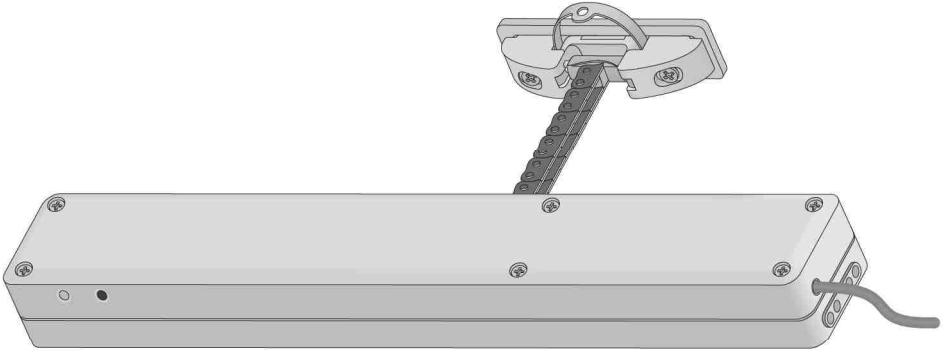


# ZWS12



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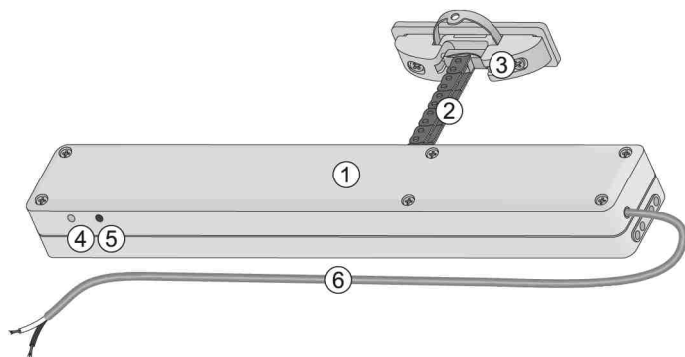
Dear Sir/Madam! Thank you for purchasing the product from FAKRO. We do hope that it will meet your expectations. To ensure appropriate functioning of the product, please peruse this User Manual.

### ACTUATOR DESCRIPTION

The ZWS12 actuator is designed for electric opening and closing FAKRO roof windows. The actuator is equipped with two-way Z-Wave radio communication module.

#### TECHNICAL SPECIFICATION

<p><b>Working temperature:</b> -10 to +65°C</p> <p><b>Dimensions:</b> 260/47/32 mm</p> <p><b>Power cable:</b> 2x0,75mm<sup>2</sup></p> <p><b>Limit switch:</b> Overload when closing, Contact when opening</p>	<p><b>Current limiting:</b> Yes</p> <p><b>Double electric insulation:</b> Yes</p> <p><b>Chain extension speed:</b> 4,25mm/s</p> <p><b>Chain pushing force:</b> 250N</p> <p><b>Closing force:</b> 250N</p>	<p><b>Chain outreach:</b> 240mm</p> <p><b>Power voltage:</b> 15V DC</p> <p><b>Rated power:</b> 12W</p> <p><b>Standby current:</b> 0,03A</p> <p><b>Protection class:</b> IP30</p>	<p><b>Radio protocol:</b> Z-Wave</p> <p><b>Radio reach:</b> Up to 20m in building</p> <p><b>Frequency:</b> EU - 868,4 MHz; AS/NZ - 921,42 MHz; US/Canada - 908,4 MHz; RU - 869 MHz. (depending on version)</p>
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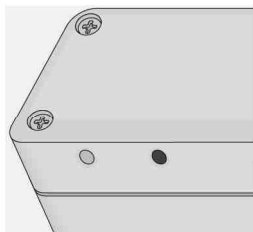


#### ACTUATOR STRUCTURE

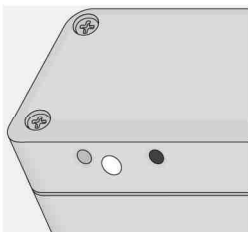
①	- Actuator
②	- Chain
③	- Chain holder
④	- Programming button
⑤	- Control button
⑥	- Power cable

#### SIGNALLING DESCRIPTION

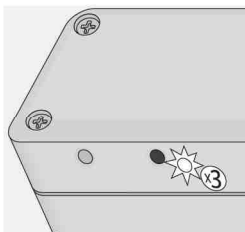
- RED BUTTON – Programming
- BLACK BUTTON – Manual control



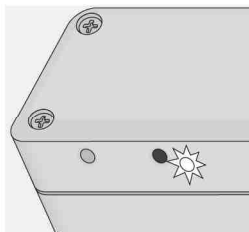
The device has been assigned to the Z-Wave network. LED programming is off.



