CONTROLS
ELECTRONIC

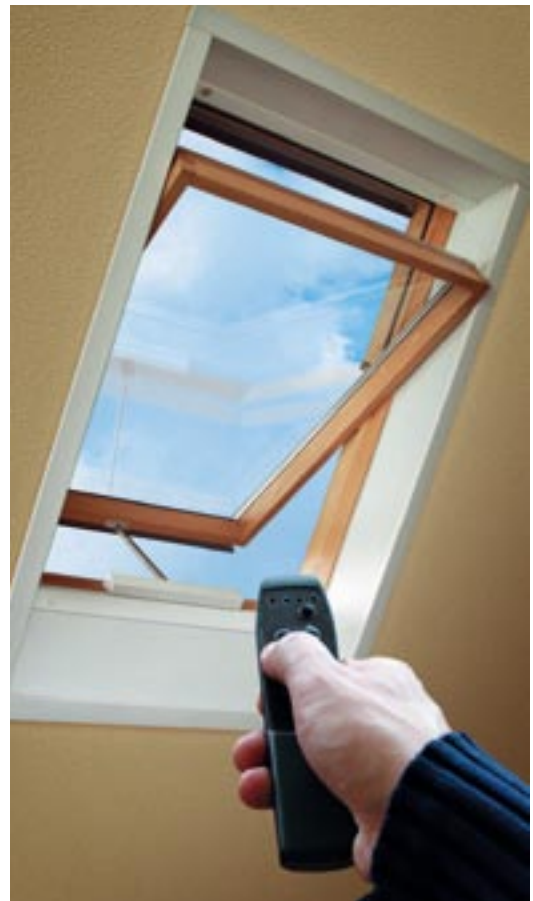# Electronic control applications

Fakro offers modern electronic control systems to operate roof windows installed above head height and out of easy reach. Control systems and their parts for control of roof windows and window accessories can be selected to suit particular client requirements.

Electronically controlled roof window accessories are also recommended. Depending on needs and preferences external electric roller blinds and internal blinds (blackout blinds or Venetian blinds) can be installed.

Control systems fitted with motors will also operate rain, wind or smoke sensors.

Fire and smoke pose a serious threat to human life and health. Contrary to popular belief, over 90% of fire related deaths are caused by smoke suffocation, and not by high temperature or burning. Smoke also causes considerable damage to property. Applying appropriate smoke and heat escape systems can provide considerable help in preventing the dangers caused by high concentrations of smoke and heat.

Electric motors with increased durability are applied as a drive to roof windows with smoke ventilation systems in public buildings (especially in stairways and in blocks of flats, hotels etc.). The roof window with a motor operated by smoke control unit co-operating with smoke sensor and alarm switch creates a so-called "smoke and heat carrying away gravitational unit".

ROOM VENTILATION
Electronic Control 230 V

1 ZC230 with switch
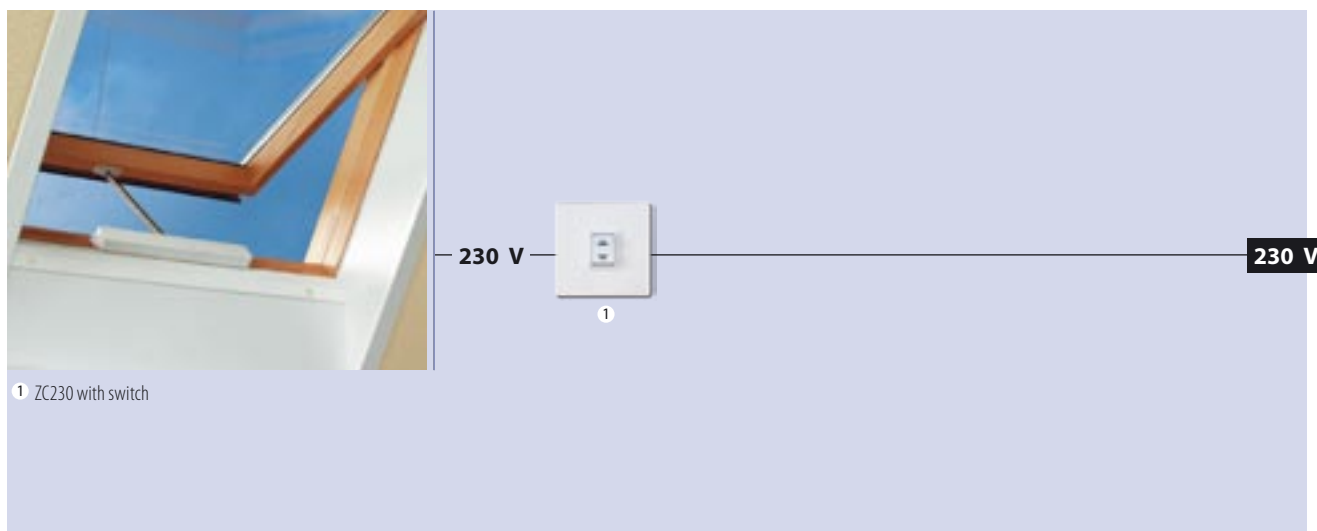
Description of functioning

This system makes it possible to open and close one window with the use of a wall switch included in the package.

Installation

Installation of this package is achieved by the connection of a power supply 230 V to the wall switch from any point by the use of two-core cable (2 x 1.5 mm²) and next from the wall switch with three-core (3 x0.75 mm²) cable to a ZC 230 motor. If the distance between the wall switch and the motor (when measuring cable length) is smaller than 1.5 m, there is no need to use an additional cable between these elements. The quantities of the cable are supplied according to the client's needs. The way of fixing the motor to the window and system of connections are included in the fitting instructions packed together with the motor. The wall switch ZMS is fitted for a standard wall-cable box.

