VELUX®

KFC 305/310

BR-SC008-01/BR-SC009-01

Instructions for
VELUX control system for smoke ventilation

ENGLISH

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Rev 0.02 09.04.2025

CE

VELUX

VELUX SV Control system KFC 305/310 **DoC 940447-00**

EU Declaration of Conformity

We herewith declare that VELUX control units KFC 305 (BR-SC008) and KFC 310 (BR-SC009) for smoke ventilation windows

- are in conformity with the Low Voltage Directive 2014/35/EU, the EMC Directive 2014/30/EU and the RoHS Directive 2011/65/EU,
- have been manufactured in accordance with the harmonised standards
  - EN 61000-6-1(2007),
  - EN 61000-6-2(2005) + corr1(2005),
  - EN 61000-6-3(2007) + A1(2011) + A1/AC(2012),
  - EN 61000-6-4(2007) + A1(2011),
  - EN 50130-4(2011),
  - EN 61558-2-16(2009) + A1(2013),
- have been manufactured and approved in accordance with standards
  - ISO 21927-9(2012)
  - EN 12101-10(2005) and
- have been assessed in accordance with the harmonised standard
  - EN 63000(2018).

When one of the above-mentioned VELUX control units is connected to a VELUX smoke ventilation window or rooflight, the total system is to be considered as a machine, which is not to be put into service until it has been installed according to instructions and requirements. The total system complies with the essential requirements of the Directives 2014/35/EU, 2014/30/EU and 2006/42/EC of the European Parliament and Council.

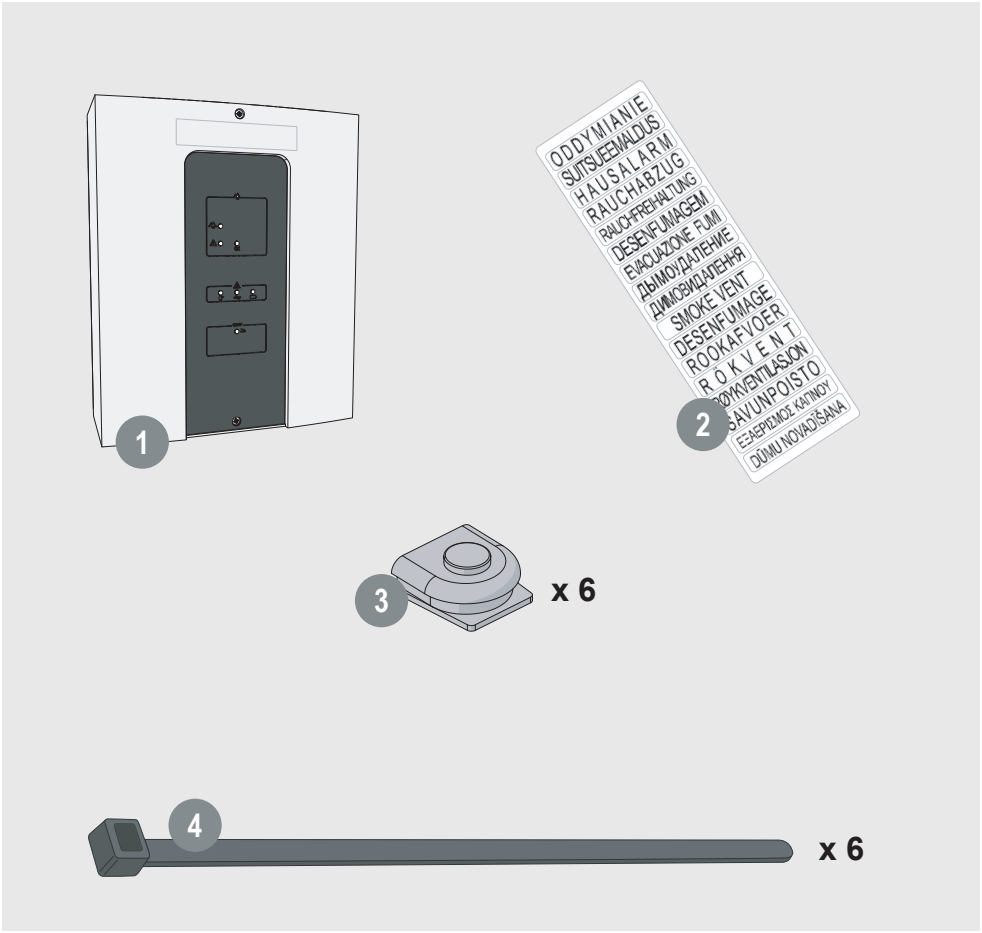
The control units also comply with the Construction Products Regulation (EU) No. 305/2011. For Declaration of Performance, please go to www.velux.com/ce.

VELUX A/S Jens Aksel Thomsen
(Jens Aksel Thomsen, Advanced Certification Specialist)

Ådalsvej 99, DK-2970 Hørsholm 10-03-2025

PDM/05-03-2025

Contents of the packaging



1. Control unit for smoke ventilation KFC 305 or KFC 310 - see type designation on the control unit.
2. Multilabel
3. Rubber bushes for cable entries
4. Cable ties for strain relief

IMPORTANT INFORMATION

Read instructions carefully before installation and operation. Keep instructions for future reference and hand them over to any new user.

General description

The control unit can be used for electrical opening of VELUX smoke ventilation windows GGL/GGU and CSP.
Can also be used for VELUX electrical exit window CXU.

The control unit has different inputs with line monitoring which can be activated by e.g. break-glass points, smoke detectors, heat detectors, AFA systems and BMS systems.

For control of the indoor climate (comfort ventilation) manual switches can be connected.

By means of LEDs in the the front panel the control unit indicates the operating condition “OK” operation and error- and alarm condition, just as it by means of the built-in potential free relay contacts can relay operating information about “OK” operation and error- and alarm condition to other systems in the building.

The polarity of the motor supply is reversed when opening or closing.
The control unit has built-in 72 hours battery back-up.
By a unique bus system consisting of a 4 wire cable the control units can be mutually connected so that up to 35 control units can be connected and operate as an integrated system.

If the temperature in the control unit exceeds 75 °C, the control unit will enter ALARM condition.

Connection of cables to the in- and outputs of the control unit is described in the connection drawing on page 8-9. A more detailled connection to the individual in- and outputs is described in the individual sections in this manual. Selection of cable sizes on pages 25.

By means of jumpers and DIP switches the control unit has different setting possibilities for in- and outputs. These settings are indicated in a complete table (please see section with Jumper settings on page 23).

The maximum power consumption of windows dictates the maximum number of windows that can be connected to the control units:

		Maximum number of windows		
VELUX window type	Current per window	KFC 305 5 A	KFC 310 10 A	2 x KFC 310 20 A
GGL/GGU 40D	2.5 A	2	4	8
CSP	10 A	N/A	1	2
CXU	4 A	1	2	4

Safety rules during installation and operation

The control unit may only be installed and maintained by personnel authorized for installation of automatic electrical smoke ventilation equipment.

