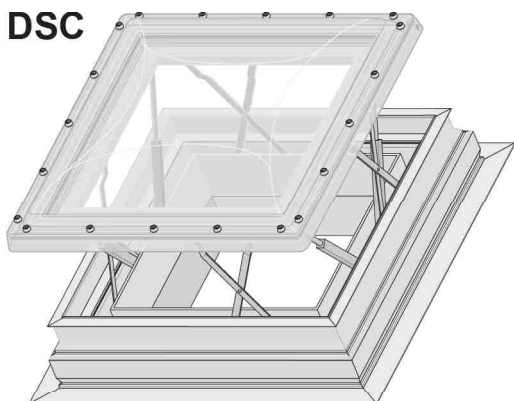
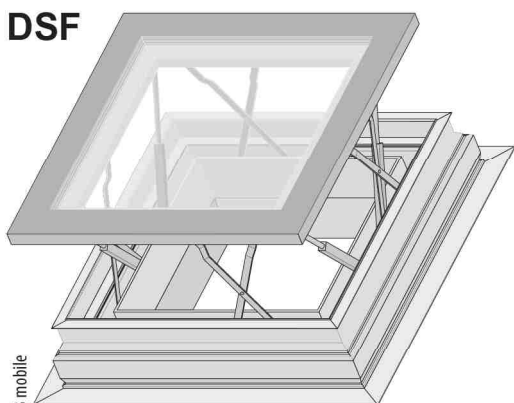


SMOKE VENTILATION WINDOW**DSC/DSF****DSC****DSF**

NC 498-GB_DSC-DSF_20.02.24_FAKRO_KB2113 mobile

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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.

SAFETY RULES



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

- Keep the original manual. It consists of three parts marked 1/3, 2/3, 3/3.
- To ensure safe operation and proper functioning of the product follow the instructions provided.
- After unpacking, check the DSC/DSF window elements for any signs of mechanical damage. Plastic containers used for packing should be stored out of children reach as they may be a potential source of danger.
- The window must not be used as a fall protection point.
- During installation, a protective zone must be designated around and above the window and in the room under the mounting opening, if possible, not less than a radius of 1.5 times greater than the window size, which will prevent unauthorised access to the area of work. The installation process must be carried out by people trained in this area, dealing with installation of electrical wiring and its maintenance, electricians and mechanics with knowledge of electric and mechanic actuator systems. Correct operation of the product and prevention of damage is guaranteed only when the installation process is carried out in compliance with included fitting instructions.. Use personal protective equipment during the installation process.
- Before connecting the DSC/DSF window, make sure that the power supply corresponds with motor voltage specified on the data plate.
- Electrical wiring must be carried out by authorised professionals only. When connecting devices follow the guidelines obligatory in a country concerned. If possible, a cable type should be agreed with local authorities and fire services. In particular, pay attention to low voltage cables system (24V DC) which must be separated from high voltage cables system. Cables must be installed in such a way that they are not sheared off, twisted or bent off during operation.
- Cables used: type, length and cross-section must be compliant with technical data. To enable control or repair of devices, the window must be disconnected from the power supply.
- In particular, pay attention to the actuator power supply voltage and rated power. It is strictly forbidden to connect 24V DC actuators to 230V AC.
- The type of window (number of actuators) must be selected for the climate zone. In areas with more heavy snowfall, a version with four actuators (DSF DU6 or DSC-C4 P2) should be used.
- It is not allowed to introduce any changes in the window design and install any internal and external accessories.
- It is required that the assembled spare parts (service parts) are suitable for the particular window type and completed if necessary. It is forbidden to use not original parts.
- Make sure that the actuator corresponds to applicable regulations. In particular, pay attention to opening range of the window, permissible sizes, opening time and opening speed, working temperature of the actuator and cables, cable cross-section in relation to its length and power consumption.
- Connect the DSC/DSF window and check the correct operation with one working cycle.