Other options

One wall switch can operate up to 20 motors simultaneously, it means we can open and close a number of windows at the same time.
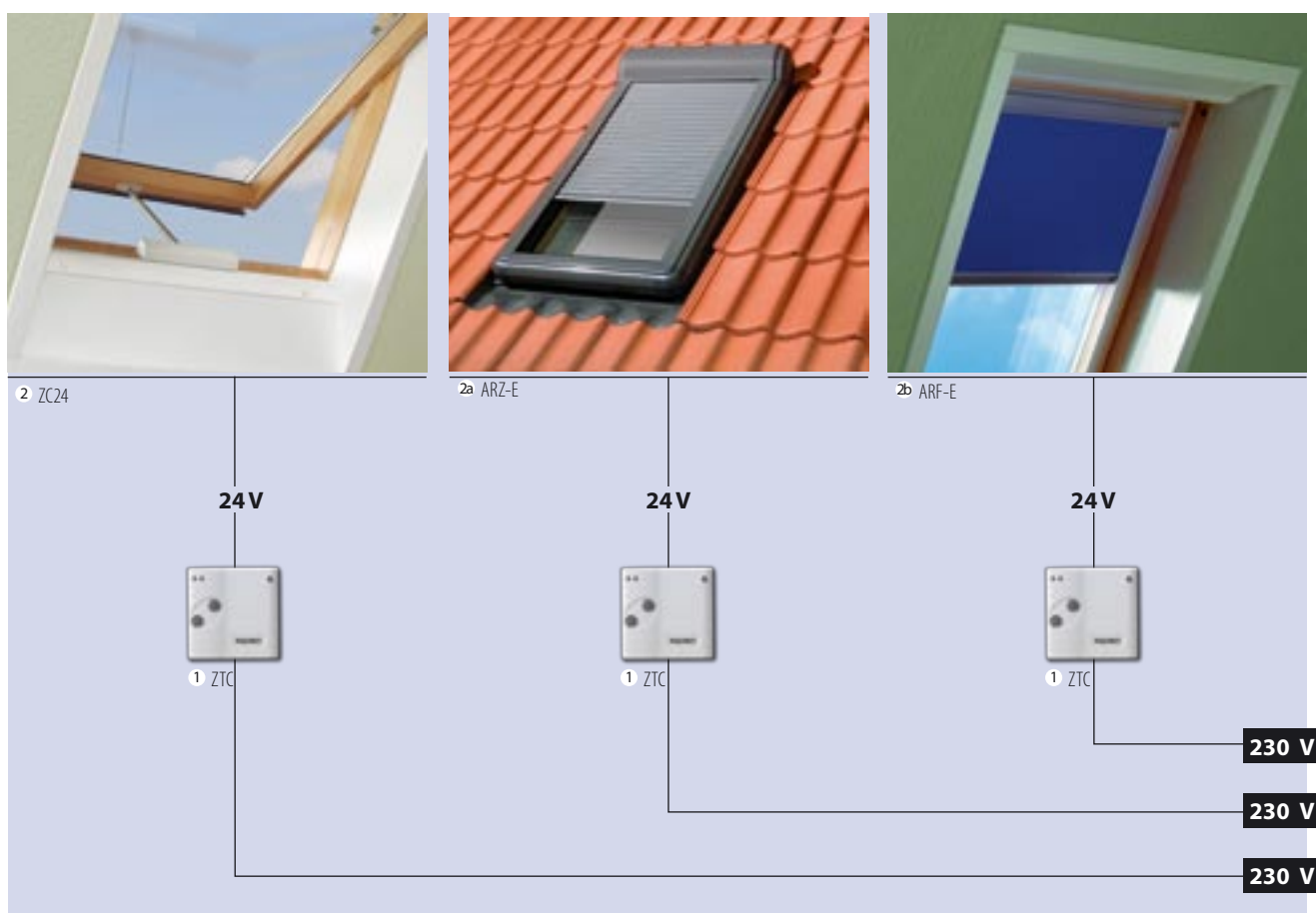
Applied in windows

FT, PT, FKP, FPP, FW

Elements

1	ZC230	Motor (230 V, 30W) with switch and connection cable

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Detailed description of elements pages 138 – 143.

Local control packages of single elements 24 V

2 ZC24　　　2a ARZ-E　　　2b ARF-E

24 V　　**24 V**　　**24 V**

1 ZTC　　1 ZTC　　1 ZTC

230 V

230 V

230 V

roof window

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Description of functioning

This system makes it possible to open and close one window or to operate one of the electric accessories with the use of a wall switch.

Installation of this package is achieved by a connection of a power supply 230 V to the switch ZTC from any point with the use of two-core cable (2 x 1.5 mm²) and next from the switch ZTC with use of single two-core (2 x 0.75 mm²) cable to the receiver (motor ZC24, external roller blind ARZ, blackout blind ARF-E or Venetian blind AJP–E). The quantities of the cable are supplied according to the client's needs. The system of electric connections is described in the fitting instructions of the switch. The switch ZTC is fitted for a standard wall-cable box.

Other options

One switch ZTC can operate only one 24V receiver: (motor ZC24, external roller blind ARZ-E, ARP-E or Venetian blind AJP-E.

ZTC switch can be connected into net with three core cable (3 x 0.25 mm²) and with the use of standard Venetian blind type switches can operate all the connected into net switches.

Applied to windows
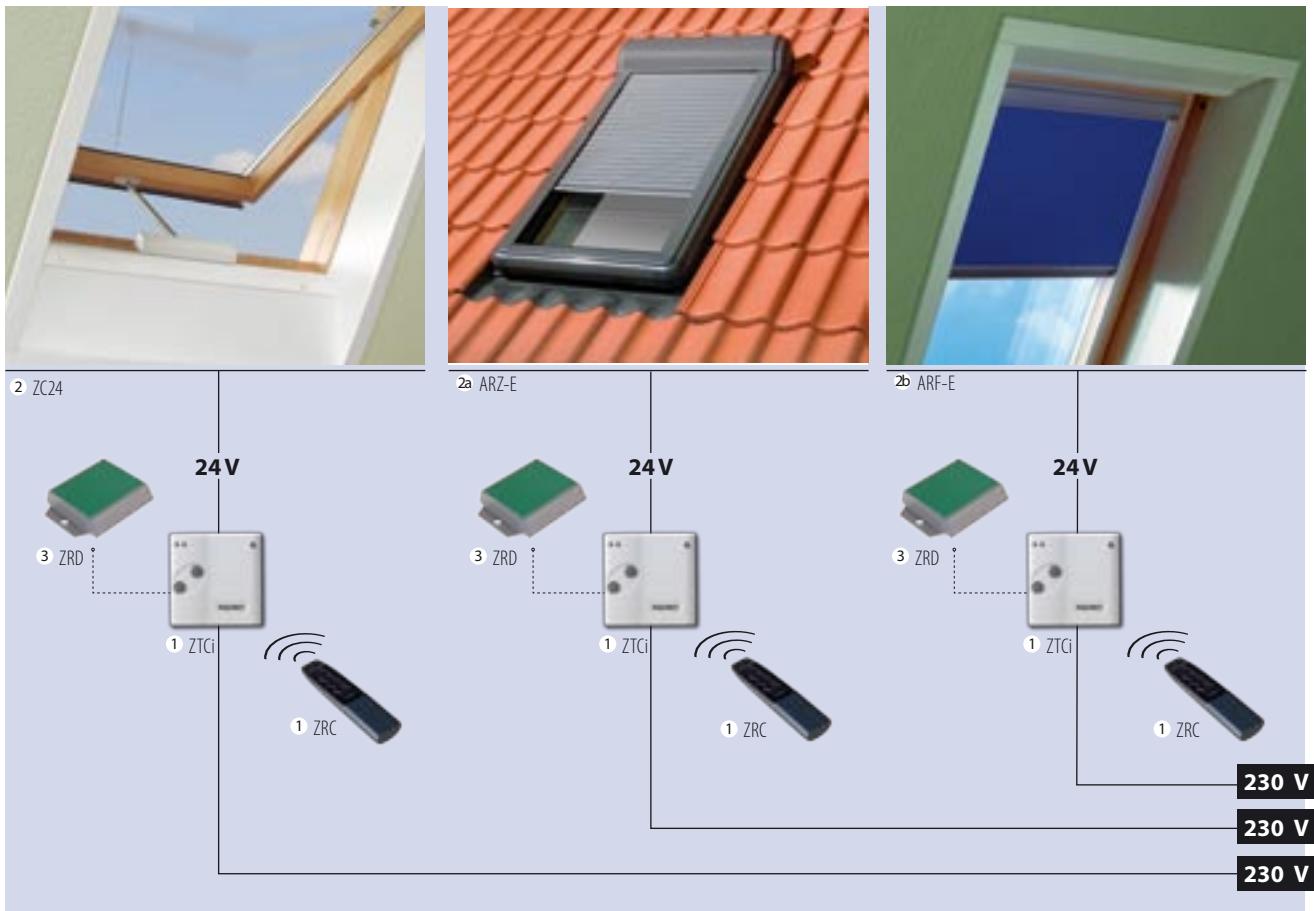
FT, PT, FKP, FPP, FW.