Explosion danger

The control unit is supplied with back-up batteries, which contain large amounts of energy which can be released as explosion in case of wrong handling - the following safety rules must therefore always be observed:

- Never short-circuit a back-up battery.
- Do not use external chargers on installed batteries. If unauthorized chargers are used explosive gasses can be released from the battery.
- Do not drop back-up batteries as strong acids can be released if they are broken.

Installation

The control unit can weigh up to 7.5 kg and must be installed on a stable wall. The mounting holes for wall mounting are placed on the metal plate underneath the platic lid. When mounting several control units side by side, the distance between them must be min. 30 mm.

All cables are connected according to the drawing on page 8-9 and are dimensioned according to table page 25.

If cables are passed through the back plate, the edges of the plate must be lined with edge bands to protect the cables.

Please be aware that it often may be required (in order to keep the demands on the CE marking of the complete installation or another law) that the control unit is supplied with 230VAC from separate powerline with its own ground error circuit interruper, and that a repair interrupter is mounted on the motor line.

After connection the control unit must charge the batteries min. 12 hours before complete testing.

Yearly requirement of maintenance and control (authorized)

The functions of the control unit and the opening system must be tested by authorized personnel at least once a year. The control unit informs when the maintenance should be done. Then the external LEDs on the front panel are running. The control unit and opening system are of course still full operating. Please call a service technician at your earliest convenience in order to carry out the maintenance and to test the control and opening system, in order to prepare it for another year of operation. The legal requirements for this must be observed and the testing and control must as a minimum include the following:

- Control that all opening systems move to full opening when the alarm condition is activated.
- Control of the batteries. If the batteries are replaced it is important to use the same type as the batteries are carefully chosen to be able to deliver the current, for which the control is specified.
- Control of in- and outputs on the control.
- Control of break-glass points and smoke detectors.

Batteries

The batteries should be replaced as required, however at least every third year!

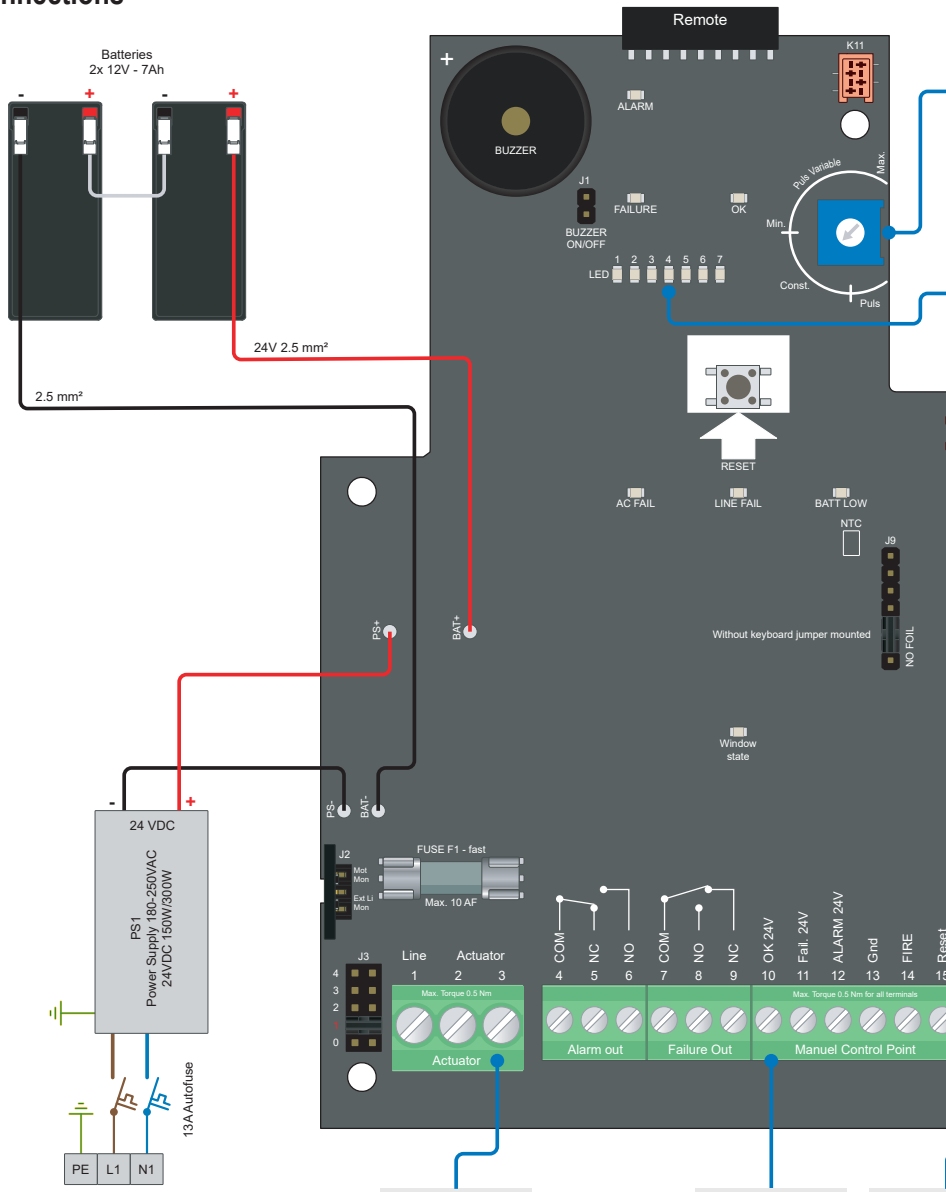
Use the same brand.

In order to protect the batteries from discharging during the installation phase, the control unit will automatically switch off at a battery voltage of 17V and switch on again at 18V.

If the batteries have been discharged below 19V, the battery fault LED will flash rapidly. This indicates that the batteries are low, and can be reset by setting DIP 4 “Service T” ON/OFF.

To avoid a false indication, it is advisable to start the control unit on battery first.

