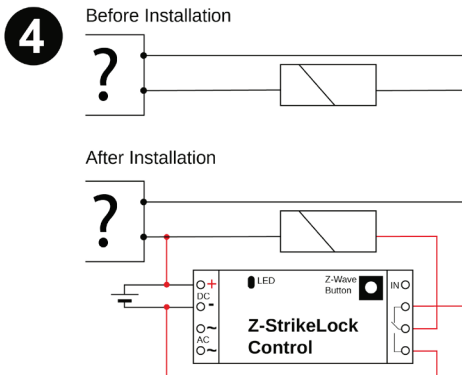

Before Installation

After Installation

Image 4 shows the necessary wiring. It is not relevant of you use a transformer or battery. One pol of the power supply (a) is connected with a cable from the doorlock. The other cable to the doorlock has to be cut and be connected to the terminals (out 0) and REL of the control module where the cable to the opener has to be connected to REL. After that change the Intercom will work with the door opener as before. By of the two opened cables you can reset the default setting of the door control. As a last step you have to connect the other pol of the power supply with the terminal out 1 of the control module. After that the parallel us of the intercom and the Z-Wave module is possible.

Now you can include the Strike Lock with pressing 3 times in 1 second on the Z-Wave button. Then you can set the configuration over the gateway.

Behavior within the Z-Wave Network
On factory default the device does not belong to any Z-Wave network. The device needs to join an existing wireless network to communicate with the devices of this network. This process is called **Inclusion**. Devices can also leave a network. This process is called **Exclusion**. The primary controller of the Z-Wave network initiates both processes. This controller will be turned into exclusion respective inclusion mode. Please refer to your primary controller's manual on how to turn your controller into inclusion or exclusion mode. Only if the primary controller is in inclusion or exclusion mode, this device can join or leave the network. Leaving the network – i.e. being excluded – sets the device back to factory default.

If the device already belongs to a network, follow the exclusion process before including it in your network. Otherwise inclusion of this device will fail. If the controller being included was a primary controller, it has to be reset first.

Pressing the Z-Wave button for one second includes the device. It is not allowed to operate the device in a non-secure environment. This means that the including controller must support Secure Command Class. A single click on the button will exclude the device.

Operating the Device
Sending secure wireless open command will release the lock until either the timeout kicks in nor a closed signal is sent. If you want to operate a third party strike lock with dry monitor contact, you can connect them to the input pin. The status of the door is then reported using sensor binary commands.

Factory Reset
To do a factory reset press the Z-Wave button on the bottom of the device for at least 10 seconds. This procedure should only be used when the primary controller is inoperable.

Firmware Update
Once the firmware update process has started double click the Z-Wave button to confirm firmware update process.

Some estimation on battery life
The strike lock control itself only needs about 20 mA of power. A 9 V lithium battery block will last more than 4 years. The operation of a strike lock however costs energy. Just assume 5 operations over a period of 5 seconds per day in vibration mode will drain the battery in about one year. Reducing the maximum on-time will even further reduce power consumption and increase battery life time.

Node Information Frame
The Node Information Frame (NIF) is the business card of a Z-Wave device. It contains information about the device type and the technical capabilities. The inclusion and exclusion of the device is confirmed by sending out a Node Information Frame. Beside this it may be needed for certain network operations to send out a Node Information Frame.

A simple click on the Z-Wave button sends a NIF.

Associations
Z-Wave devices control other Z-Wave devices. The relationship between one device controlling another device is called *association*. In order to control a different device, the controlling device needs to maintain a list of devices that will receive controlling commands. These lists are called **association groups** and they are always related to certain events (e.g. button pressed, sensor triggers, ...). In case the event happens all devices stored in the respective association group will receive a common wireless command.

Association Groups

1	Lifeline (max. nodes in group: 10)
2	Action on External Dry Input (max. nodes in group: 10)

Configuration Parameters

Z-Wave products are supposed to work out of the box after inclusion, however certain configuration can adapt the function better to user needs or unlock further enhanced features.

IMPORTANT: Controllers may only allow configuring signed values. In order to set values in the range 128 … 255 the value sent in the application shall be the desired value minus 256. For example: to set a parameter to 200 it may be needed to set a value of 200 minus 256 = minus 56. In case of a two-byte value the same logic applies: Values greater than 32768 may needed to be given as negative values, too.

Automated Close after Opening (Parameter number 0, Size 1).

Value	Description
0	No automated close after command 'open'
1 - 127	Close again after x seconds (Default 3)

Value of Off-Command (Parameter number 1, Size 1)

Value	Description
0 - 99	(Default 0)

Value of On-Command (Parameter number 2, Size 1)

Value	Description
0 - 99	(Default 99)

Technical Data

Battery Type	Transformer AC 8-12 V / DC 8-24V or 9V Block
Frequency	868/869 MHz (SRD Frequency Band according EN300220)
Wireless Range	Up to 100 m outside, on average up to 40 m inside buildings
Explorer Frame Support	Yes
SDK	6.51.6
Device Network Role	Reachable Sleeping Slave (RSS)
Device Type	Sensor
Routing	Mesh Network: yes ; but no forwarding of other devices messages
Firmware Version	1.0

Technical Parameter

Lock Control

Power draw on battery	15 mA

Strike Lock Mechanics

Dimensions	61.8 x 16.5 x 25.5 mm
Weight	0.1 Kg
Max. operation temperature	300°C
Operating type	Fail Secure
Operating current (at 9V) for full pull	500 mA
Operating current (at 9V) for vibration	250 mA
Adjustable latch	3 mm
Certification	2004/108/CE (EN55014)

Support

Should you encounter any problem, please give us an opportunity to address it before returning this product. Most questions regarding Z-Wave wireless communication standard can be answered through the international community at www.z-wave.info.If your question cannot be answered there, please use www.popp.eu/support or contact us by email: info@popp.eu

Notes