Elements

1	ZTC	Wall switch with a power adapter (output power up to 16W)
2	ZC 24	Motor (24 V, 9W)
2a	ARZ-E, ARK-E	External roller blind (24 V, 15W)
2b	ARF-E	Blackout blind (24 V, 12W)
2c	AJP-E	Venetian blind (24 V, 12W)
2d	ARP-E	Blind (24V, 12W)
		connection cable 3 x 1 mm² (3.00 m)

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Detailed description of elements pages 138 – 143.

Remotely Controlled Packages of Single Elements 24 V

2 ZC24 | 2a ARZ-E | 2b ARF-E

24 V | 24 V | 24 V

3 ZRD | 3 ZRD | 3 ZRD

1 ZTCi | 1 ZTCi | 1 ZTCi

1 ZRC | 1 ZRC | 1 ZRC

230 V
230 V
230 V

Description of functioning
This system makes it possible to open and close one window or to operate one of the electric accessories with the use of a wall switch or an infra-red remote control.

Installation
Installation of this package is achieved by the connection of a power supply 230 V to the switch ZTCi from any point with the use of two-core cable (2 x 1.5 mm²), and next from the switch ZTCi with a single two-core (2 x 0.75 mm²) cable to the receiver (motor ZC24, external roller blind ARZ-E, blackout blind ARF-E or Venetian blind AJP-E). The quantities of the cable are supplied according to the client's needs. The system of electric connections and the remote control programming are described in the fitting instructions of the switch and included in the package.

The switch ZTCi can placed anywhere, provided it can be "seen" by the remote control during the command sending. The infra-red remote control should be directed towards the ZTCi switch when command sending.

Other options
ZTCi switch can be connected with rain detector ZRD.

One Switch ZTCi can operate only one 24V receiver: (motor ZC24, external roller blind ARZ-E, blackout blind ARF-E, ARP-E or Venetian blind AJP-E). One remote control can operate an unlimited number of ZTCi switches, provided it has been programmed separately to each ZTCi.
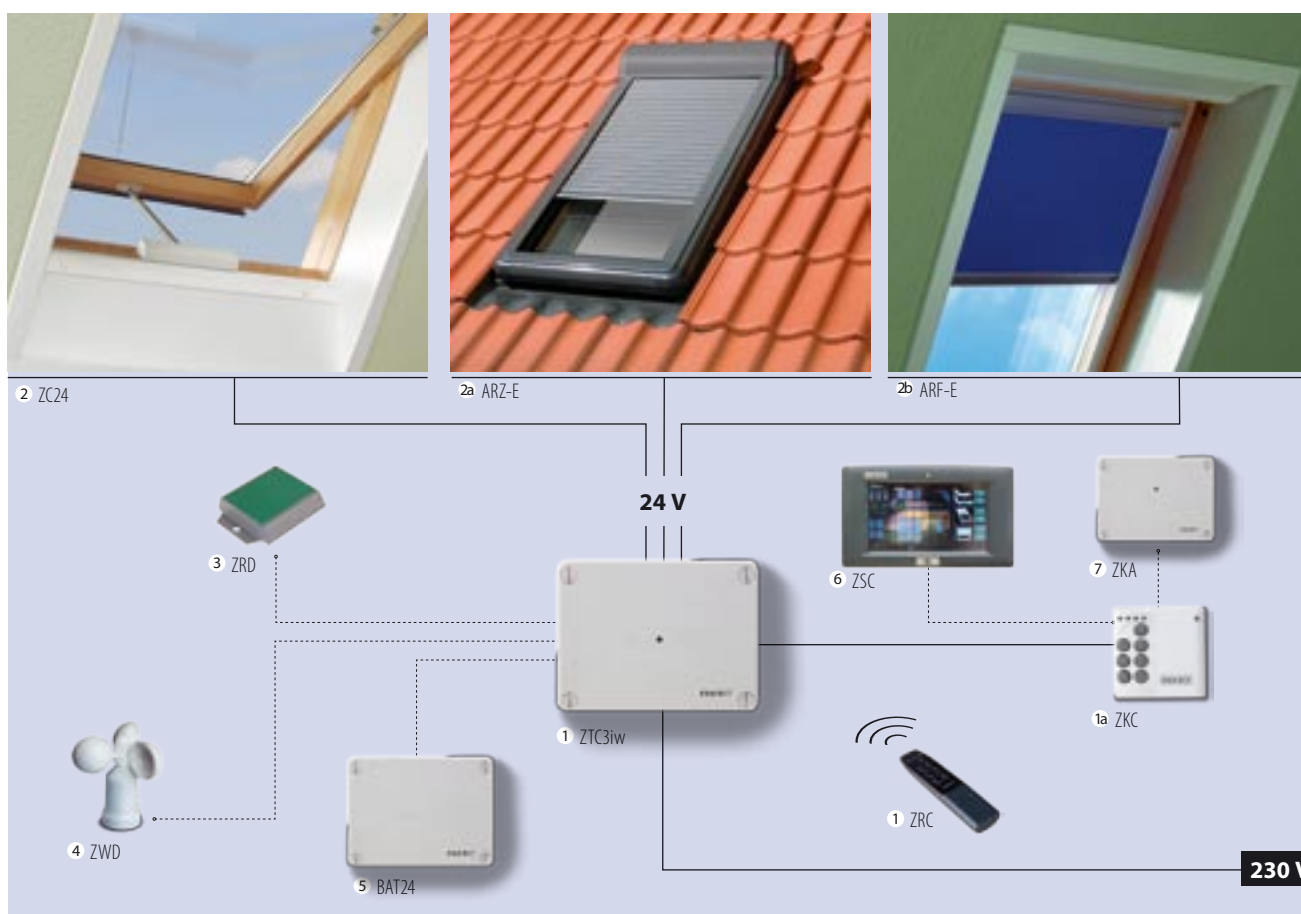
Elements