Overview diagram of control unit and connections



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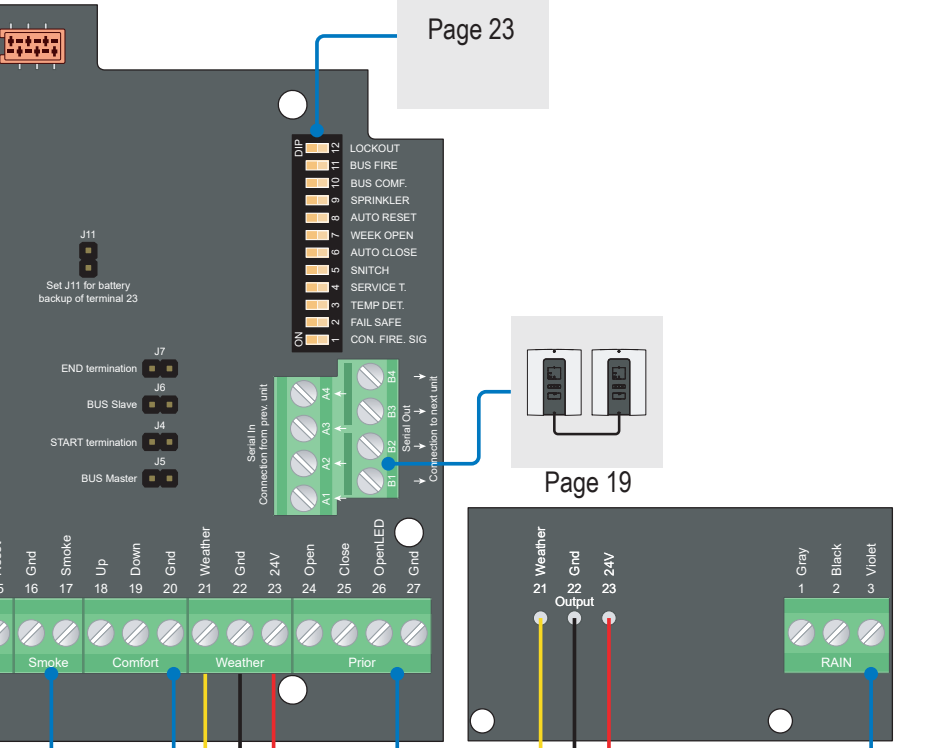

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Installing the enclosure

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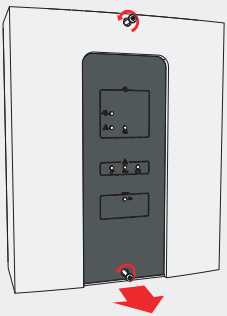

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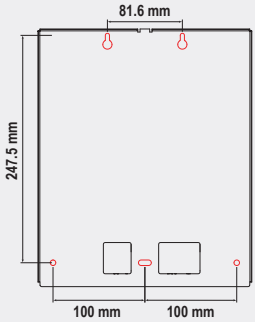

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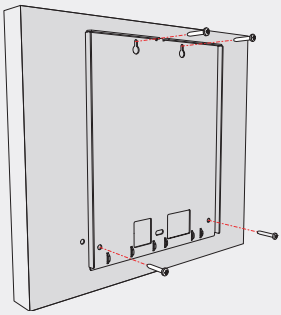

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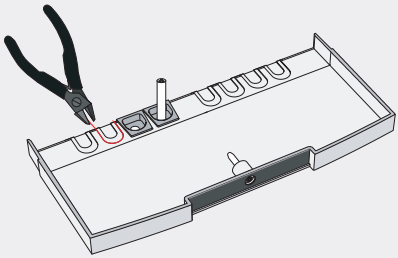

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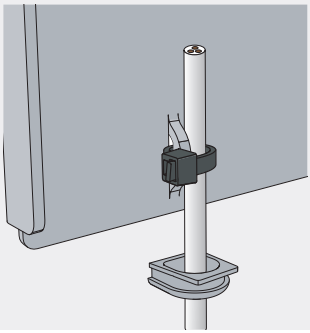

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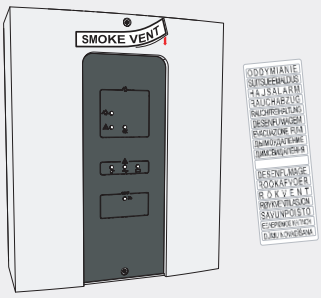
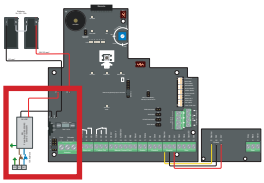
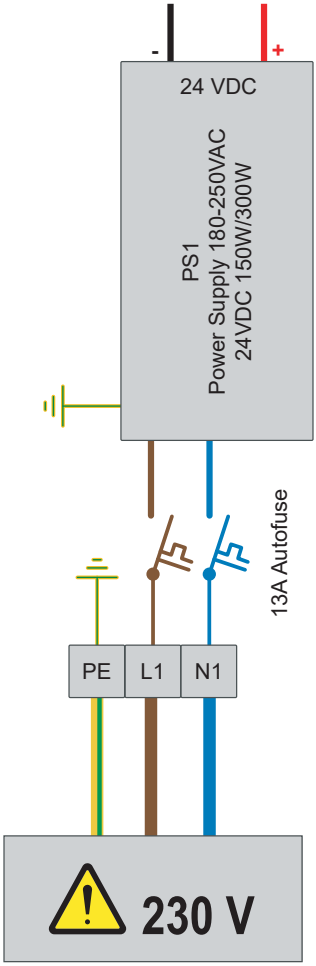
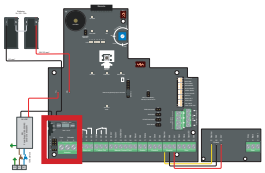




Connection to mains voltage 230 V input

⚠ Take all necessary actions to comply with current local requirements (contact a qualified electrician, if necessary).

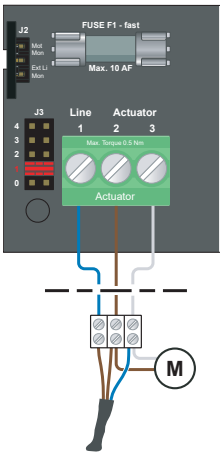




Connection to Actuator outputs and line monitoring

M

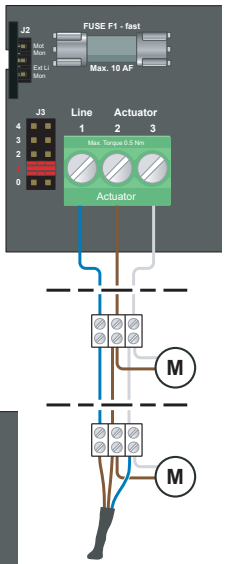
The motors must be connected to the Actuator output on the terminals 2-3.
It is possible to connect and disconnect the line monitoring on the Actuator output (the factory setting is “connected”). The cables to the motors can be connected in series or parallel or a combination of these.
Note: In case motors operate in the wrong direction, transpose the **two** motor cables in the terminal.



Cable monitoring (line monitoring) on the Actuator output
The control unit is equipped with 3 possible settings for cable monitoring (line monitoring), which can be configured by means of Jumper J2.

J2 is factory mounted with All Wire Jumper
Line monitoring between terminal 1, 2 and 3.
This setting is correct for GGL/GGU and CSP.

