

User manual for actuator ZWS12

Contents

1. Safety standards	2
2. Description	3
3. Programming the appliance and description of signals – light – emitting diode (LED).....	4
4. Association Groups.....	5
5. Compatibility of other producers' appliances in Z-Wave.	5
6. Z-Wave configuration parameters.....	6
7. Alarms and Notifications.....	7
8. Technical parameters.....	7
9. Command classes.....	8
10. Manufacturer Specific Report.....	8
11. Indicator Command Class.....	8
12. Basic Command Class.....	9
13. SmartStart.....	9
14. Warranty.....	10

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1. Safety standards

Please carefully read the instructions below before installing the actuator to avoid electric shocks, laceration, etc.

- While installing the electric actuator it is essential to comply with the following rules:
- Firstly, after unpacking, check that the actuator does not show any signs of mechanical damage.
- Installation should be performed by a qualified person according to the producer's user manual.
- Before connecting the actuator, make sure that the supporting voltage is compatible with the voltage of the actuator mentioned on the rated plate.
- Connect the actuator and launch one cycle of work to verify whether it works correctly (dual-core wire - 15V DC).
- Plastic containers used for packing should be kept out of children's reach as they pose a potential threat.
- The actuator should be used only for its purpose. FAKRO is not responsible for any damage of the actuator resulting from improper use.
- Any actions related to cleaning, adjusting or disassembling of the electric actuator should be preceded by disconnecting the power supply.
- Do not use any solvent-like agents, or a water jet (do not dip in water).
- All repairs should be made by a service authorized by the producer.
- The actuator is for external use only.

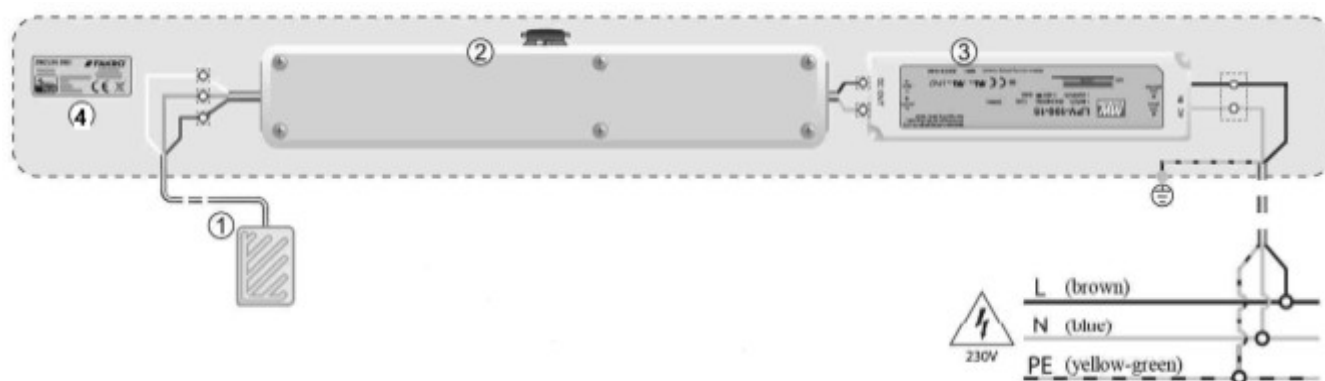
2. Description.

ZWS12 actuators are only for external installation with Fakro roof windows. They are compatible with Fakro wireless remote controls or other remote controls marked with the **Z-Wave®** logo produced by other companies. actuators are equipped with a two-way module of radio communication. Z-Wave uses 868,42 MHz radio waves.

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 use the appliance, it is essential to install it in accordance with the figure manual attached to its package. Programming should be done with any of the remote controls available from Fakro or any remote controls equipped with the Z-Wave logo produced by other companies. *Figure 1* shows a general view of the ZWS12 actuator with a description of the buttons and indicators. In the ZWS12 actuator the controlling module is located under the right-side body cover - see *Figure 1*.



- 1. Rain sensor**
- 2. Chain actuator**
- 3. Hermetic power supply**
- 4. Data plate**

Wiring diagram

3. Programming the appliance and description of signals – light – emitting diode (LED).

In order for the appliance to communicate with the Z-Wave network, it is essential to connect to the network and give the appliance a special number (Node ID). The appliance can be added to a network, as long as it does not belong to another one. In order to add the appliance to a network, it should firstly be deleted from any network it belongs to, or restored to factory settings. This can be done with the use of any primary controller. The network status diode indicates when the appliance is ready to be linked to the network. This diode does not belong to any network.

