ZWS12, ZWS230 motors user manual

Contents

1 Safety rules 2
2 Description 3
3 Programming the device – INCLUDE & ASSOCIATE....4
4 Programming the device – DELETE & EXCLUDE. 4
5 Interoperability of devices different manufacturers....6
6 Including ZWS actuator into a third-party network....6
7 Reset (factory default)....6
8 Special functions....6
8.1 “PROTECTION” 6
8.2 “ASSOCIATION” 6
8.3 “All ON or All OFF” 6
8.4 “SECURITY”....6
9 Manual operating 7
10 Remote control....7
11 Technical parameters 8
12 Signalling description – LEDs....8
13 Warranty....8

FAKRO PP Sp. z o.o.
ul. Węgierska 144A
33-300 Nowy Sacz
Polska
www.fakro.com
tel. +48 18 444 0 444
fax. +48 18 444 0 333

 ©2012, FAKRO

1 Safety rules

Please read carefully the instructions below before proceeding to the device installation so as to prevent electric shock, injury, etc.

When installing the mechanical motor, it is necessary to observe the following recommendations:

- Above all, follow the safety rules. The use of electric motors for roof window operating is connected with a risk of injury. Although, the motor is equipped with an overload switch, the forces which operate here are strong enough to cause injury.
- If the window equipped with an electric motor 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.
- After unpacking, check the motor elements for any signs of mechanical damage.
- Installation should be performed by a qualified person in accordance with manufacturer instructions.
- Before connecting the motor, make sure that the power voltage corresponds with motor voltage specified on the data plate.
- Connect the motor and verify its correct functioning by performing one full working cycle without any load (two-core cable – 12V DC motor, three-core cable – 230V AC). Leave the chain protruding by approximately 5cm.
- Plastic containers used for packing should be stored out of children reach as they may be a potential source of danger.
- The motor should be used according to its intended design. The FAKRO Company shall not be responsible for any consequences being the result of improper motor use.
- Any activities relating to cleaning, adjustment or dismantling the motor should be preceded with disconnecting the power supply.
- The motor cannot be washed using solvent-based substances or open stream of water (do not immerse in water).
- Any repairs of the motor should be carried out by service authorised by the manufacturer
- Electric wires supplying electricity to the power source must have suitable area ($2x1mm^2$). Permissible cable length for the mentions area is 30mb.
- The motor has been designed for installation inside the room.
- The motor cannot be used as a mechanism for operating the sashes of smoke ventilation windows (FAKRO window).

WARNING!!!

Danger of crashing. While closing, the motor exerts the force of 250N (app. 25kg).

 ©2012, FAKRO

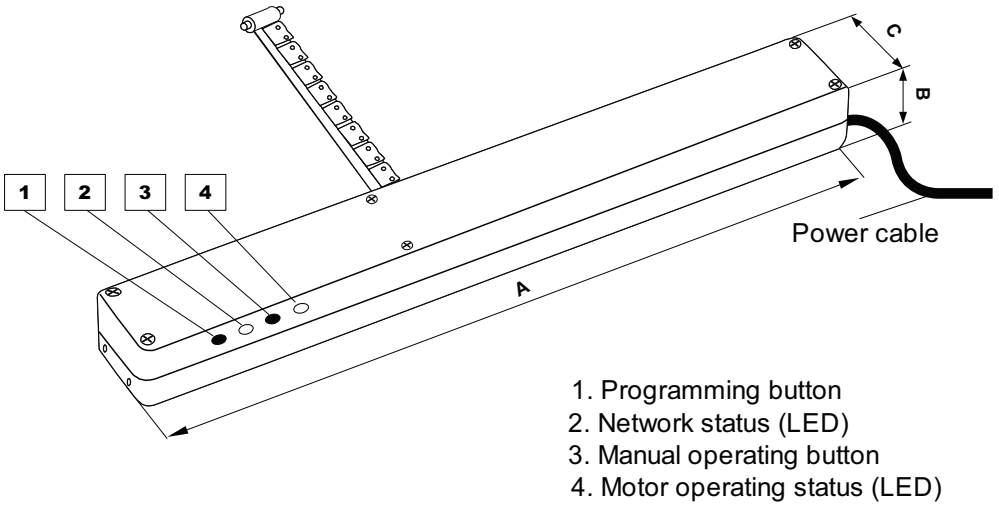
2 Description

The ZWS motors are intended for operating FAKRO roof windows and adapted for use with wireless remote control system elements offered by FAKRO. The ZWS motors are equipped with a two-way "Z-Wave" communication radio module. For communication, the Z-Wave exploits radio wave frequency of 868.42MHz. The ZWS motors are products which can cooperated in the SECURE type network (encrypted transmission). The condition for the use of encryption is to have a controller that supports such transmission. The functionality of the device is the same whether it is included as secured or unsecured in the network.