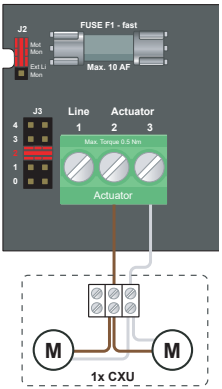
Jumper J3 is set according to the number of end modules to be detected – 1 to max. 4 lines can be detected by moving Jumper J3 – this means that the cable installation between the control unit and the motors can be established in star connection (cable connection from e.g. window 1, further to window 2, etc.), or parallel connection (cable connection from each window to the control unit), or a combination of these. This setting demands 3 wire cable from Actuator output to motor.



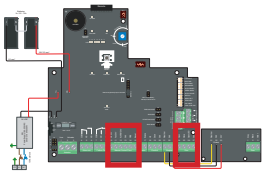
No line monitoring
To disable line monitoring set Jumper J3 to position 0.
Note: It is recommended that line monitoring should always be activated wherever possible.

LED 4 indicates if there is any fail on the Actuator output.
Steady light if wire is broken.
Flashing fast in case output is connected to earth.
Flashing slow if output is shorted.
Note: When Flashing RESET or close is not possible

Correct settings for CXU:
- Remove All Wire Jumper from J2.
- Move J3 extra Jumper from position 4 to J2 position “Mot Mon”.
- For one CXU move Jumper J3 from position 1 to position 2.
- For two CXU move Jumper J3 from position 1 to position 4.



Connection and operation of Fireman´s Priority Switch - KFK 31x



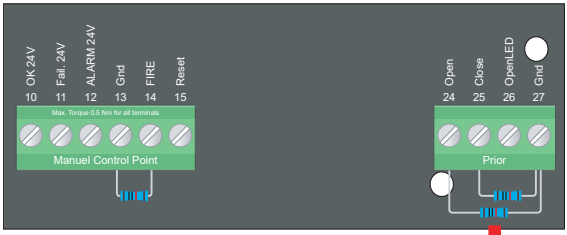
Up to 10 Fireman's Priority Switches can be connected to each control unit.
The Fireman's Priority Switch is an override switch, which makes it possible for the Fireman to control the control unit regardless of sensor inputs.

Connection/function

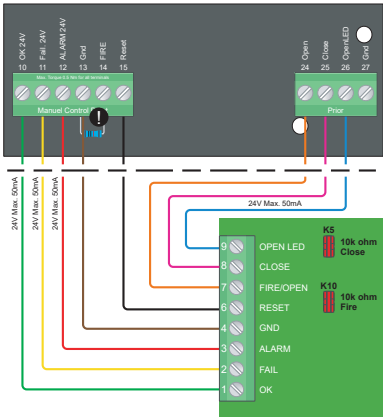
- The CLOSE-switch activates the control unit in close condition for 180 seconds, and the control unit stays in fire mode.
- The OPEN-switch activates the control unit in open condition if not in fire mode, and the control unit enters fire mode.
- The LED output is activated in open condition (windows are open).
  When motor is moving up or down LED flashes with 1 flash/sec. in case of fail LED flashes with 10 flash/sec.
- OPEN and CLOSE switches have line surveillance.
- The input is not a part of Configure Break-glass point DIP 1 = the input is active between 0-3 kΩ.

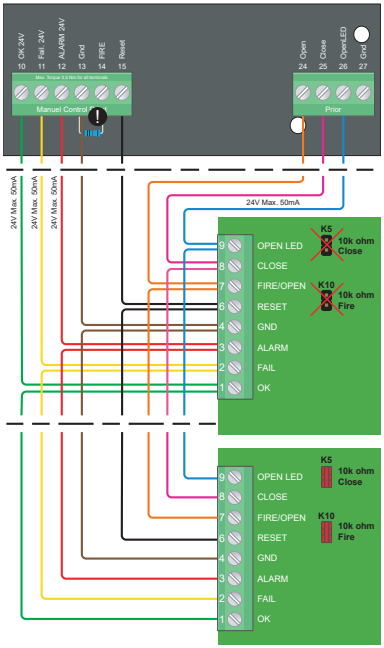
1

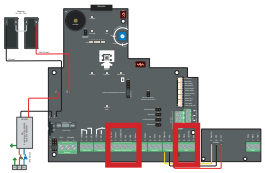
Remove the factory mounted resistors from the terminal strip 24-27. Only keep K5 and K10 on the last Fireman's Priority Switch (by this 10 kΩ resistors are also connected).



2 Connection of the Fireman's Priority Switch is made as shown on the drawing

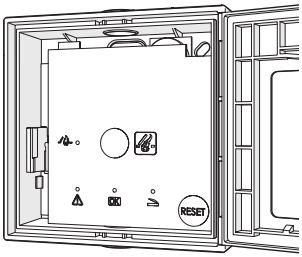






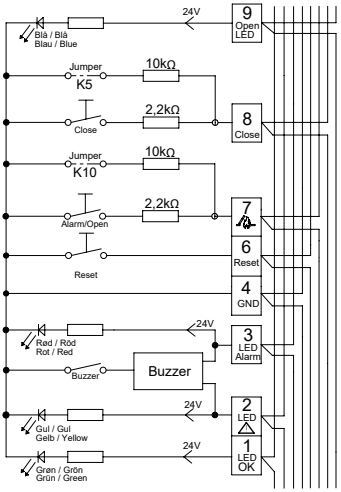
Connection and operation of break-glass points - KFK 30x

Up to 10 break-glass points can be connected to each control unit.
The break-glass point will generally contain the following:



- Breakable glass window and red control button is activated by pressure - this puts the control unit in ALARM condition, by which the Actuator output is activated (for normal service and testing the lid can be opened with a key).
- RESET button which brings the control unit out of the alarm condition and starts the closing sequence for 180 seconds. Please note that RESET does not cancel errors on the system, e.g. line errors etc. These must be found and corrected.
- RED LED indicates that the control unit is in ALARM condition and that the Actuator output either is or has been activated.
- YELLOW LED indicates faults on the system - please call for a service technician.
- GREEN LED indicates that the system is in normal operation condition without errors.

Connection of the break-glass point is made as shown on the diagram.
NOTE: Always connect the break-glass points in a row!
The installation with break-glass points must be terminated with a 10 kΩ resistor in the last switch in order to establish the line monitoring correctly – this can either be done by moving the factory mounted resistor from the terminal strip to the last break-glass point, or by setting K10 (by this a 10 kΩ resistor is also connected). Jumper K5 has no function. All jumpers are factory fitted on delivery if a break-glass point type KFK is used. If no break-glass point is used, the 10 kΩ resistor must remain in the control unit.
By means of dip switches the control unit has different possibilities of settings for the input from the break-glass point:



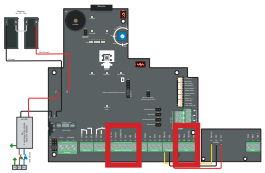
DIP 1 (CON. FIRE. SIG):
On = ALARM condition from 500Ω-3 kΩ, (indication of line error by direct short circuit or open circuit).
Off = ALARM condition from 0-3 kΩ (indication of line error by open circuit).