- This equipment can be used by children of at least 8 years of age and by persons with limited physical and mental capabilities and persons lacking experience and knowledge of the equipment only when supervision or instructions regarding safe operation of the equipment have been provided so that the threats involved can be understood. Children are not allowed to play with the equipment as well as to carry out cleaning and maintenance work.
- If the power cable (non-detachable) is damaged, it should be replaced by the manufacturer or a service centre employee or by a qualified person in order to avoid danger.
- Disconnecting means should be placed in a fixed electrical system in accordance with the regulations for such systems.
- When closing the window opened by a smoke ventilation system designate a protective zone around and above the window and in the room under the window, if possible, not less than a radius of 1.5 times greater than the window size
- Do not walk on the window, do not enter or leave the room through the window, do not put your hands and/or other body parts above the edge of the lining integrated with the window.
- The window must not be operated by minors without adult supervision.
- Any activities related to cleaning, adjustment or dismantling should be preceded with disconnecting the window from the power supply.
- Window parts must not be washed using solvent-based substances or open stream of water (do not immerse in water).
- Any repairs of the DSC/DSF window should be carried out by service authorised by the manufacturer.
- When the window is closed / opened, actuators are stopped by activating integrated overload module. Warning! The actuator may cause serious injury / crush the body. During assembly and operation of actuators, do not interfere into the window gap, mandrel, lifting mechanism and scissors. Potentially dangerous points between the window sash and the frame must be secured up to a height of 2.5m. It is required to protect the user from falling.
- The window is equipped with a system to check the correct operation of the actuators; after 3 unsuccessful attempts to open/close the window, the system will block the possibility of tilting the sash.
- The window can be unlocked only by an authorised service technician who will verify the reason of the lock activation; the unlock is done by pressing the RESET button while the power is on.



**Warning!!! Danger of jamming and crushing!
Window is closed automatically!**

MACHINE (WINDOW) INTENDED USE DESCRIPTION

The product should be used according to its intended design. FAKRO shall not be responsible for consequences resulting from improper use of the DSC/DSF window.

- The window is suitable for installation in roof pitches between 0 and 15 degrees and is intended to work as part of smoke ventilation system.

In order to ensure correct operation, the window must always be installed horizontally.

- Disassembly of the window is opposite to assembly.
- Do not dispose of the product together with household waste. Selective collection of electrical equipment is obligatory. Disposal of the window must meet local regulations.
- Ventilation function can be achieved by applying time setting of the window opening by the control unit (depending on the selected control unit).
- Keep a protective zone around the window and in the room under the window, if possible, not less than a radius of 1.5 times greater than the window size

MACHINE (WINDOW) GENERAL DESCRIPTION

DSC/DSF windows are constructed of multi-chamber PVC profiles. It is adapted to cooperate with elements of smoke ventilation systems offered by FAKRO. The DSC/DSF smoke ventilation window is equipped with two or four actuators (depending on version). The DSC window comes with a polycarbonate dome, while the DSF model is equipped with the DU6 glazing unit.

DSC/DSF WINDOW CONTROL PROCEDURE



Always disconnect all power sources, including emergency power batteries from the actuator before carrying out control work. The power switch must be protected from being switched on by unauthorised people.

The DSC/DSF window is one of the elements of the natural smoke ventilation system. Such system, acting as an active fire protection measure **should be inspected by qualified company every 6 months**. It is recommended to be the same company that has installed and started the system. During maintenance it is required to designate a protection zone both inside and outside the building (on the roof).

When servicing the system check whether:

- Actuators are running at the same speed during operation. Different actuator extension speeds can be caused by different resistance of one of the power supply lines. The reason for this situation may be different length or cross-section of cables supplying the actuators. There is also a risk of smut of wiring at the connection points. In this case, check the connections and make sure that actuators operate at the same speed. The permissible speed difference is 1%.
- Actuators close the window with overload force. Closing the window with the actuator overload force ensures its proper tightness.
- Metal elements are free of rust, if not, remove it (see “DSC/DSF window maintenance procedure”).
- Controls should be carried out by qualified personnel equipped with personal protective equipment and in compliance with safety regulations.
- Designate a protective zone around and above the window and in the room under the window during the control, if possible, not less than a radius of 1.5 times greater than the window size