1	ZTCi/ZRC	Wall switch with a power adapter (16W) with remote control
2	ZC 24	Motor (24 V, 9 W)
2a	ARZ-E, ARK-E	External roller blind (24 V, 15 W)
2b	ARF-E	Blackout blind (24 V, 12 W)
2c	ARP-E	Blind (24 V, 12 W)
2d	AJP-E	Venetian blind (24 V, 12 W)
3	ZRD	Rain detektor
		Connection cable 3 x 1 mm²
	ZRC	Additional remote control

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Detailed description of elements pages 138 – 143.

Local And Remote Control Packages of Multiple Elements 24 V

2 ZC24   2a ARZ-E   2b ARF-E

24 V

3 ZRD   6 ZSC   7 ZKA

1 ZTC3iw   1a ZKC

4 ZWD   1 ZRC

5 BAT24

230 V

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Description of functioning

This system makes it possible to open and close three windows each separately or at the same time or to operate three electric accessories by remote control or a wall switch.

Installation

Installation of this package is achieved by a connection of a power supply 230 V to the central unit ZTCiw from any point with the use of two-core cable (2 x 1.5 mm²), and next from the central unit ZTC3iw with maximum three two-core (2 x 0.75 mm²) cables to the receivers. The quantities of the cable are supplied according to the client's needs. ZKC switch should be connected to the central unit with one three-core cable (3 x 0.75 mm²). ZKC switch is equipped with the infra-red receiver. The infra-red remote control should be pointed in the direction of central unit or ZKC switch when signal sending. The central unit ZTCiw can operate up to three 24 V receivers (motor ZC24, external roller blind ARZ-E, blackout blind ARF-E or Venetian blind AJP-E).

Other options

There is the option of connecting a ZRD rain sensor, wind strength sensor ZWD, adaptor ZKA and additional control panel ZSC to the central unit. The rain sensor ZRD as well as wind strength sensor ZWD are equipped with 5 m of connection cable. If the distance from the sensor to the central unit is smaller (when measuring along the cable) than 5 m, there is no need to apply additional cable. The connection of the emergency power back-up (batteries) enables operation of the system during power failure.

The connection of ZSC control panel enables visualisation and control of the building.

Elements

1	ZTC3iw	Control unit-three channelled (output power 3 x 12W) with ZRC remote control
1a	ZTC3iw	Control unit -three channelled (output power 3 x 12W) with ZKC switch
2	ZC 24	Motor (24 V,9W)
2a	ARZ-E, ARK-E	External roller blind (24 V, 15W)
2b	ARF-E	Blackout blind
2c	ARP-E	Venetian blind (24 V, 12W)
2d	AJP-E	Żaluzja (24 V, 12W)
3	ZRD	Rain sensor
4	ZWD	Wind strength sensor
5	BAT24	Emergency back-up batteries (2 x 12 V)
6	ZSC	Control Panel
7	ZKA	Adaptor
		Connection cable 3 x 1mm²
	ZRC	Additional remote control
	ZKC	Additional keyboard

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Detailed description of elements pages 138 – 143.

Motors ZC24, ZC230

Motor ZC24

Chain reach switch of the motor

MotorZC230

Thanks to small dimensions and simple installation system, the ZC24 and ZC230 chain motor are ideal for operating Fakro roof windows. There are available in two voltage versions, 24 V and 230 V. The maximum force they can exert on a window is 200N, which is sufficient to operate all window sizes. The maximum chain reach of ZC230 motor is 360 mm, when required, it is possible to reduce reach to 240 mm. The motor ZC24 chain reach is 24 cm. The motor is fitted with an internal anti-overload system which also acts as a sensor to detect whether the window has been locked properly thus eliminating the need of regulating the outermost position of the window. All electrical elements have double insulation (so there is no need for earthing when installing ZC230) and are enclosed in a UV radiation-resistant casing.

The motors ZC24 and ZC230, due to their small dimensions and appropriate strength can be used in centre-pivot, top-hung, non-standard window sizes and side hung escape windows.

Technical specifications:	ZC24	ZC230
▪ chain reach	240 mm	360 mm
▪ powered with a voltage	24 V DC	230 V AC
▪ rated current	0.36 A	0.12 A
▪ output power	9 W	15 W
▪ strength of pushing out the chain	200 N	200 N
▪ chain speed	9.7 mm/s	9.7 mm/s
▪ operating temperature	− 10° C to 65° C	− 10° C to 65° C
▪ power supplying cable	2 x 0.75 mm^2 (0.4)	3 x 0.75 mm^2 (1.5)
▪ dimensions	262 x 47 x 33.5 mm	362 x 47 x 33.5 mm
▪ weight	0.85 kg	0.94 kg

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Control unit ZTC3iw, ZTC3iw-230

Control unit ZTC3iw operates a maximum of three receivers from Fakro which are powered with 24 V. These elements can be control led locally (using wall keyboard ZKC or remotely by ZRC infra-red remote control), individually or as a group. Control unit is equipped with an infra-red sensor. An infra-red sensor is also situated in ZKC keyboard. Control units ZTC3iw and ZTC3iw-230V can be connected in groups (maximum 9 control units in group) with two-core (2 x 0.25 mm²) connection cable. Thanks to this type of connection only one rain sensor or wind sensor, one wall keyboard or one remote control need to be used to operate with a whole group of connected together control units. The package contains 8 m of two-core (2 x 1 mm²) connection cable. The system of electric connections and the remote control programming are described in the fitting instructions of control unit and included in the package. The switch ZTC3iw can be placed anywhere in the room, provided it can be "seen" by the remote control during the command sending. Control unit ZTC3iw can co-operate with rain sensor or wind sensor ZWD. The connection of the emergency power back-up (batteries) enables operation of the system during a power failure.