The ZWS motors are equipped with two limit switches:

- limit switch at maximum chain travel position,
- overload limit in both directions (used mainly when closing the window).

In order to be able to operate FAKRO roof windows by means of ZWS motors, they must be installed according to the picture installation manual included in the product package. Then, the motors should be programmed to cooperate with one of the controllers (e.g. ZWP 15 remote control, ZWK15 or ZWK1 keyboard) offered by FAKRO or any other controller equipped with the Z-Wave module – see sections 3÷8. In Fig. 1, there is presented a general view of the ZWS motor with description of available buttons and indicators.



Section	ZWS12	ZWS230
A	262 mm	362 mm
B	33.5 mm	33.5 mm
C	47 mm	47 mm

Figure 1: ZWS12, ZWS230 motors

 ©2012, FAKRO

3 Programming the device – *INCLUDE & ASSOCIATE.*

For the device to be able to communicate within the Z-Wave network, it must be added to this network and assigned a particular number (Node ID). The device can be added to the network only if it is no longer a part of other network. In order to be able to add the device to other network, it is necessary to delete it first from the existing network or restore factory settings, (read chapter 7), by means of any basic controller. Readiness for including in the network is indicated by the status LED. Lit LED indicates that the device does not belong to any network.

1. Include the device (using the **"*INCLUDE*"** function*)* to a selected network. The standard procedure is presented in *Figure 2*;

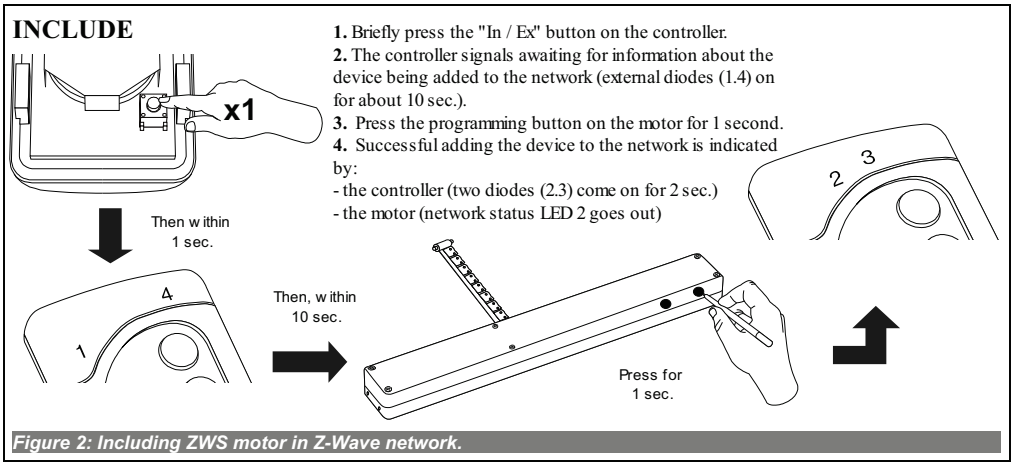


Figure 2: Including ZWS motor in Z-Wave network.

2. Associating the motor with a pair of buttons on the controller (using **"ASSOCIATE"** function). The standard procedure is presented in *Figure 3.* **For some controllers it is possible to perform both functions (INCLUDE and ASSOCIATE) at one go**.

