ZWS12n AUS chain actuator user manual
(Motor Class C)

Contents

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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 – 15V 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!!!

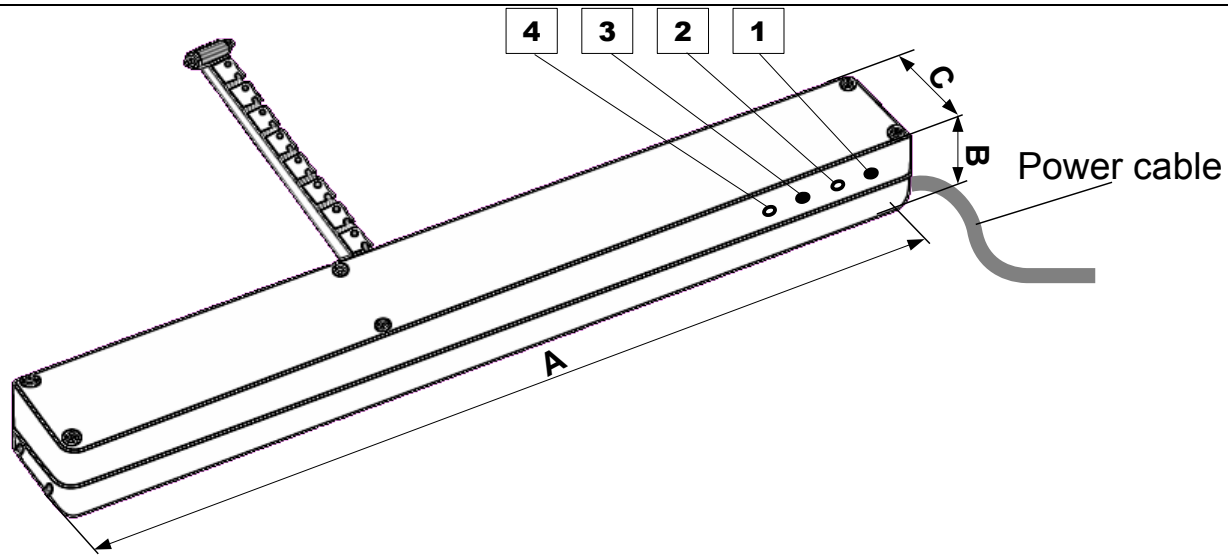
Danger of crashing. While closing, the motor exerts the force of 250N (app. 25kg).

Description

The ZWS12n AUS motors are intended to operate with windows and adapted to cooperate with wireless remote control systems offered by FAKRO and by others manufacturers offering products with logo Z-Wave. The ZWS12n AUS motors are equipped with a two-way "Z-Wave" communication radio module. For communication, the Z-Wave exploits radio wave frequency of 921,4 MHz.

The ZWS12n AUS motors are equipped with two limits:
- limit switch at maximum chain travel position,
- overload limit at folded chain position.

In order to be able to operate ZWS12n AUS motors, they must be installed according to the picture installation manual included in the product package. Subsequently, the motors should be programmed to work with one of the controllers (e.g. ZWP10 AUS remote control, ZWK10 AUS keyboard) offered by FAKRO – see section 3.
In Figure 1 there is presented a general view of the ZWS12n motor with description of available buttons and indicators.



1. Programming button Node INFO
2. Network status (LED)
3. Manual operating button
4. Motor operating status (LED)

Section	ZWS12n AUS
A	262 mm
B	33.5 mm
C	47 mm

Figure 1: ZWS12n AUS motor

Interoperability of devices different manufacturers

The Z-Wave allows you to integrate devices from different manufacturers working in different functional groups, such as light, heating, home automation, ect. Z-Wave devices, are acting as repeaters in the network and increases the range of radio communication. The more devices on the networks, the more stable and more resistant to distortion networks are.

Including ZWS12n AUS actuator into Z-Wave network

Start the **INCLUDE** procedure on the **"PRIMARY"** controller and press **PROGRAMMING** button on the ZWS12n actuator to be included.

Note !!! For information about how to activate INCLUSION procedure, using products of another manufacturers, please read the manuals of the respective manufacturer.