In some cases (changing the location of an installation, or changing a damaged appliance), it is necessary to delete the appliance from the controllers' memory, as well as from the network in order to avoid errors and save the batteries of portable controllers.

Do not physically remove the appliance until it has been deleted from the controller's memory. Improper usage can cause delays when trying to use the appliance and will cause the batteries of portable controllers to run out quickly.

Control Panel



Basic Functions



Press the button 1 time. Manual control.



Quickly double-press button P (2 press within 1 second. Add or Remove mode.

Additional Functions



Press button P 5 times with a quick double-press (5x/2x) to restore factory defaults and remove the device from the network

Indicators



Red LED flashes 3 times. Overload, reaching end position.



Red LED flashes 1 times. Low current, reaching end position.



Green LED is solid (on). Device not added (included) in the Z-wave network.



Green LED is off. Device added in the Z-wave network.



Green LED flashes for 30 s. Function Learn Mode is activated.

Add / Remove / send NIF

→ quickly double-press button P (2× within 1 s)

Factory Default Reset

To perform factory reset (restore default parameters and remove from network):

- Quickly double-press button P (2× within 1 s) – green LED flashes once as confirmation
- Repeat this double-press 5 times within approximately 5 seconds
- After the 5th double-press the green LED lights solid
- All parameters are restored to factory defaults and the device is excluded from the network

4. Association Groups.

There are four association groups in actuator ZWS12:

Group 1 – Lifeline (max. 5 nodes)

Switch Multilevel Report sends after every movement/stop and notifications on alarms (overload and rain).

Window Covering Report sends after Window Covering Set.

Indicator Report frame is send to LifeLine after NWE Mode ended(Led Z-WAVE stop blinking

Device reset locally notification send after factory reset

Group 2 – Basic Repeat (max. 5 nodes)

Repeats received Basic Set commands to associated devices.

Group 3 – Multilevel Repeat (max. 5 nodes)

Repeats received Switch Multilevel Set/Switch Multilevel Start/Stop Level Change commands to associated devices.

Group 4 – Basic Rain (max. 5 nodes)

Sends Basic Set 0x00 when rain sensor is activated.

5. Compatibility of other producers' appliances in Z-Wave.

Z-Wave allows for the integration of other producers' appliances for lighting, heating, domestic automatic appliances, etc. The Z-Wave works in the network as a “repeater”, which enlarges the range of radio communication. The more appliances in the network, the more resistant to disordered activities in the network. This product can be operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

Launch the “INCLUDE” procedure with a controller of the existing network, and then press the “Programming button” located on the actuator which you want to link to the network.

Z-Wave Plus® Secure Enabled Product

This device is a security enabled Z-Wave Plus product that is able to use encrypted Z-Wave Plus messages to communicate to other security enabled Z-Wave Plus products.

This device must be used in conjunction with a Security Enabled Z-Wave Controller in order to fully utilize all implemented functions.

ATTENTION: Full and secure operation of this device requires the use of a Z-Wave network primary controller (gateway) that supports the Security 2 (S2) protocol.

This device utilizes the Access Control Security Key. Using older controllers without S2 support may prevent its full configuration and secure operation.

6. Z-Wave configuration parameters.

Parameter number	Description (Effect on the Product)	Default Value	Size (Bytes)	Range / Allowed values
7 (0x07)	Motor speed	2	1	1 = slowest, 2 = medium (default), 3 = fast, 4 = fastest
8 (0x08)	Motor speed when rain sensor is triggered	2	1	1 = slowest, 2 = medium (default), 3 = fast, 4 = fastest
15 (0x0F)	Ventilation function (close window after time)	0	1	0–255 minutes 0 = disabled
76 (0x4C)	Overload Release Time (Time the actuator recoils/releases power after detecting an overload/blockage)	10	1	1–255 ms
77 (0x4D)	Undercurrent Threshold (Close) (Current level below which the motor is considered unloaded in the closing direction).	30	1	1–255 mA
78 (0x4E)	Undercurrent Threshold (Open) (Current level below which the motor is considered unloaded in the opening direction).	30	1	1–255 mA
79 (0x4F)	Overload current threshold closing direction	105	1	1-255 (x10 mA)
80 (0x50)	Overload current threshold opening direction	137	1	1-255 (x10 mA)