Control unit ZTC3iw-230 has got the same controlling and connecting possibilities as ZTC3iw and is intended to control devices powered with 230VAC/50Hz e.g. roller shutters for vertical windows.

Technical specifications:	ZTCiw	ZTCiw 230
▪ power supply voltage	230 V AC/50Hz	230 V AC/50Hz
▪ output power	up to 12W	500 W
▪ maximum output current	0.5 A	4 A
▪ output voltage	24 V DC	230VAC/50Hz
▪ operating temperature	– 10° C to 65° C	– 10° C to 65° C
▪ power supply cable	2 x 1 mm² (8 m)	2 x 1 mm² (8 m)
▪ dimensions	160 x 120 x 75 mm	160 x 120 x 75 mm
▪ weight	0.75 kg	0.75 kg

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Swiches, Control Panels

ZMS Switch

Wall switch ZMS allows it to operate directly a ZC230 electrical motor working with a voltage of 230 V. ZMS switch is recommended to be installed in standard cable box.

Technical specifications:
- voltage input: 230 V
- voltage output: 230 V
- load current: 3.5 A

- installation: under plaster
- operation temperature: – 10° C to 60° C
- dimensions : 80 x 80 x 40 mm

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ZTC Switch

Wall switch with built in transformer allows it to control directly a ZC24 electrical motor and control electric accessories from Fakro (external blind, ARZ-E, blackout blind ARF-E, ARP-E or Venetian blind AJP-E). The ZTC switch can be connected into nets with the use of three core connection cable (3 x 0.25 mm²) and with the use of standard Venetian blind type switches can operate all the connected into net switches.

Technical specifications:
- power supply voltage: 24V DC
- power output: up to 16 W
- operating temperature: – 10° C to 65° C
- installation: under plaster
- power supply cable 2 x 0.75mm² (4m)
- dimensions: 80 x 80 x 80 mm

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ZTCi Switch

Wall switch ZTCi with built-in transformer allows it to control one 24V receiver directly or remotely by remote control ZRC such electric accessories as : ZC24 electrical motor, ARZ-E, blackout blind ARF-E, ARP-E or Venetian blind AJP-E. ZTCi switch can be connected with rain detector ZRD.

The ZTCi switch can be connected into nets with the use of three core connection cable (3 x 0.25 mm²) and with the use of standard Venetian blind type switches can operate all the connected into net switches.

Technical specifications:
- voltage input: 24V DC
- power output: up to 16 W
- operating temperature: +5° C to 40° C
- installation: under plaster
- power supply cable 2 x 0.75mm² (4m)
- dimensions: 80 x 80 x 80 mm

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ZKC Keyboard

ZKC switch, when connected to ZTC3 control unit, enables local control of electric accessories and can also work as a receiver of infra-red signals sent by ZRC remote control. ZKC switch is able to operate maximum four 3-channel control units C3iw. It makes it possible to operate maximum 12 electric accessories with use of one KC switch. As a rule ZKC switch is programmed to operate one ZTC3iw control unit. In the package, there is 4m cable included which enables connection of switch with control unit. A single top push button gives a signal to the control unit. Additional push buttons on the switch are used to operate each of the three channels of the chosen control unit.

Technical specifications:
- power supply voltage: +5V
- power cable: 3 x 0.25 mm² (4m)
- output: logical signal
- dimensions: 80 x 80 x 30 mm

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Control panel ZSC

Control panel ZSC is intended to visualize controlling of electrical accessories connected to control unit / net of control units ZTC3iw. Control panel can operate a maximum of 9 receivers ZTC3iw. It gives a possibility to control maximum of 27 electrical appliances. The control of electric accessories visualisation is made to order. The price includes only inter-active panel and the contents of the package. The soft-ware price and order processing time will be calculated individually depending on the Customer requirements. In order to buy inter-active panel, contact Fakro company, please. The package contains: charger, special indicatory device to operate the panel and mounting holders.

Technical specifications
- panel diagonal: 7 or 12 inches
- panel dimensions: 15 x 9 cm or 24.5 x 18 cm
- external dimensions: 22.5 cm, 14 cm, 4 cm, 30 cm, 14 cm, 4cm;
- power supply voltage: 12 V
- power consumption: 36 W
- weight: 0.6 kg, 1.8 kg;

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Sensors

ZRD Rain Sensor

Wind Strength Sensor ZWD

Emergency back-up power

ZRD Rain Sensor

ZRD rain sensor ensures automatic closure of the window in case of rain. It can be operated with control unit ZTCiw. The sensor is fitted with a heating element which prevents it from reacting to fog, dew etc. The rain sensor can be applied in smoke ventilation systems, but the signal is not taken into account unless it is working in monitor mode. In case of fire the rain sensor signal can not influence the window control. The ZRD rain sensor is suitable for installation in an unsheltered position on the roof and exposed to the weather.

Technical specification
- power supply voltage: 8 – 32 V DC
- dimensions: 55 x 50 mm
- power cable: 3 x 0.25 mm² (5 m)

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Wind Strength Sensor ZWD

The ZWD wind strength sensor will automatically close windows when the wind exceeds a certain strength. It can be connected to control unit ZTCiw. Wind speed activation can be set in the range of 5 to 40 km/h. Suitable for installation in an unsheltered position on the roof and exposed to the weather.

Technical specifications:
- power supply voltage: 8 – 32 V DC
- dimensions: 55 x 50 mm
- power cable: 3 x 0.25 mm² (5 m)

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Emergency back-up power

A set of emergency back-up batteries enable window operation in cases of power failure. This option makes it possible to close the window in emergency situations. The capacity of the batteries is sufficient to open and close windows connected to the control unit ZTC3iw a number of times.

Technical specifications:
- voltage: 2 x 12 V
- capacity: 1.3 Ah
- dimensions: 160 x 120 x 75 mm

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Adapter ZKA

Adapter ZKA is intended to cooperate with control unit ZTC3iw. When connected to the control unit ZTCi3w instead of ZKC switch, it secures applying other types of Venetian switches able to control Fakro electrical appliances. Besides, there is a possibility to connect to the adapter ZKA signal without potential sent from any control unit (e.g. temperature sensor, humidity sensor or EIB system).