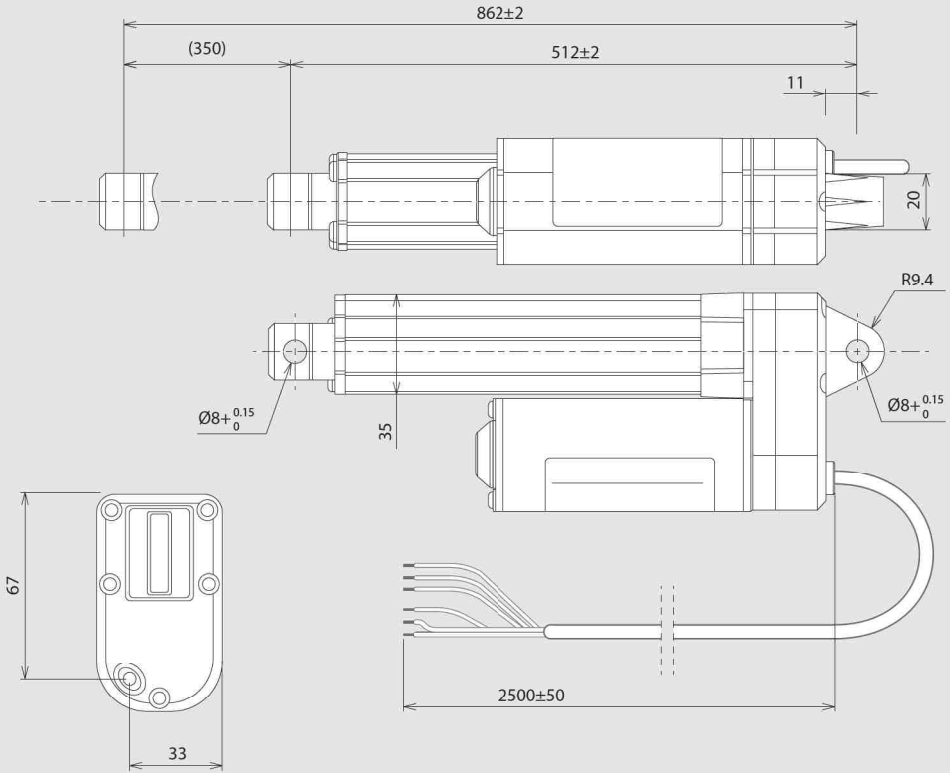
DSC/DSF WINDOW MAINTENANCE PROCEDURE



Always disconnect all power sources, including emergency power batteries from the actuator before carrying out maintenance work. The power switch must be protected from being switched on by unauthorised people.

- The lining is painted twice with eco-friendly acrylic varnish. Repainting should be done with acrylic varnish every 2-3 years depending on the operating conditions.
- Remove dirt from the space between the window frame and lining (in particular guide rails of the scissor mechanism) at least once a year. The lining must be disassembled for this purpose.
- The scissor bolts and actuator fastening points should be lubricated at least once a year.
- All elements covered with rust should be cleaned (with sand paper, wire brush), washed and painted.
- Maintenance work should be carried out by qualified personnel equipped with personal protective equipment and in compliance with safety regulations.
- Designate a protective zone around and above the window and in the room under the window during maintenance work, if possible, not less than a radius of 1.5 times greater than the window size

ACTUATOR SIZES USED IN DSC/DSF WINDOWS



ACTUATOR TECHNICAL DESCRIPTION

- The actuator is designed for smoke ventilation systems (SHEVS – Smoke Heat Exhaust Ventilation System)
- It is equipped with electronic limit switches and overload module
- Power cables with silicone cover.
- Full extension ≤ 60 seconds at full load and temperature of -5°C .
- It can be used in window actuators located more than 2.5m above the floor level.

TECHNICAL SPECIFICATION

Single actuator technical parameters

Supply voltage	24V DC
Pushing force	2000N
Extension speed	6 mm/s
Smoke ventilation – working temperature	$-5^\circ\text{C} \sim 65^\circ\text{C}$
Ventilation – working temperature	$5^\circ\text{C} \sim 65^\circ\text{C}$
Actuator maximum extension	350mm
Limit switches	2

ELECTRIC ACTUATOR CONTROL & MAINTENANCE



Always disconnect all power sources, including emergency power batteries from the actuator before carrying out control and maintenance works and replacing components of the system (eg actuator replacement). The power switch must be protected from being switched on by unauthorised people.

- Smoke ventilation system requires regular control and maintenance. Make sure what is the frequency of the system maintenance required by local regulations. In the absence of such regulations, control every six months is recommended.
- Actuators in use must be regularly inspected by qualified technicians (authorized to install and maintain smoke exhaust and ventilation systems and with permissions to work at heights).
- Operational availability should be examined regularly, including the following operations: dirt removal, checking tightness of screws, testing opening and closing.
- Defective actuators can be repaired only by the manufacturer.
- After installation and any changes introduced, check the entire system. The user must be informed about all important changes.
- Control and maintenance works should be carried out by qualified personnel equipped with personal protective equipment and in compliance with safety regulations.
- Designate a protective zone around and above the window and in the room under the window during control and maintenance works, if possible, not less than a radius of 1.5 times greater than the window size