DIP 2 (FAIL SAFE):
On = Any line error on break-glass point or smoke detector puts the control unit in ALARM condition. This function can be used if cables to break-glass points and smoke detectors are not fireproof.
Off = An error condition does not report ALARM condition.

KFK
9: Open
8: No application
7: Break-glass point emergency opening
6: Break-glass point reset
4: GND (-)
3: Red LED alarm (emergency opening)
2: Yellow LED (lights on error)
1: Green LED OK (lights when OK and while closing)

Jumper K10 may only be set in the last or only Break-glass point

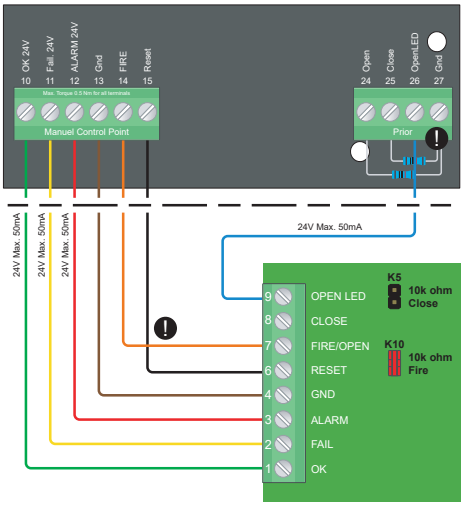
Connection and operation of break-glass points - KFK 30x

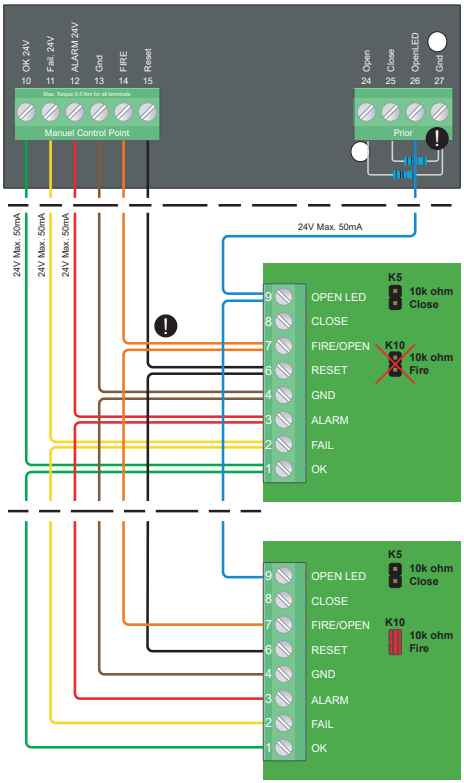


1

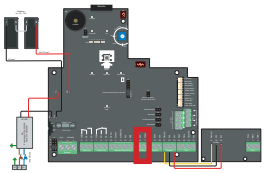
Remove the factory mounted resistor from the terminal strip 13-14. Only keep K10 on the last break glass point (by this a 10 kΩ resistor is also connected).

2 Connection of the break-glass point is made as shown on the drawing



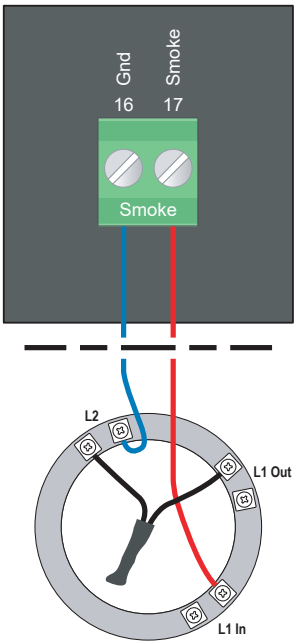


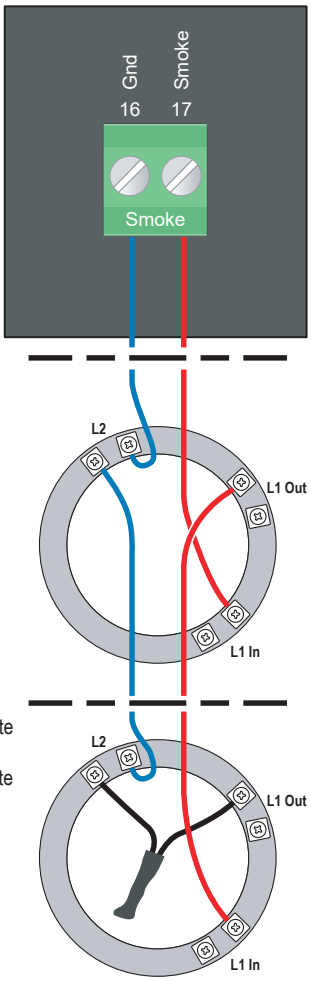
Connection of smoke detectors - KFA



Up to 22 detectors can be connected to each control unit. Smoke detectors are connected as shown.

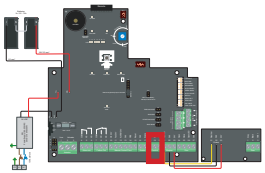
Line monitoring:
Correct line monitoring can only be guaranteed with detectors delivered from VELUX. Other detectors may have different internal resistances and stand by power consumption.
Move the factory mounted end module to the last detector.





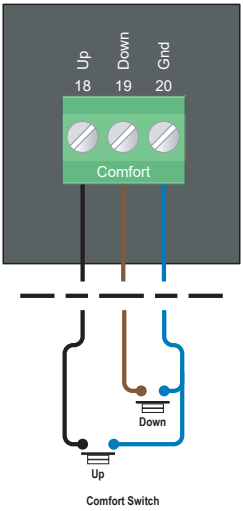
DIP 1 (CON. FIRE. SIG):
On = A short circuit of the smoke detector input will generate a line error
Off = A short circuit of the smoke detector input will generate alarm

Connection and settings of comfort ventilation - KFS



The Actuator output can be controlled separately with a comfort switch.
For comfort ventilation there are the following possibilities:

Room thermostats, weekly timers, BMS and other external control equipment for comfort ventilation can be connected on the input of the comfort control.



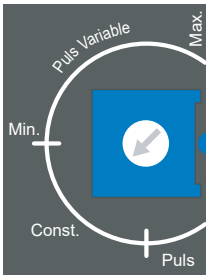
Comfort Switch

Potentiometer in Puls position:
It is possible to press the “up” button up to 3 times. Each press extends the opening time by 6 seconds, totalling a maximum of 18 seconds of opening time. After this, nothing more will happen.
Continuous press on »up« signal gives 3x6 sec.=18 sec.
One short press on »down« closes the motor completely for a period which is 18 sec. longer than the complete opening time.
In order to avoid »motor pumping« max. 3 successive closing attempts will be allowed.