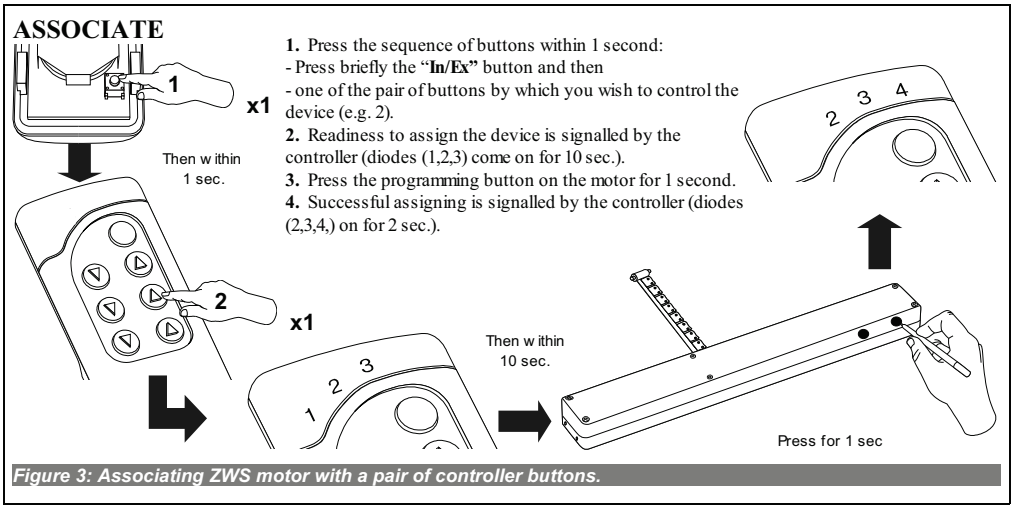


Figure 3: Associating ZWS motor with a pair of controller buttons.

Information on how to initiate and perform the "Include" and "Associate" functions with the use of controllers of other manufacturers is to be found in the instructions for these devices.

4 Programming the device – *DELETE & EXCLUDE.*

In some cases (change of place of installation, replacing faulty device), it is necessary to delete the device both from the memory of controllers (deleting associations with the buttons – DELETE) and the network (EXLUDE) so as to prevent errors while command sending (to not existing devices) and excessive energy drainage from the batteries in the portable controllers.

Do not physically remove devices from the network without their prior deleting from the memory of controllers with the use of DELETE and EXCLUDE functions as it may lead to significant delays in device functioning in the network and quick battery ruining down in the portable controllers.

The order of execution of the functions is also very important. First, perform the DELETE function and at the very end the EXCLUDE function.

1. Deleting device association with a pair of buttons („**DELETE**"). After completing the "**DELETE**" function, the device is still a part of the network until the "**EXCLUDE**" function is performed.

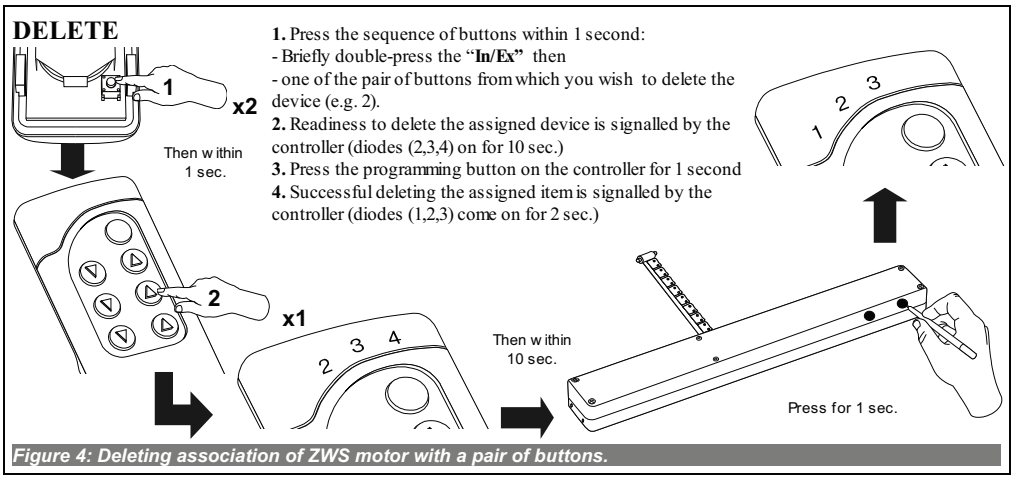


Figure 4: Deleting association of ZWS motor with a pair of buttons.

2. Excluding the device (**"EXCLUDE"**) from the Z-Wave network. The device excluded from the network does not have Node ID and can be associated with another network. On the motor this state is signalled by the network status diode (LED No. 2), which flashes continuously.

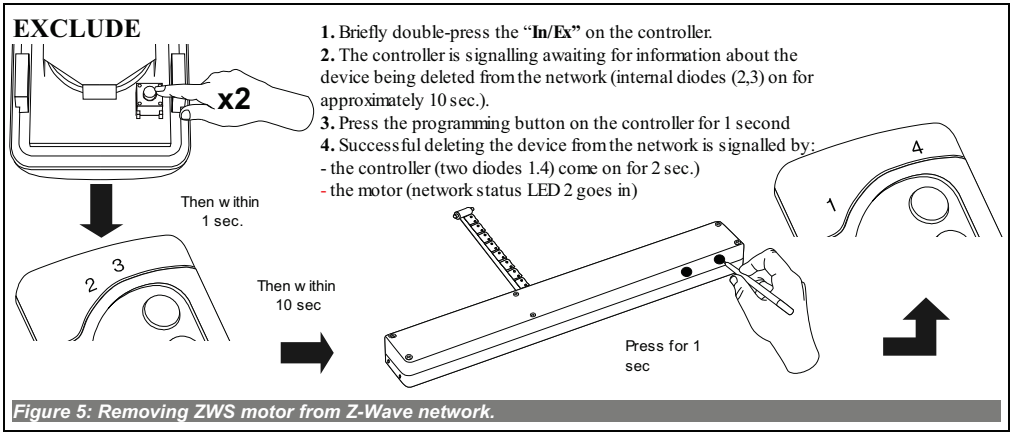


Figure 5: Removing ZWS motor from Z-Wave network.