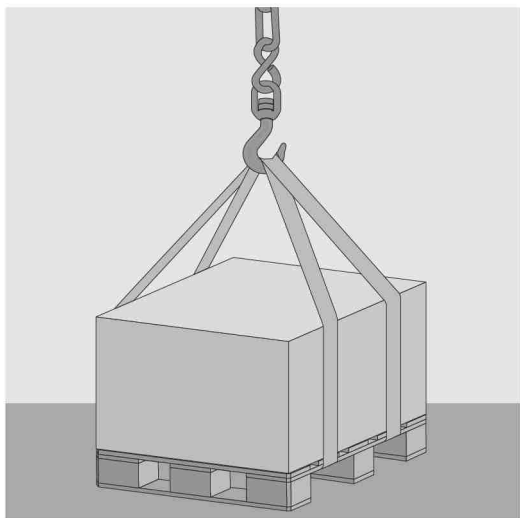
SERVICE LIFE

If the actuator is used as intended, its minimum service life is 1,000 full cycles plus an additional 10,000 cycles to the ventilation position (sash opening height: 25cm).

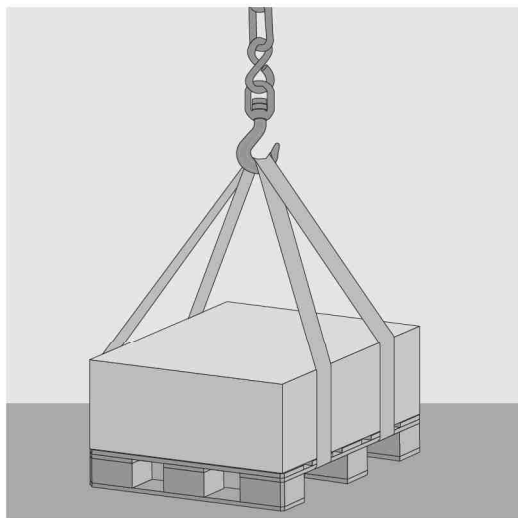
LOGISTIC DATA

WINDOW	Commercial size [length/width] [cm]	ARTICLE NO.	NET WEIGHT [kg]	GROSS WEIGHT [kg]	PACKAGING DIMENSIONS [length/width /height] [cm]
DSC-C2 P2	100x100	80ER07	138	162,5	168/167/62
	120x120	80ER07	168,5	196,6	188/187/62
DSC-C4 P2	100x100	80ES07	141,6	166,5	168/167/62
	120x120	80ES08	172,1	200,5	188/187/62
DSF DU6	105x105	80ET12	183	200,5	173/172/43
	120x120	80ET08	217	236,5	188/187/43

The window should be transported on a pallet. Loading the vehicle should be done from a dock (using a pallet truck) or by means of HDS loading crane.

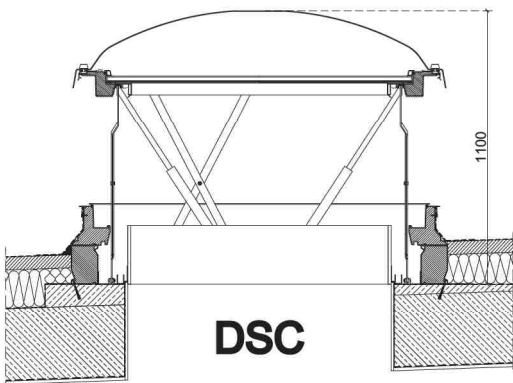


DSC window method of transport

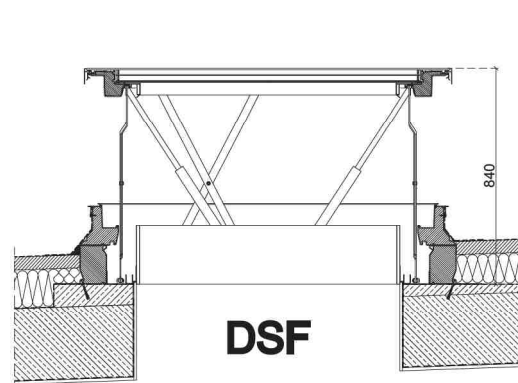


DSF window method of transport

WINDOW HEIGHT AFTER OPENING



DSC



DSF



When installing the window make sure that no elements block its opening.

CONTROL UNIT SELECTION

DSF and DSC windows equipped with four actuators are compatible with the standard RZN 4408-K control unit, while windows having two actuators with the RZN 4404-K. Both control units are offered by FAKRO.