Actuator calibration

ZWS12n AUS actuator can determine precisely its position from 0-100%. It is possible to open the actuator to any desired position and also check actual position with the resolution of 100 steps (step - chain unfolding rate). For the entire working range of chain (250mm), one step amounts 2.5mm (250/100).
Position 100% (completely open) is always clearly determined by the limit switch, while position 0% (completely closed) is variable and depend actuator instalation
Position completely close is determined by occurrence of excessive current, when the actuator is working in direction "Close". In order to determine range of work properly, it is necessary to perform calibration after installation of actuator in the window. In order to perform calibration, the following points must be realized:

Note!!! If the actuator is not calibrated LED 4 Motor operating status is permanently illuminated.

Note!!! During calibration actuator will not respond to any control commands!!!

- Press and hold "Node info" button, then still holding " Node info" button, press operating button on the actuator
- The actuator will open little bit, and closes automatically. After reaching "Close" position, Led will signals beginning of calibration process (single blink of the diode)
- The actuator opens automatically than signals position completely open (single blink of the diode)
- After storing the extreme position of the actuator closes automatically with reduced speed.

Note!!! You can initiate the calibration procedure using the configuration parameter. For details, see "Configuration parameters"

Note!!! As long as the actuator is calibrated it is not possible to use the command "go to position". Only the commands Open, Close, Stop are possible

Note!!! If you miss the actuator calibration procedure, motor will try to automatically detect operating conditions and will automatically store the extreme positions

Indicators description – LEDs

No. 3 – Motor operating status	*No. 4 – Network status*	1. Reason	2. Reason
Triple flashing		Motor Overload - normal when closing	
Steady light		Motor not calibrated	Encoders malfuncion
Diode is blinking	Diode is blinking	Power level to low <10 VDC	
	Steady light	Device not included to network	
Diode is blinking		The device is in protected mode. Both (Protected by sequence and no operation possible) levels are signalized in the same way.	

Special functions – *PROTECTION, ASSOCIATION,ALL ON, ALL OFF*

PROTECTION - used to protect a device against unintentional operation e.g. by a child. Three levels can be set by any controller which supports this functionality.

Unprotected – motor can be operated manually as well as by remote control.

Protection by sequence – After pressing the programming button, the motor can be controlled manually for 30 seconds by means of buttons (see Figure 1.). Control via Z-Wave is possible.

No operation possible – local control locked. Control via Z-Wave is possible.

Note!!! The description for activation and deactivation of the protection function is described in detail in the manual instruction for controllers which are supporting this function.

"All ON or All OFF" - it is possible to define if device should respect "All close" (OFF) or "All Open" (ON) command.

Note!!! The description for activation and deactivation of the "ALL SWITCH" function is described in the user manual of the controllers supporting this function.

Configuration parameters

The device has the ability to define it's operating parameters. Configuration is done using parameters transmitted by radio. The list of available parameters, together with the description listed in the following table.

Parameter number	Function performed	Parameter possible set value	Parameter possible get value	Factory
7	Motor Speed	1 Minimum 2 Slow 3 Mid 4 Maximum	1 Minimum 2 Slow 3 Mid 4 Maximum	2
12	Calibration	1 – calibration start	1 – not calibrated 2 - calibrated 3 - encoders fault	1
15	Automatic closing after time	0 – auto close disable 1...255 – minutes to auto close	0 – auto close disabled 1...255 – minutes to auto close	0
99	Restoring factory settings	1 – parametr restore	1 – default state 2 – at least one parameter changed compare to factory settings	1

Motor speed - motor will maintain a constant operating speed specified by parameter. Speed reduction does not result decreasing the strength of the device. Slower motor generates less noise.

Calibration - when installed on a window, it is necessary to calibrate the actuator learned to extreme positions in which it will work. Calibration should be performed with a chain attached to the window. If you miss the actuator calibration procedure, motor will try to automatically detect operating conditions and will automatically store the extreme positions

Note!!! As long as the actuator is calibrated it is not possible to use the command "go to position". Only the commands Open, Close, Stop are is possible

Automatic closing after time - the user can define the time after which the actuator closes automatically. Time is counted each time after receiving the command - open

Note !!! Lack of power will terminate time counter so after power up actuator won't close automaticaly no mater what value is stored in parameter no.15.

Restoring factory settings - you can always go back to factory settings if confused in setting parameters.

Technical parameters

Parameters	
Parameter	***ZWS12n AUS***
Chain reach	250 mm
Output power	9 W
Rated current	0.72 A
Standby current	0.03 A
Current limit	YES
Chain unfolding rate	Adjustable
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	12V – 15 VDC
Weight	0.850 kg

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