Potentiometer in Constant position:
As long as »up« signal or »down« signal are given, the motors are running.
’Const.’ (Constant) mode is a mandatory setting when connected to CXU.

Potentiometer in Puls variable position:
The time on the above mentioned pulse opening can be adjusted from 0-60 sec. on the potentiometer.

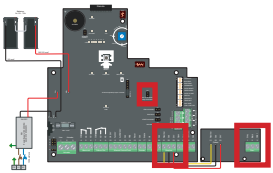
Potentiometer for comfort feature



When moving the potentiometer into the different positions the LED batt low will flash for about 4 sec. to indicate when in Puls mode. LED line fail flashes 4 sec. when in Constant and AC fail flashes when in Puls varaiable.

Auto close time:
Set DIP 6 to “ON” to enable automatic closing of windows opened for comfort ventilation.
Fixed opening time is 10 minutes.

Connection of rain sensor / Close all function - KLA 200

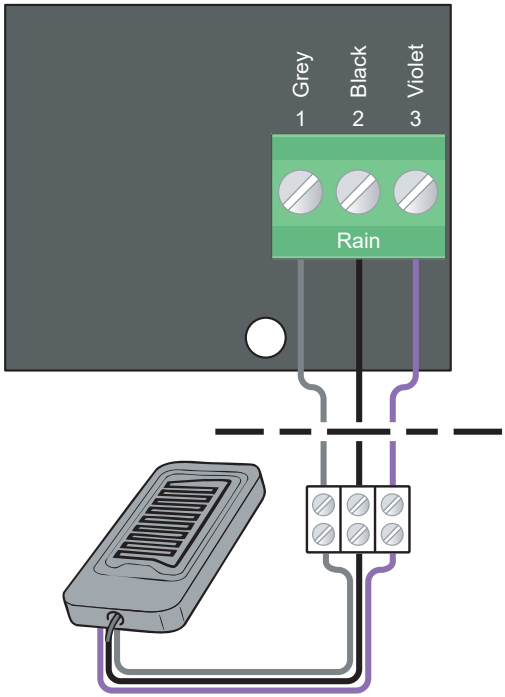


VELUX rain sensor KLA 200 can be connected to the control unit.

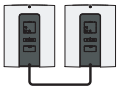
LED 3 on the main board indicates rain - lights as long as input is active.

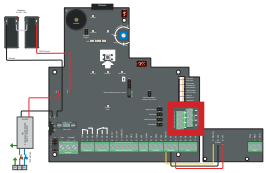
During rain, windows cannot be opened with comfort switches.
The rain sensor closes on all controls which are connected through bus connection.

Mains fail will close all windows.

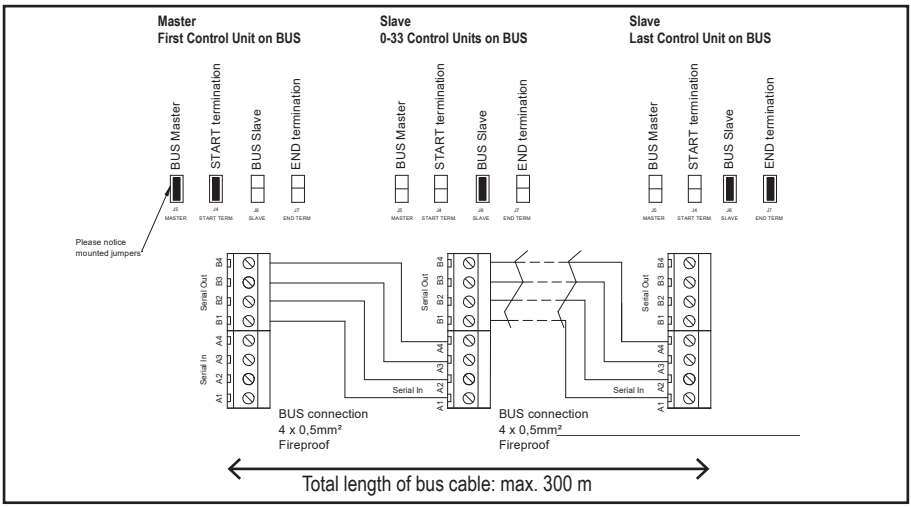


Connection of more control units to one fire group (bus connection)





Up to 35 control units can operate as a complete system via a 4-wire bus connection, such as a 4 x 0.5 mm² fireproof cable. Terminals A1–A4 handle incoming connections, while B1–B4 handle outgoing connections.
In the first control unit, Jumper J4 must be enabled. Any control unit can serve as the Master, in which case J5 must also be enabled. The bus cable connects from the first control unit terminals (B1–B4) to the next control unit, which is a Slave, where J6 must be enabled. The cable connects to the input terminals (A1–A4) of the Slave and continues to the next control unit.
In the final Slave unit, both J6 and J7 must be enabled to terminate the bus connection. See illustration below.

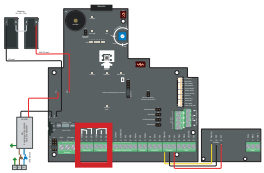


ALARM: Alarms from break-glass points or smoke/heat detectors are handled locally. When DIP 11 is enabled, the control unit will enter alarm state if another unit on the bus does so.
RESET: Activating the reset button on any control or break-glass point triggers a reset across all connected control units, initiating the closing function on all Actuator outputs for 180 seconds.
COMFORT: Comfort control operates locally on each control unit. When DIP 10 is enabled, the control unit will respond to any comfort signal sent via the bus from another control unit.
Rain sensors, if connected, affect all control units on the bus regardless of DIP settings.

Function description for control units with bus connection:
When multiple control units are connected via a bus, the following behaviors are monitored and communicated:

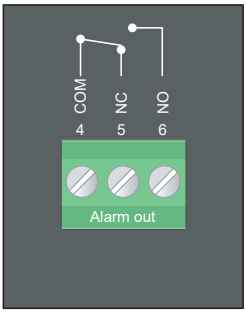
- A bus error lights LED 7 on the main board.
- A bus error places all connected control units in error condition (line error).
- If any control unit enters alarm condition, all control units go into alarm condition.
- Specific error conditions (line error, AC error, battery error, or bus error) in one control unit cause all control units to display the error. The error type is shown on the front plate board of each unit:
  - Units not causing the error flash the OK LED alongside the error indication.
  - The unit causing the error has its OK LED turned off.

External signal output, connection to AFA systems and other control systems



Alarm Output

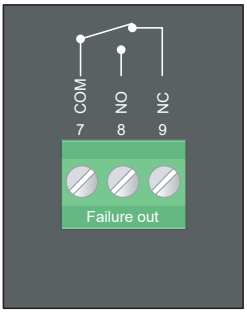
The control unit can forward alarm condition to external connected systems by means of potential free contacts on the terminals 4 (COM), 5 (NC) and 6 (NO).