The following control units should be used in the case of other smoke ventilation units:

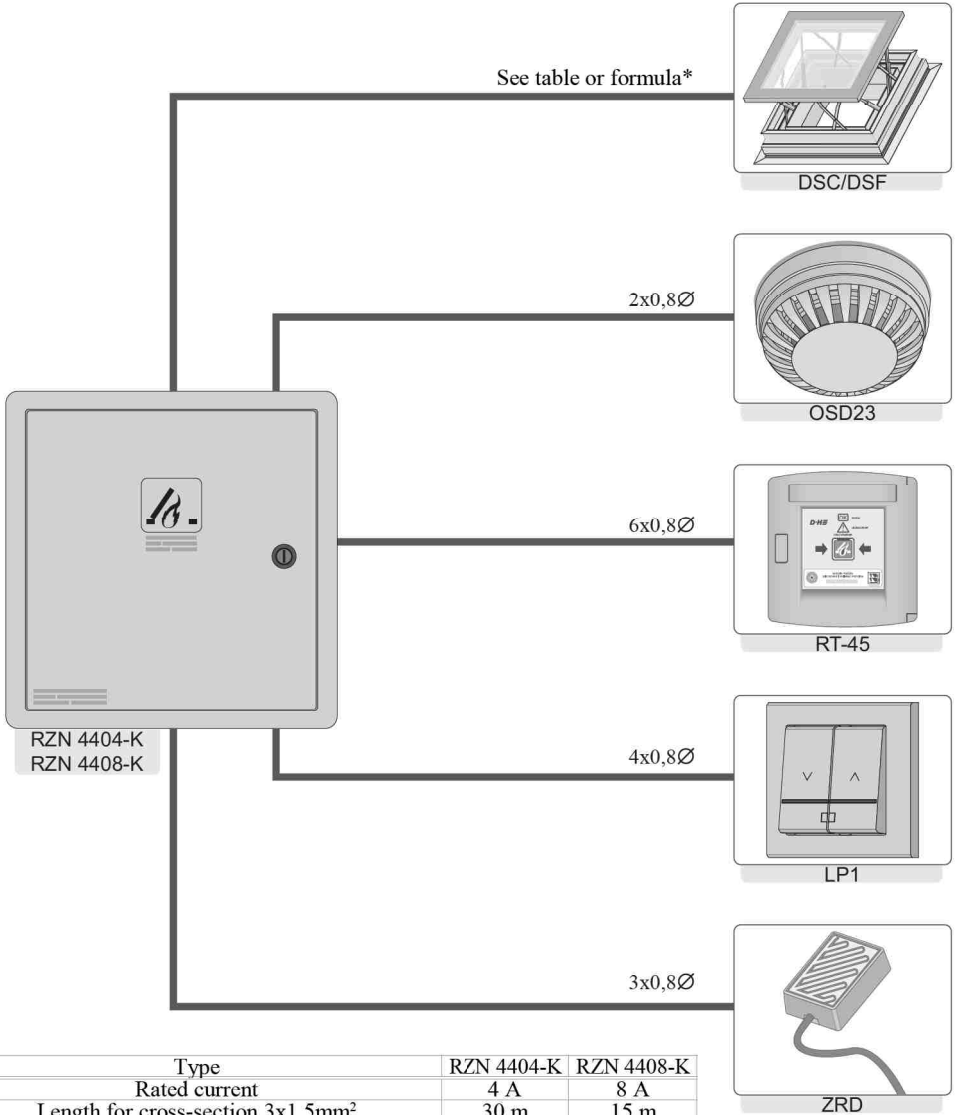
- a) 4A as minimum for windows with two actuators (DSC-C2 P2),
- b) 8A as minimum for windows with four actuators (DSC-C4 P2 and DSF DU6).

However, it is required to make sure that the control unit comes with a slow-blow fuse and parameters of the current identical or better than in the case of the RZN control unit and is equipped with an emergency power supply system with a standby time of not less than 72 hours.

SAMPLE WIRING DIAGRAM

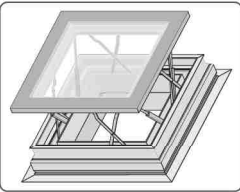
When selecting power cables, in addition to the appropriate fire resistance class, it is required to ensure proper cross-section selection.

The resistance of cables changes under the influence of temperature. Increase in the resistance of cables caused by the temperature growth may result in malfunctioning of electrical equipment and ineffective protection against electric shock.