Information on how to initiate and perform the "Delete" and "Exclude" functions by the controllers of other producers is to be found in the manuals for these devices.

 ©2012, FAKRO

5 Interoperability of devices different manufacturers

The Z-Wave network allows integrating devices of different manufacturers which can work in different groups, light, heating, household automatics, etc. The Z-Wave devices operate as repeaters in the network which extends the communication range of radio waves. The more devices in the network the more reliable and more resistant to interference operating of the devices in the network.

6 Including ZWS actuator into a third-party network

Start the **"INCLUDE"** function on the controller which is able to perform inclusion procedure for desired network and press "**Programming**" button on the ZWS to be included.

Note: For information on handling or initiation the inclusion function of products of another manufacturers, please read the documents of the respective manufacturer.

7 Reset (factory default)

Sometimes it is necessary to reset ZWS to the factory settings and deleting all network information as well as group associations. For resetting, a primary controller (able to include/exclude) is needed. For ZWS Reset function is synonymous with **"EXCLUDE"** function from the network

Note: A successful reset of the ZWS is signalled by network status diode continuous glow

8 Special functions

8.1 "PROTECTION"

This function is used to protect the motor to prevent accidental starting by children. Three levels of protection can be defined by the controller which supports this function.

I. Unprotected – the motor can be controlled either manually or by radio.

II. Protection by sequence – after pressing the programming button, manual control is possible for 30 sec. Status is signalled by network status diode blinking. Radio control is possible.

III. No operation possible – controlling actuator blocked locally until the protection status is changed. Status is signalled by blinking of the network status diode. Radio control is possible.

Note: Information on how to initiate and define levels in the "PROTECTION" function with use of controllers of different manufacturers are to be found in manuals for these devices.

8.2 "ASSOCIATION"

The ZWS motor fitted in the Electro Z-Wave window can send the command "**Close**" to other actuators in the network. For such solution to work, it is necessary to call up the **"ASSAIN A ROUTE"** function with the use of the controller. Below, the standard (model) procedure which may differ slightly for devices from other manufacturers:

Initiate the "**ASSAIN A ROUTE**" procedure by means of the controller and then press the programming button on the device which is to be controlled (e.g. without the rain sensor). Subsequently, press the programming button on the motor which is to send out the "close" command.

Note: Information on how to initiate the "ASSAIN A ROUTE" function with the use of devices supplied by other manufacturers is to be found in the manuals for these specific devices. The motor added to the network as SECURE (encrypted transmission), may in case of rain send out "close" command to other "SECURE" as well as "NON-SECURE" devices.

8.3 "All ON or All OFF"

It is possible to define whether the motor is to respect the commands "Close all" and "Open all".

Note: Instructions on how to define respecting the "Close all" and "Open all" functions are to be found in manuals for specific devices.

8.4 "SECURITY"

The ZWS motor make it possible to use encrypted command sending. Encrypting ensures additional security of transmission between devices in the network.

Note: In order to use the possibility of encrypted transmission in the network, there are required other devices (primarily controllers), offering this option. It will not be possible to control the motor added to the network as SECURE if it is not able to support secure transmission.

 ©2012, FAKRO

9 Manual operating

The manual operating button allows for control of the ZWS motor directly when connected to power. The buttons work in a sequential mode, e.g. start, stop, start in the opposite direction, stop – etc.

1. First pressing the button after connecting power will cause the chain to slide out,
2. Second pressing the button will stop the motor,
3. Another pressing the button will cause closing the motor (window).

Note: Observe the network Status LED. Its blinking indicates that the "PROTECTION" function has been activated (see article 8.1) and may mean that manual control of the motor is not possible.

10 Remote control

Note!!! Each command sent from the remote control to the accessory is preceded by a period of accessory awakening. This period usually lasts about 0.3 s. In practice, this manifest in delayed reaction lasting for about 0.5 s.