Potential free ALARM switch.
COM + NO connected on alarm.
Max. (30Vdc 5A) / (250Vac 5A)

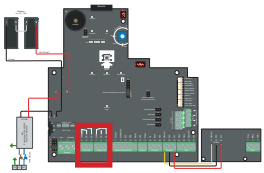
Failure Output

The control unit can forward failure condition to external connected systems by means of potential free contacts on the terminals 7 (COM), 8 (NO) and 9 (NC).



Potential free FAILURE switch.
COM + NO connected on failure.
Max. (30Vdc 5A) / (250Vac 5A)

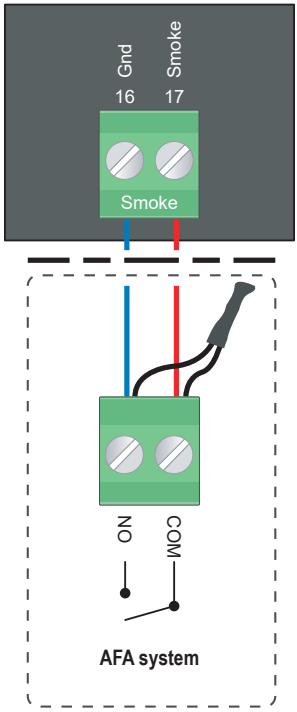
Alarm and error contacts work parallel on all control units connected with bus connection.



External signal output, connection to AFA systems and other control systems

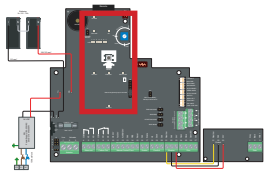
Connection from AFA systems

The control unit can receive potential free contact alarm signals from e.g. AFA systems on Terminal 16 and 17.
End module must be fitted on the contact in the AFA system.



Auto reset

When setting Auto reset (DIP 8) to “ON”, an automatic reset is performed 2 seconds after the alarm signal is removed.



LED indication on main board and front panel and operation possibilities

LED/colour	Symbol	Explanation	Comfort ventilation possible?
LD1/red		Lights when window opens	N/A
LD2/green		Lights when window closes	N/A
LD3/red		Lights when rain is detected	No
LD4/red		Line error on Actuator output (red). Lights when output has open circuit, flashes at earth fail or when short circuit occur. When flashing it is not possible to close the Actuator output (see page 12).	No
LD5/red		Line error on break-glass point (red). Lights when break-glass point has line error, flashes when Fireman's Priority Switch has line error.	Only close
LD6/red		Line error on smoke detector (red). Lights when smoke detector has line error, flashes at temperatures above 75 °C	Only close
LD7/red		Bus error (red). Lights when bus signal from other control units is missing. Only relevant if J4-J7 is mounted.	Only close
Green Board + Front	OK	**lights** if everything is ok **switched off** by local error on this control unit **flashes** by error message from other control units received by bus	Yes
Yellow Board + Front	⚠	**Fault** **lights** by local error on this control unit or by error message from other control units received by bus	Only close
*Yellow Board + Front		**Line error** **flashes** by local error on this control unit and if the ribbon cable or Jumper is not mounted on J9, or by error message from other control units received by bus	Only close
*Yellow Board + Front		**AC error** **flashes** by local error on this control unit or by error message from other control units received by bus	Only close
Red Board + Front		**Alarm** **lights** red constantly	No
*Yellow Board + Front		**DC error** **flashes at normal speed (1 flash/sec)** by local battery error on this control unit or by error message from other control units received by bus **flashes at high speed (10 flash/sec)** by battery voltage below 19V. Reset by DIP 4: OFF/ON	No
Blue Board + Front		**lights** blue constantly in open condition (when windows are open) **flashes** when motor is moving up and down	N/A
Yellow / Blue		**flashes** when internal memory fail is detected	Yes
Lights with*		Time for yearly service - please call for supplier (flashes fast)	Yes

Fuse Specifications

Placement / Fuse value	24V
F1 10A fast acting fuse	1 pcs. for 24V Actuator output

Jumper settings

	Text on board	Factory set/ mounted	Mounted / ON function	Dismounted / OFF function
DIP 1	Conf. Fireswitch	No	Break-glass point active from 0.5-3 kΩ. A short circuit of the smoke detector input will generate a line error	Break-glass point active from 0-3 kΩ. A short circuit of the smoke detector input will generate alarm
DIP 2	Failsafe	No	Line error on break-glass point or detector puts the control unit in alarm	Normal mode
DIP 3	Temp. Detekt	No	Line error on motor line (upper resistor area) = alarm	Normal mode
DIP 4	Service T	Yes	Service indication 1 year after activation. To reset service timer, toggle the switch from On to Off and back to On	No service indication
DIP 5	Snitch	No	LEDs "remember" errors (line errors, AC/Batt. error, bus error). The LEDs can only be switched off/reset again by setting DIP switch off	Normal mode
DIP 6	Auto Close	Yes	Automatic, time controlled closing of comfort ventilation is on. Fixed opening time is 10 min.	Normal mode
DIP 7	Week open	No	Weekly open (2 sec.) /close (5 sec.) cycle activated. **It is not recommended to use this function with VELUX smoke ventilation windows.**	Weekly open/close not activated
DIP 8	Auto reset	No	Auto reset (see page 21)	Normal mode
DIP 9	Sprinkler	No	Window closes by active detector (opens by activating the break-glass point)	Normal mode - window opens by active detectors or break-glass points
DIP 10	Bus comfort	No	The control unit reacts on comfort signal via bus activity	The control unit does not react on comfort signals via bus activity // NB! Always reaction on weather signal and failures via bus activity and own comfort signal
DIP 11	Bus fire	Yes	The control unit reacts on alarm signal via bus activity	The control unit does not react on alarm signal via bus activity //NB! Always reaction on weather signal and failures via bus activity and own alarm signal (detector or break-glass point)
DIP 12	Lock-Out Mode	No	Slaves can enter Lock-Out Mode	Normal mode
J1	J1	Yes	Internal Buzzer ON	Internal Buzzer OFF
J3 (motor)	0 - 1 - 2 - 3 - 4	Pos. 1	Connect according to number of end modules	No line monitoring - not allowed to dismount. Set to 0 instead
J2 (motor)	Mot Mon	No	2 wire line monitoring via 27kΩ terminal 2-3	No line monitoring - not allowed to dismount. Set J3 to 0 instead
	Ext Li Mon	No	3 wire line monitoring with direct motor connection	
	All Wire Jumper	Yes	Line monitoring between terminal 1, 2 and 3	
J4(Bus)	Start term.	No	First control unit unit in the bus network	See section concerning connection of control units in bus connection, page 19
J5(Bus)	+ Master	No		
J6(Bus)	Slave	No	Middle and last control unit in the bus network	
J7(Bus)	End term.	No	Last control unit in the bus network	
J9	FOIL	Yes	Line monitoring of front cabinet	Line error flashes
J11	BatSup->Ø23	No	Battery backup of terminal 23	Terminal 23 only AC supplied

Special functions

Sprinkler function:
DIP 9 On - With this function activated, the window closes, if smoke detector input is activated.
If the break-glass point is activated, the window opens.