The device has not been assigned to the Z-Wave network. LED programming is on.



Overload/closing the window signalling. The control LED blinks three times.



End position reached by the actuator / window opening signalling. The control LED blinks once.



Programming and control LEDs are placed inside the housing and are not directly visible.

## SAFETY RULES



**CAUTION! Danger of crushing! When closing the window, the actuator exerts the force of 250N (app. 25 kg)!**



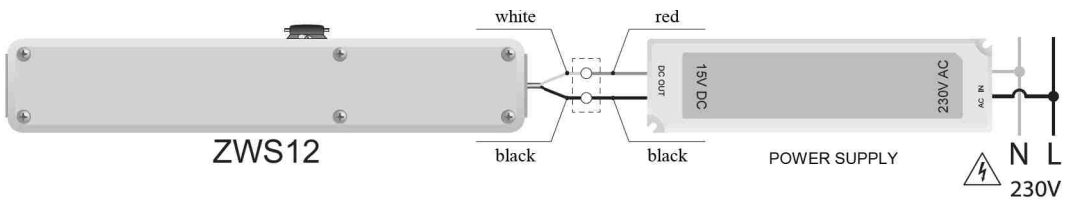
**In case the actuator is connected to the weather module, the window may close automatically (without warning) when the weather changes!**

When installing the ZWS12 actuator it is required to observe the following recommendations:

- Safety requirements should be particularly respected. The use of the electric mechanical actuator installed in order to operate the window creates a risk of injury. Although the mechanism of the actuator is equipped with an overload switch, forces present there are strong enough to cause physical injuries. When closing, the actuator exerts the force of 250N (app. 25 kg)!
- If the actuator is easily accessible, e.g. the lower window edge is situated lower than 2.50m above the floor level, then special safety measures should be adopted so as to prevent health hazards.
- This equipment is not designed for use by people (including children) with limited physical, sensory or mental ability, or by people that do not have experience or knowledge of the equipment, unless it is done under supervision or according to the product original user manual provided by a person responsible for their safety. Do not allow children to play with the equipment.
- After unpacking, check the actuator's elements for any signs of mechanical damage.
- Installation should be carried out in accordance with manufacturer's instructions by a qualified professional.
- Before connecting the window make sure that the power supply corresponds with the voltage specified on the data plate.
- Plastic containers used for packing should be stored out of children reach as they may be a potential source of danger.
- Keep controllers out of children reach.
- The window should be used according to its intended design. FAKRO shall not be responsible for any consequences being the result of improper actuator use.
- Any activities related to cleaning, adjustment or dismantling the electric parts of the actuator should be preceded with disconnecting it from the power supply.
- Electric parts must not be washed using solvent-based substances or open stream of water (do not immerse in water).
- Any repairs of the device should be carried out by service authorised by the manufacturer.
- The cross-section of power supply cables should increase with the increase in the length of these cables.

## WIRING DIAGRAM

The actuator should be connected according to the diagram below. The power supply used should have a rated power not less than the actuator's rated power (minimum 12W). The voltage of the power supply should be 15V.



## MANUAL CONTROL



Control the actuator by pressing the manual control button. 1. Start, 2. Stop, 3. Start in the opposite direction...

## PROGRAMMING

For programming information refer to the user manual of the controller concerned.



**CONTROLLER** – Z-Wave device such as remote control, module, wall switch, Internet gateway.

ADD TO Z-WAVE NETWORK  
ADD TO GROUP  
REMOVE DEVICE FROM Z-WAVE NETWORK  
REMOVE DEVICE FROM GROUP  
etc.

Run selected function on the Z-Wave network.



Press the programming button on the ZWS12 actuator in time specified by the controller.

The programming result will be signalled on the controller.

## CALIBRATION

The ZWS12 actuator can specify the position of the chain with an accuracy of 1%. To make this possible, the calibration process must be carried out after the actuator has been installed. Before the actuator is calibrated, the motor status LED is permanently on.

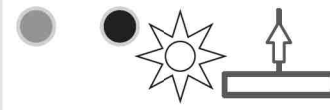
The limit values of the actuator are determined in two ways:

- full opening – by means of the limit switch,
- full closing – by means of current overload.

It is possible to carry out the calibration procedure by changing the configuration parameter (for detailed information see "Z-Wave configuration parameters") in advanced information.



Hold the programming and manual control buttons at the same time. The actuator will close automatically...



...and then it will open automatically. Once the full opening has been reached, the calibration process will be completed.



Once the calibration process is finished, the actuator will close at a slower speed.



The calibration process can be stopped by pressing the manual control button.



Omitting the calibration process will not allow the full use of the actuator's. Not calibrated actuator works only at a maximum speed.