Technical specifications
- power voltage: 5 VDC
- dimensions: 160 x 120 x 75 mm
- output: logical signal

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ZRC Remote Control

Suitable for remote operation of electric accessories connected to ZTC3iw control unit or ZTCi switch. Remote control can operate maximum four 3-channel control units ZTC3iw. This option makes it possible to operate maximum 12 receivers with the use of remote control. A single top button operates control unit. Other buttons operate three channels of the chosen control unit.

Technical specifications:
- operation temperature: (+ 5° C to 40° C)
- dimensions: 170 x 40 x 20 mm
- power voltage 2 x 1.5 V, battery AA

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Emergency back-up power

ZRC Remote Control

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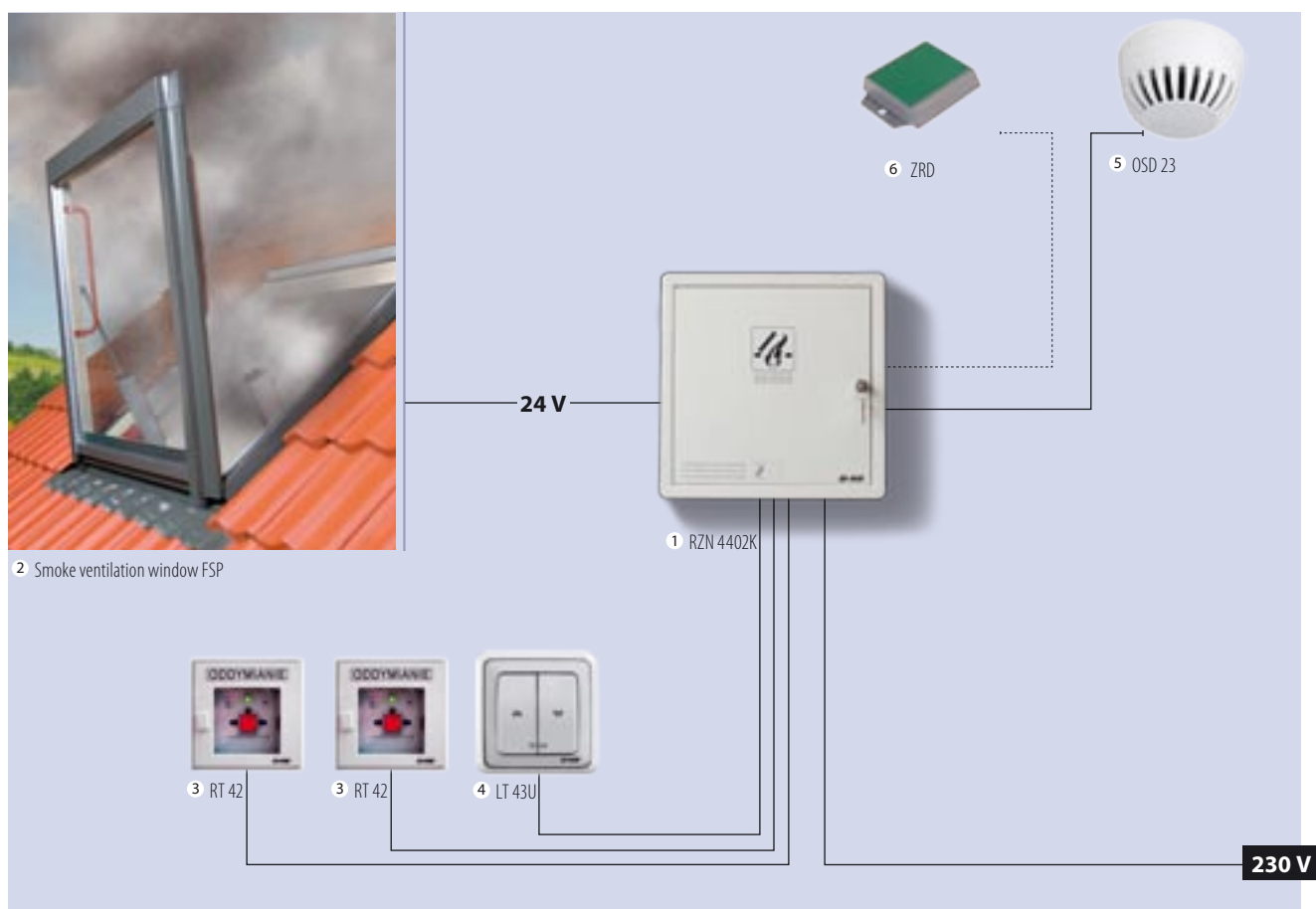
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SMOKE VENTILATION SYSTEM

## Gravitational system of smoke and heat expelling

6 ZRD   5 OSD 23

24 V

1 RZN 4402K

2 Smoke ventilation window FSP

3 RT 42   3 RT 42   4 LT 43U

230 V

Description of operation

Window (performs the function of the smoke flap) in order to expel the excess of smoke and toxic gasses emitted during the fire. Above all it enables the avenues of retreat from the building to be smoke free and thus makes people evacuation from the building easier. It also helps to localise the source of the fire and allows faster fire extinguishing. When the smoke, which comes from the fire in the room, is noticed by the smoke sensor the signal is sent to the smoke ventilation unit and the motor opening the window is put into motion. If the fire is noticed prior to the fire reaction sensor, the system can be started manually by pressing the fire alarm button. Additionally, the system enables daily ventilation of the room by opening the window with a special ventilation button. The system closes the window automatically after the fixed ventilation period of the room has passed.

The system can operate with centre pivot window equipped with motor KA 21/500 or KA 21/600.

Motor KA 21/500 can be applied to window with width of 78 cm or more. Motor KA 21/600 can be applied to window with width of 94 cm or more.