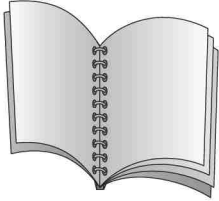
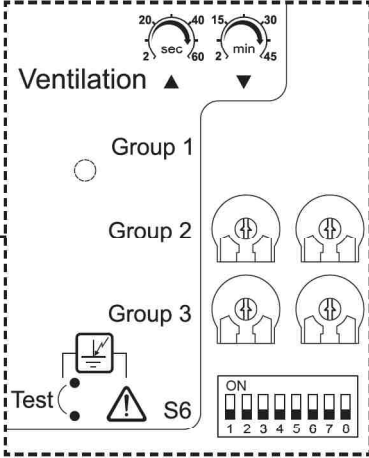
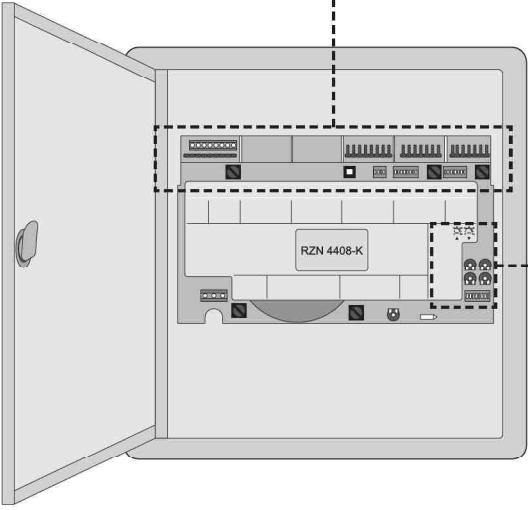
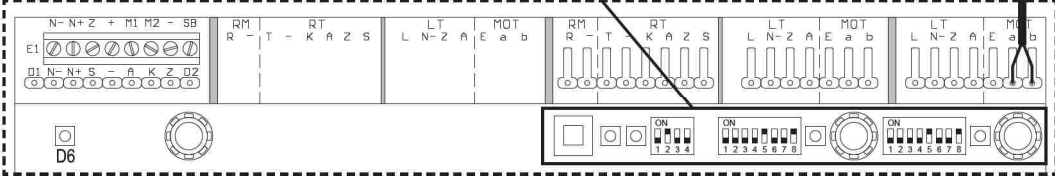
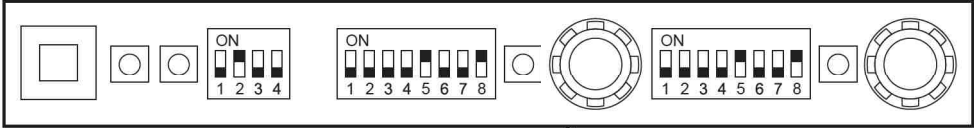
Type	RZN 4404-K	RZN 4408-K
Rated current	4 A	8 A
Length for cross-section 3x1,5mm ²	30 m	15 m
Length for cross-section 3x2,5mm ²	50 m	25 m

*Cross-section (mm²) = $\frac{\text{Cable length (m)} \times \text{Rated current (A)}}{80}$