## COMPATIBILITY WITH Z-WAVE DEVICES

The Z-Wave allows to integrate devices of different manufacturers which can work in different groups: lighting, heating, domestic automatic control, etc. The Z-Wave devices operate as repeaters in the network which extends the communication range of radio waves.

This product is compatible with other certified Z-Wave devices of other manufacturers. All battery-free devices of different manufacturers operating in one Z-Wave network can route through other devices, which can increase the range.

### Z-Wave Plus Product in Secure mode.

This device is secured Z-Wave Plus product that can use encrypted Z-Wave Plus messages to communicate with other Z-Wave Plus products with security features.



All information on adding devices to the Z-Wave network in controllers offered by other manufacturers can be found in user manuals of those products.

## ADVANCED INFORMATION

### ASSOCIATION GROUPS

1. Life Line – group for reporting the position of the actuator after each stop and receiving information about the alarm (overload). A maximum of 1 device can be in the group.
2. Basic Repeat – group used for sending received commands of movement (basic set) to devices belonging to this group. A maximum of 5 devices can be in the group.
3. Multilevel Repeat – group used for sending received commands of movement (SWITCH MULTILEVEL SET, SWITCH MULTILEVEL START LEVEL CHANGE, SWITCH MULTILEVEL STOP LEVEL CHANGE) to devices belonging to those groups. A maximum of 5 devices can be in the group.

## Z-WAVE CONFIGURATION PARAMETERS

Parameter No.	Value	Default value	Size	Description
7	1 2 3 4	2	1	Chain extension speed, where the value: 1 – the slowest 4 – the fastest
12	1 2 3	1	1	1 – calibrated 2 – out of calibration 3 – encoder error
13	1 2	1	1	1 – FF go to maximum 2 – FF go to previous position
15	0 120	0	1	Close after time (minute), so-called ventilation
99	1 2	1	1	1 – default parameters 2 – parameters other than the default
100	1 2	1	1	2 – autoexclusion

## ALARMS AND NOTIFICATIONS

Notification type	Event
Water Alarm	Water Leak detected, Unknow Location
Power Management	Over-load detected

## COMMAND CLASSES

Command Classes	Role	
	Support	Control
Command Class Z-Wave+ Info v2	ok	
Command Class Basic v1	ok	ok
Command Class Version v2	ok	
Command Class Manufacturer Specific v2	ok	
Command Class Device Reset Locally v1	ok	
Command Class Association v2	ok	
Command Class Association Group Info v1	ok	
Command Class Powerlevel v1	ok	
Command Class Switch Binary v1	ok	
Command Class Switch Multilevel v3	ok	ok
Command Class Switch All v1	ok	
Command Class Configuration v1	ok	
Command Class Notification v3	ok	
Command Class Node Naming v1	ok	
Command Class Security v1	ok	

## MANUFACTURER SPECIFIC REPORT

Parameter	Value
Manufacturer ID	0x0085
Product Type ID	0x0002
Product ID	0x0010

## ADVANCED FUNCTIONS

Function	Description	LED indicator	
		Motor status	Z-Wave network status
Resetting the device locally	The Z-Wave device reset without using the Z-Wave controller. Press the P button quickly 5 times, the actuator will be removed from the Z-Wave network, the default parameters, names and locations will be restored.	-	LED is on
Resetting parameters locally	Press the P button quickly 3 times on the actuator.	-	Blinking 5 times
Autoinclusion	Adding a hard-to-access device to the Z-Wave network. Each time the power is switched on, the actuator enters the Autoinclusion mode provided that it is not assigned to the Z-Wave network. The mode is active for up to 10 minutes.	-	Blinking for 10 minutes

## WARRANTY

The manufacturer guarantees correct device functioning. It also undertakes to repair or replace faulty device if damage is a result of material or structural faults. The warranty period is 24 months from the date of purchase, fulfilling the following conditions:

- Installation has been performed as per manufacturer recommendations.
- Seals remain intact and no authorised structural changes have been made.
- The device has been used in accordance with its intended use as per user manual.
- Damage is not a result of improperly made electrical system or atmospheric phenomena.
- The manufacturer is not liable for damage which occurred as a result of improper use or mechanical damage.
- In case of failure, the device must be submitted for repair with a Warranty Card.

Defects revealed within the warranty period will be removed free of charge no longer than 14 days after accepting the product for repair.

Warranty and post-warranty repairs are performed by the manufacturer i.e. FAKRO PP. Sp. z o.o.

Producent:

**FAKRO Sp. z o.o.**

Ul. Węgierska 144A, 33-300 Nowy Sącz

Polska

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tel.+48 18 444 0 444, fax. +48 18 444 0 333

Quality certificate:

Device

---

Model

---

Serial number

---

Seller

---

Address

---

Purchase date

---

Invoice No.

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Signature (stamp) of person installing a device