The actual smoke ventilation area of FSP smoke ventilation window is provided in a detailed technical window specification whereas in case of centre pivot windows it has to be established during the designing process by expert.
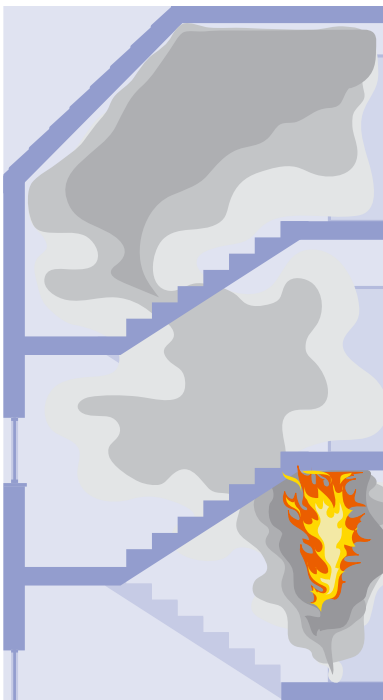
The functioning of the smoke ventilation system which contains the roof window equipped with motor.
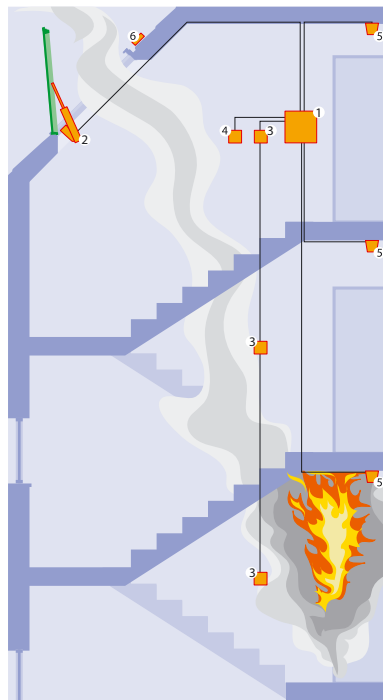
With the functioning ventilation system.
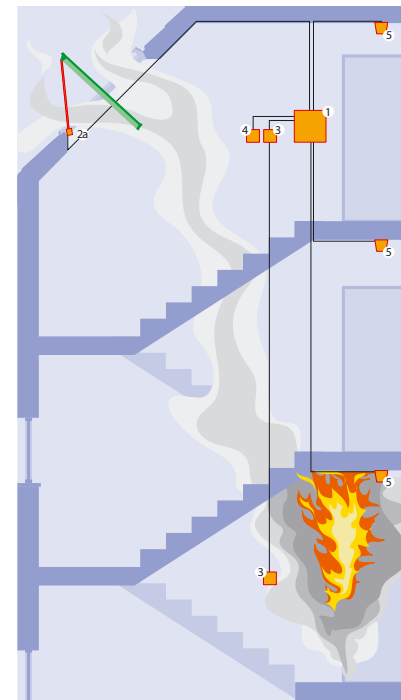
The functioning system with roof window equipped with motor.

Installation

To install the smoke ventilation system, the control unit RZN 4402K has to be connected (with the use of two-core cable) to the supply unit (230 V). Next the control unit RZN4402K with different cables has to be connected with:

- Smoke sensor OSD23 – 2 x 1 m²;
- Chain motor KA 21/500 (KA21/600) - 3 x 1.0 mm²;
- Alarm push button RT42 – 5 x 1 mm²;
- Ventilation push button – 3 x 1 mm².

The quantities of the cable are supplied according to the client's needs. The system of electric connections is described in the fitting instructions of the smoke ventilation unit and included in the package. Only qualified electricians are authorised to install and maintain such systems. In order to secure proper functioning, the system should be checked every six months. All elements of the system are certified and their application in buildings is authorised.

Other options

The rain sensor ZRD can be connected to the Smoke Ventilation System. It closes the open window during the rain, provided that the window is not previously opened by the smoke sensor signal or by the alarm button, which override the rain sensor signal. Depending on the number of windows which function as smoke ventilation flaps there are various configurations of the smoke ventilation system possible.

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Smoke Ventilation Window FSP

The smoke ventilation window design is very similar to the FW roof access window. The most important feature which identifies the smoke ventilation window from other windows is the placement of its hinges in the bottom edge. The functioning of the smoke ventilation window resembles a reversed top hung window. The window is equipped with an electric motor, which automatically opens the window after a signal (of the smoke sensor) from the control unit of the smoke ventilation system is received.

The most important feature of the smoke ventilation window design is the window sash, which protects the roof opening (when the system is activated) against the effects of a strong lateral wind. Additionally, the application of the gas springs makes the installation easier and assists the performance of the electric motor employed to open the window.

The handles used to open the window manually are not necessary (when electric motor is applied) but they facilitate the installation of the sash. Application of the electric motor in the smoke ventilation window allows the possibility of everyday room ventilation. The smoke ventilation windows which are used as ventilation flaps are usually installed in stairways. The window has to be installed in such a way that all the window edges are below the roof ridge level.

The smoke ventilation window has been created in response to proposed new EU building fire regulations, which may soon be effected. These regulations consist of 10 norms (EN 12101) which concern the requirements of using smoke ventilation flaps with specifications of their design, manner of opening and the type of flap depending on the roofing material.

According to the Norm 12101-2 the minimum surface of smoke ventilation opening should be 1m². There are three standard Fakro roof window sizes (10,11,12) which fulfil this condition.

Features

- manufactured according to EN 12101-2:RE1000(+1000), SL500, WL1500, T(00), B300;
- maximum sash opening pitch 75° in 51 seconds, when fully loaded;
- suitable for roofs with pitches between 25° and 60° with special flashing
- made of wood, vacuum impregnated with two coats of acrylic lacquer;
- it is recommended to be installed by two people (because of the substantial window weight).

Technical specifications	FSP
window U-value	1.4 W/m²K
glazing U-value	1.0 W/m²K
acoustic insulation Rw	32 dB
glazing	4H – 16 – 4T
low emission coating	+
inert gas filled panes	+
toughened glass	+
varnishing	twice
seals	two

Technical specifications	Electric motor SP8
reach	350 mm
power supply voltage	24 V DC
maximum output current	1,1 A
strength of pushing out the sash	800 N
strength of pulling	400 N
operating speed	7 mm/s
operating temperature	(– 5°C to 75°C)
power cable	2 x 0,75 m² (1m)

Sizes of standard windows

external windows dimensions	78x140	94x140	114x118	114x140	134x98
max actual smoke ventilation surface [m²]	0,53	0,65	0,67	0,80	0,65
illumination area [m²]	0,91	1,12	1,15	1,38	1,11
eactual glazed area [m²]	0,72	0,92	0,94	1,16	0,91
window symbol	**07**	**09**	**10**	**11**	**12**

FSP

	+	+	+	+	+

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Non-standard windows FSP – Additional charges

Description of products	Additional charges	🚚
Window with wooden elements		
painted in colours of RAL spectrum	Add a surcharge of 20 % to the price of window FSP	20
painted with lazulite lacquer	Add a surcharge of 30 % to the price of window FSP	25*
with mahogany wood woodwork	Add a surcharge of 45 % to the price of window FSP	15
Window with claddings		
painted in colours of RAL spectrum	Add a surcharge of 20 % to the price of window FSP	15
with metal covering copper Cu	Add a surcharge of 30 % to the price of window FSP	15
with metal covering titanium-zinc TC	Add a surcharge of 20 % to the price of window FSP	15