When remote controlling device, 5 commands can be used:

- **Close** – in ZWP, ZWK controllers is activated after short (about 0.5 sec.) pressing of „close" button on remote and causes accessories launching in the closing direction until the engine reaches the end position, which means device complete closure
- **Open** – in ZWP, ZWK controllers is activated after short (about 0.5 sec.) pressing of „open" button on remote and causes accessories launching in the opening direction until the engine reaches the end position, which means device complete opening
- **Start to close** – in ZWP, ZWK controllers is activated after longer (more than 0.5 sec.) holding of „close" button and causes accessories launching in the closing direction until releasing „close" button
- **Start to open** – in ZWP, ZWK controllers is activated after longer (more than 0.5 sec) holding of „open" button and causes accessories launching in the opening direction until releasing „open" button
- **Stop closing/opening** – in ZWP, ZWK controllers is activated with releasing of „open" button or „close" button with earlier issued command „Start closing"/„Start opening". In practice it means that in order to stop device at any position, it is necessary to press particular button and hold until reaching the desired position, or launching accessories in desired direction by short pressing of appropriate button and then stopping it by pressing (longer than 0.5 sec) and then releasing of the same button.

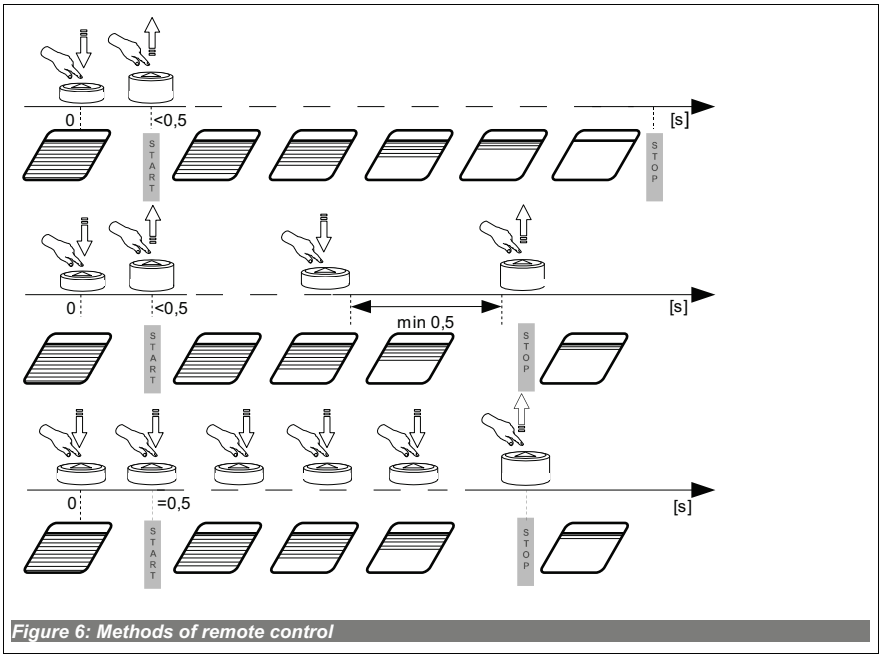


Figure 6: Methods of remote control

 ©2012, FAKRO

11 Technical parameters

Technical Parameters		
Parameter	***ZWS12***	***ZWS230***
Chain reach	240 mm	360 mm
Output power	9 W	15W
Rated current	0.72 A	0.12 A
Standby current	0.03 A	0.03 A
Current limit	YES	YES
Chain unfolding rate	7.5 mm/s	9.7 mm/s
Chain pushing force	200 N	200 N
Closing force	200 N	200 N
Working temperature	(-10°C) do (65°C)	(-10°C) do (65°C)
Power cable	2 x 0.75 mm^2 (0,4 m)	3 x 0.75 mm^2 (1,5 m)
Power voltage	12V DC	90 - 230V AC
Weight	0.850 kg	0.940 kg

12 Signalling description – LEDs

Signalling (LED)	**ZWS12, ZWS230**	
	No. 3 – motor status	**No. 4 – network status**
Diode on for 2-3 sec.	Overload occurred (force> 20 kg) signalling always after closing the window	-
Diode continuously on	-	Device is not associated with any network. Diode goes out after device association with the network.
Diode is on continuously	-	Device is in the "Protection" mode. Both modes „Protected by sequence" and „no operation possible" is signalled in the same way. See section 8.1.

13 Warranty

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

- Installation has been performed by an authorised individual, as per manufacturer recommendations.
- Seals remain intact and no unauthorised 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.

Quality Certificate:

Device

Model.....

Serial Number.....

Seller.....

Address.....

Date of purchase.....

.....

Signature (stamp) of installing person

 ©2012, FAKRO