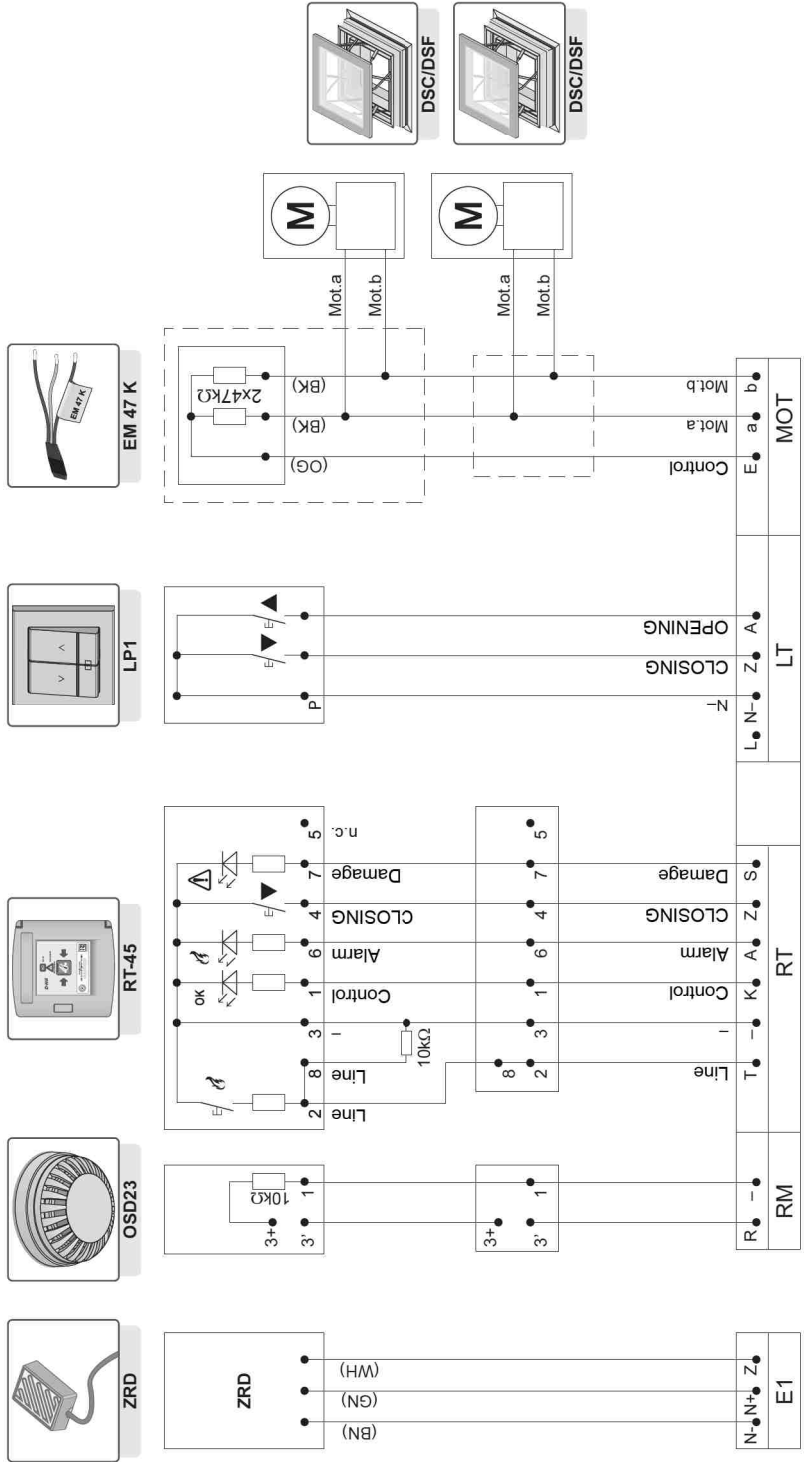
DSC/DSF

DEFAULT SETTINGS



RZN 44 __-K

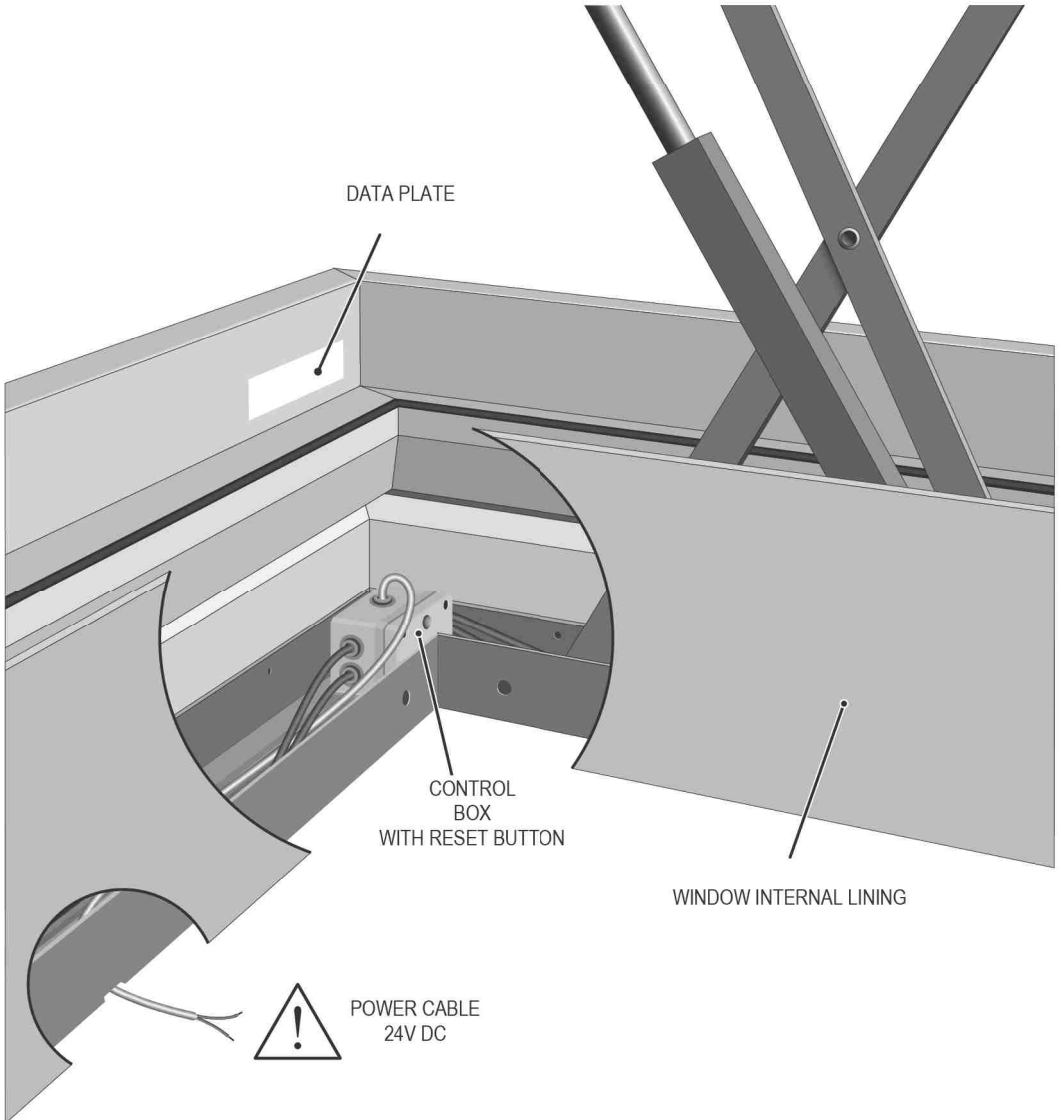
WIRING DIAGRAM



RZN 4404-K / RZN 4408-K

PLACE OF POWER CABLE OUTPUT

NOTE: DSF/DSC smoke ventilation windows are powered from smoke ventilation control unit with 24V DC.



MANUFACTURER DECLARATION

The window together with the actuator and controller was manufactured and tested according to the regulations applicable in the European Union.

	EU/EC Declaration of Conformity	No. E/O/001/H1/S1/18	
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1. Product:

Name: Natural smoke and heat exhaust ventilator

Model/Type: DSC, DSF

(DSC-C2, DSC-C4, DSC-M2, DSC-M4, DSF)

Identification in accordance with the data plate:

Model/Type

Code



Production date Batch No.

2. Name and address of the manufacturer:

**FAKRO PP Sp. z o.o.
ul. Węgierska 144A
33-300 Nowy Sącz
Poland**

3. This Declaration of Conformity is issued under the sole responsibility of the manufacturer.

4. Object of Declaration:

DSC, DSF smoke ventilation window; see point 1.

5. The object of the declaration described above is in conformity with the relevant Union Harmonisation Legislation:

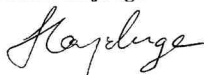
**EMC DIRECTIVE 2014/30/EU,
MD DIRECTIVE 2006/42/EC,
RoHS DIRECTIVE 2011/65/EU,**

6. Applied standards:

**EN 55014-2:2015,
EN 60335-1:2012 +A11:2014 +A12:2017
EN 60335-2-103:2015
EN 50581:2012
EN 61000-3-2:2014
EN 61000-6-3:2007 +A1:2011
EN ISO 12100:2010**

7. Person authorised to prepare technical documentation: Michał Hajduga, address: see point 2.

Michał Hajduga