The set consists of: window, two motors and fitting console

Sizes of standard flashing

Window dimensions [cm]	78x140	94x140	114x118	114x140	134x98
windows symbol	**07**	**09**	**10**	**11**	**12**

ESS flashing for thin, flat roof coverings

	+	+	+	+	+

🚚 15

EZS flashing for tiled and metal sheeting roof coverings

	+	+	+	+	+

🚚 15

EHS flashing for high -profiled coverings

	+	+	+	+	+

🚚 15

ELS flashing for slate roof coverings

	+	+	+	+	+

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Non-standard flashings – Additional charges

Description of available flashings	Additional charges	🚚
Flashing with RAL palette colour	Add a surcharge of 60% to the price of flashing EZS	20
Flashing of titanium-zinc TC	Add about 200% to the price of flashing EZS, depending on the raw material market prices	20

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Chain motors KA21/500, KA21/600
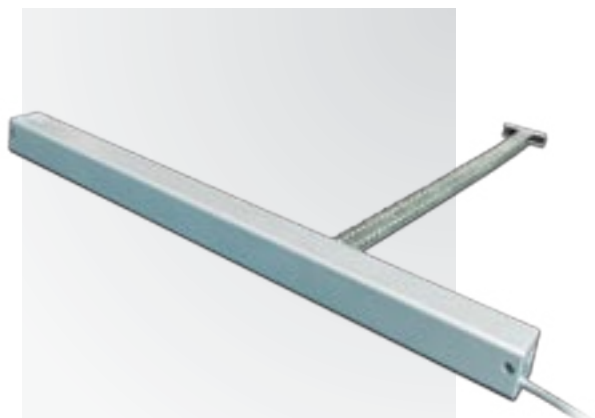
The KA 21/500 and KA 21/600 motors are designed to operate in difficult conditions. The appropriate resistance to adverse conditions and the 50 cm and 60 cm chain reach make it suitable for operating Fakro windows to expel smoke and heat from rooms. The motors are characterised by low consumption of electricity and are fitted with an internal anti-overload system.

Technical specifications:	KA21/500	KA21/600
▪ chain reach	500 mm	600 mm
▪ powered with a voltage	24 V DC	24 V DC
▪ rated current	1 A	1 A
▪ output power	12W/30W	12W/30W
▪ strength of pushing out the chain	250 N	250 N
▪ strength of pulling the chain	150 N	150 N
▪ chain speed	100 mm/8s	100 mm/8s
▪ operating temperature	– 5° C to 74° C	– 5° C to 74° C
▪ fire resistance	30 min/300C	30 min/300C
▪ silicon power cable	2.5 m	2.5 m
▪ dimensions	496 x 50 x 40 mm	546 x 50 x 40 mm
▪ weight	2.2 kg	2.4 kg

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*Device works only with RZN smoke ventilation unit

Smoke ventilation control units RZN 4402-K, RZN 4404-K, RZN 4408-K

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Designed to control a chain motor in case of fire, and also for normal ventilation. Can have the following components connected to it: OSD 23 smoke sensor, VRD 10 rain sensor, RT 42 alarm push buttons, ventilation switches and other weather and temperature sensors. The unit normally operates in monitoring mode and in such cases it is powered by 230 V mains. In case of fire, the smoke sensor sends a signal to the unit, which in turn automatically activates the motor, and the window is opened to let smoke out of the room. For safety reasons, the control unit has its own (emergency) power source, 2 x 1.2 V / 1.3 Ah, which allows it to operate in monitoring mode for 72hours.

Technical specifications	RZN 4402-K	RZN 4404-K	RZN 4408-K
▪ power supply voltage	230 V AC/50Hz	230 V AC/50Hz	230 V AC/50Hz
▪ output power	up to 60 W	up to 120W	up to 240W
▪ rated current	2A	4A	6A
▪ output voltage	24 V DC	24 V DC	24 V DC
▪ operation temperature	− 5° C to 40° C	− 5° C to 40° C	− 5° C to 40° C
▪ dimensions	250x250x91mm	341x341x91mm	341x341x91mm
▪ weight with batteries	4.12 kg	5.3 kg	11 kg
▪ capacity of battery	2 x 12V/1.3 Ah	2 x12V/2.1 Ah	2 x12V/3.4 Ah

🚚15

Switches, sensors

LT 43U ventilation switch

RT 42 smoke alarm button switch

RT 42 smoke alarm button switch

LT 43U ventilation switch

Used in the ventilation packages, it enables opening and closing of windows equipped with motors connected to control unit RZN 440_ -K. It has been designed as a flat, two-button switch that does not protrude from the wall. Available in white.

Technical specifications:
- dimensions: 80 x 80 mm
- weight: 0.15 kg

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RT 42 smoke alarm button switch

Used for manual ventilation system in case of fire. Equipped with diodes which signal working mode and irregularities in the system.

Technical specifications:
- power voltage: 24 V DC
- current of alarm: 20 mA
- operation temperature: (– 10° C to 50° C)
- dimensions: 124 x 124 x 35 mm
- weight: 0.3 kg

🚚15

ZRD Rain Sensor

ZRD rain sensor ensures automatic closure of the window in case of rain. It can be operated with control unit ZTCiw, RZN 440_-K. The sensor is fitted with a heating element which prevents it from reacting to fog, dew etc. The rain sensor can be applied in smoke ventilation systems, but the signal is not taken into account unless it is working in monitor mode. In case of fire the rain sensor signal cannot influence the window control. The ZRD rain sensor is suitable for installation in an unsheltered position on the roof and exposed to the weather.

Technical specification
- power supply voltage: 8 – 32 V DC
- dimensions: 55 x 50 mm
- power cable: 3 x 0.25 mm² (5 m)

🚚15

OSD 23 smoke sensor

The OSD 23 optical smoke sensor is designed to detect visible smoke which develops during the early stages of fire when material is smouldering , well before the appearance of open flames and a distinct increase in temperature.

The sensor is designed for closed interiors which have no smoke, dust or condensation under normal conditions. However, thanks to the introduction of an analogue system for compensation changes in the environment, it has increased protection against changes in pressure, temperature and condensation. One sensor is sufficient for a room of up to 40 m².

Technical specifications:
- power voltage: 18 – 28 V
- alarm current: 20 mA
- operation temperature range: (– 25° C to 55° C)
- relative humidity: 95 % with 40° C
- dimensions: 115 x 54 mm
- weight: 0.15 kg

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OSD 23 smoke sensor

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