Weekly open/close:
DIP 7 On - the Actuator output opens shortly (3 seconds) once a week and closes immediately after.
This function is used to give the right tension on the packing of the windows to keep them watertight.
It is not recommended to use this function with VELUX smoke ventilation windows.

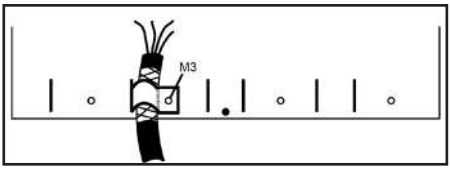
Cable sizes

It is very important to use the correct cable types and sizes to make sure that the fire ventilation system meets the standards and works correct in an emergency.

Fire resistant cables according to IEC 60331 must be used for the following functions:

		Max. cable length
Break-glass point KFK	Min. 7 x 0.5 mm² (0.8 mm)	100 m*
Fireman's Priority Switch KFK	Min. 8 x 0.5 mm² (0.8 mm)	100 m*
Smoke detector KFA	Min. 2 x 0.5 mm² (0.8 mm)	100 m*
Total length of bus cable	4 x 0.5 mm² (0.8 mm)	300 m*

* For cable lengths longer than 100m, properly closed shielded cables must be used..



Normal cables can be used for the following functions:

Supply for control unit 230VAC	F.eks. 3 x 1,5PVIK-J
Comfort ventilation button 24V	Min. 3 x 0.5 mm²
Rain sensor 24V	Min. 3 x 0.5 mm²

Motor cable dimensions

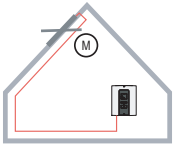
Maximum cable length/prescribed cross-sentional of cables
The maximum allowed cable length between control unit and the motor and the prescribed cross-sectional sizes of the cables are given in the table below. The cable must be fire resistant according to IEC 60331.

Calculation of maximun cable length:
For GGL/GGU and CSP 56 x A/I, for CXU 80 x A/I
A is cable cross-section and **I** is max motor current total.

Allowed maximum voltage drop in the cable: 2 V for GGL/GGU and CSP, 2.9 V for CXU.

Operation current: The total of all motor currents.

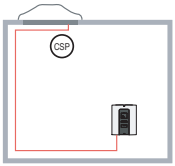
Cable cross-section per motor terminal for smoke ventilation window
GGL/GGU -K-- ---40



Cable cross-section	Max. cable length for number of motors Ⓜ*)			
	Ⓜ 1	Ⓜ 2	Ⓜ 3	Ⓜ 4
3 x 1.5 mm²	33 m	16 m	11 m	8 m
*) 5 x 1.5 mm²	67 m	33 m	22 m	16 m
3 x 2.5 mm²	56 m	28 m	18 m	14 m
*) 5 x 2.5 mm²	112 m	56 m	37 m	28 m
3 x 4 mm²	89 m	44 m	29 m	22 m
3 x 6 mm²	134 m	67 m	44 m	33 m

*) 2 X 2 conductors parallel

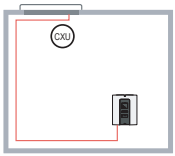
Cable cross-section per Actuator output for smoke ventilation window
CSP



Cable cross-section	Max. cable length *)
3 x 1.5 mm²	8 m
*) 5 x 1.5 mm²	16 m
3 x 2.5 mm²	14 m
*) 5 x 2.5 mm²	28 m
3 x 4 mm²	22 m
3 x 6 mm²	33 m

*) 2 X 2 conductors parallel
Only one smoke ventilation window CSP per Actuator output

Cable cross-section per Actuator output for exit window
CXU



Cable cross-section	Max. cable length *)
2 x 1.5 mm²	30 m
*) 4 x 1.5 mm²	60 m
2 x 2.5 mm²	50 m
*) 4 x 2.5 mm²	100 m
2 x 4 mm²	80 m
2 x 6 mm²	120 m

*) 2 X 2 conductors parallel
Only one exit window CXU per Actuator output

Technical specifications	KFC 305 24V-5A	KFC 310 24V-10A
Power supply	230VAC / max. 1.2A	230VAC / max. 1.7A
Standby consumption	5.9 W	3.0 W
Output supply	24-29VDC	
Motor outputs	1 pcs. (line detecton: 1-4 lines)	
Max. load	5A	10A
Operation temperture	-15°C - +40°C	
Density	IP54	
Battery back-up (72h)	Yes	
Batteries	2 pcs. 12V/7Ah	
Dimensions (WxDxH)	238 x 113 x 286 mm	
Weight incl. batteries	7.5 kg	
Colour	White front / Black indication label	
Fire groups	1 pcs. with line detect. / Max. power consumption for break-glass points (LED+buzzer) = 17.6mA = approx. 10 break-glass points or Fireman's Priority Switches	
Comfort groups	Unlimited number of comfort switches	
Detector (smoke) input	1 pcs. with line detection / Maximal summarized quiescent current 2.2 mA ~ 22 detectors of 100 µA per line. Minimal Alarm current 15 mA Supply voltage Minimum 18 V Maximal 29 V To Full fill the ISO21927-9 detector shall conform to ISO 7240	
Rain sensor input / close all	Yes	
Alarm output	Yes - potential free contact, max. 30Vdc / 5A (250Vac / 5A)	
Failure output	Yes - potential free contact, max. 30Vdc / 5A (250Vac / 5A)	
24V DC for external use	24V DC / max. 0.5A - at 230V operation	
Bus communication	Yes - connection of 2-35 pcs. control units - line detection	
Visual (LED) indication in front panel	"OK" / "AC fault" / "Low battery" / "Line fault" / "Alarm" / "Comfort open" / "Fail"	
Approvals / Conforms	EN12101-10:2005 approved and certified - class A (double supply) - envir. class 1 (to -15°C). According to ISO 21927-9:2012 (except Buzzer) Primary supply: 27-29.5V DC rippel 600mw P/P Secondary supply: 20-27V DC Interruption time: less than 1.5 sec.	
Low Voltage Directive	2014/35/EU EN 61558-1:2006 (2nd edition), EN 61558-2-6, EN 61558-2-16 and EN 60335-1:2012 (4th edition)	
EMC Directive	(2014/30/EU), EN50130-4:2011	

Electrical equipment, accessories and packaging must be sent for recycling for the protection of our environment!
Do not dispose electrical equipment with household waste!
According to European Guideline 2002/96 / EC on electrical waste, this must be disposed separately and sent for recycling to protect our environment.

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