Product Manager
Nowy Sącz, 27 July 2018

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.

FAKRO PP Sp. z o.o.
ul. Węgierska 144A, 33-300 Nowy Sącz, PL
tel. +48 18 4440444, fax +48 18 4440333
www.fakro.com

Quality certificate:

Device

Model

Serial number

Seller

Address

Purchase date

Invoice No.

Signature (stamp) of person installing a device



Keyway Testing Technology Co., Ltd.

Baishun Industrial Zone, Zhangmutou Town,
Dongguan, Guangdong, China

Tel : 86-769-8718 2258

Fax : 86-769-8718 1058

Mail : kwtest@keywaytest.com

Certificate of Conformity

No. 15KWE072865E

Applicant : Timotion Technology Co., Ltd.

Address : Shiyong Mining Industrial Zone, Hengli Town,
Dongguan City, Guangdong, China

Trade Name :  **TiMOTION**

Product : Actuator

Model No. : TA2P-VL series(See Model List)

The submitted sample of the above equipment has been tested and found to comply with the following European Directive and the following standards:

- Electromagnetic directive 2014/30/EU
- Standards
EN 61000-6-3:2007+A1:2011
EN 61000-6-1:2007

This certificate is part of the full test report(s) and should be read in conjunction with it. The referred test report(s) show that the product complies with standard(s) recognized as giving presumption of compliance with the essential requirements in the specified European Directive.

This certificate does not imply assessment of the production of the product.
The CE marking may be affixed if all relevant and effective European Directives are applicable.



Jade Yang
Supervisor

Date: Jul. 30, 2015

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