7. Alarms and Notifications.

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

- Trigger overload alarm
→ physically block chain during closing when opening >20 %
- Trigger rain alarm
→ wet ZRD12 rain sensor

8. Technical parameters.

Technical Parameters	
Chain reach	240 mm
Output power	9 W
Rated current	0.72 A
Standby current	0.006 A
Current limit	YES
Chain unfolding rate	7.5 mm
Chain pushing force	200 N
Closing force	200 N
Working temperature	(-10°C) do (65°C)
Power cable	2 x 0.75 mm ² (0,4 m)
Power voltage	15V DC
Weight	0.850 kg

9. Command classes.

Command Class	Version
Non – Secure Command Classes	
Z-Wave Plus Info	' v 2
Basic	'v 2
Transport Service	' v 2
Security	' v 1
Security 2	' v 1
Supervision	' v 1
Secure (S2) Command Classes	
Switch Multilevel	' v 4
Window Covering	' v 1
Association	' v 2
Multi Channel Association	' v 3
Association Group Info	' v 3
Notification	' v 8
Version	' v 3
Manufacturer Specific	' v 2
Device Reset Locally	' v 1
Indicator	' v 3
Powerlevel	' v 1
Firmware Update Md	' v 5
Node Naming	' v 1
Configuration	' v 4

10. Manufacturer Specific Report.

Manufacturer Specific Report	
Parameter	Value
Manufacturer ID	0x0085
Product Type ID	0x0002
Product ID	0x0111

11. Indicator Command Class.

This allows the user to physically identify the correct actuator among multiple installed devices. The device fully supports Indicator Command Class v3 and correctly responds to the standard.

12. Basic Command Class.

Basic Set 0x00	→ close window (level 0 %)
Basic Set 0x01–0x63	→ set window position to corresponding level (1–99 %)
Basic Set 0xFF	→ go to last remembered non-zero position (resume previous level before closing)
Basic Get	→ returns current window position as Basic Report: 0x00–0x63 = current level
Basic Report	→ reports current position values

This mapping ensures full compatibility with legacy controllers and correct behaviour of “ON = resume last position” functionality.

13. SmartStart.

SmartStart Inclusion Process for ZWS12

This section describes how to add the ZWS12 actuator to a Z-Wave network using SmartStart. SmartStart allows automatic inclusion when the device is powered on, provided the controller supports S2 and the DSK is provisioned.

Location of DSK and QR Code



- The QR code and full DSK string (8 groups of 5 digits) are printed on the front label of the actuator (visible without opening the device).
- The PIN Code is located below the QR code for manual entry.

Step-by-Step Process

1. In your Z-Wave controller app (e.g. Home Assistant, Fibaro Home Center, SmartThings):
 - Go to the SmartStart inclusion mode.
 - Scan the QR code on the ZWS12 label using the controller's camera or app.
 - Alternatively, manually enter the full DSK or PIN if QR scan is not available.

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2. Power on the ZWS12 actuator (connect 15 V DC supply).
 - The green LED is solid ON
 - The device automatically joins the network if the DSK matches.

 3. Wait for confirmation in the controller app (usually 10–30 seconds).
 - If successful, green LED turns OFF (device included).

14. Warranty.

The producer guarantees a high quality of the appliance. It pledges to repair or replace damage element, if the damage is caused by defective materials or construction. The warranty is valid within 24 months from the date of selling due to the following conditions:

- The installation process was proceeded by qualified and authorized person according to the producer requirements.
- The seals were not affected and there were not introduced any changes in construction.
- The appliance was used according to its purpose and in comply with user manual.
- Damage is not an effect of improper power supply installation or an atmospheric conditions.
- The producer is not responsible for any damages arising of improper using and for mechanic damages.

In case of a damage the appliance should be delivered along with the Warranty Card. During the warranty period all damages and defections are recovered for free within 15 labour-days. Warranty and after-warranty repairs are made by the producer FAKRO Ltd.

Quality certificate:

Appliance

Model.....

Serial Number.....

Saleperson.....

Address.....

Date of purchase.....

.....

Signature (stamp) of installing person