Installation instruction
Control Panel for Fire Ventilation

SVM **EI** 24V
5A / 8A /10A



Fire ventilation

Comfort ventilation

24VDC max. 5A/8A/10A
1 fire ventilation group, 1 comfort group
Connection for manual control points, wind- and rain sensor, comfort switches, smoke detectors and Fireman's Priority Switch.
Possibility for bus connection of 35 control panels

#211534

Actulux

Address of installation

Name:

Address:

Phone no.:

Contact person:

Date of installation:

Installation

Number of control panels and type (ex. SVM EI 24V-5A):

Number of fire ventilation groups:

Type of opening system:

Type of opening system:

Type of opening system:

External controls (AFA-CCS):

Comfort control:

Wind- and rain sensor:

230V power supply from group:

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General description

The control panel can be used for electrical opening of e.g. skylights, smoke hatches or similar in connection with fire- and comfort ventilation.

The control panel has different inputs with line monitoring which can be activated by e.g. fire switches, smoke detectors, heat detectors, AFA systems and CCS systems.
For control of the indoor climate (comfort ventilation) manual switches, weekly timer, room thermostat and outdoor weather sensors can be connected.
By means of LEDs in the the front panel the control 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 panel has built-in 72 hours battery back-up.
By a unique bus system consisting of a 4 wire cable the control panels can be mutually connected so that up to 35 control panels can be connected and operate as an integrated system.

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

Connection of cables to the in- and outputs of the control panel is described in the connection drawing on page 10-11.
A more detailled connection to the individual in- and outputs is described in the individual sections in this manual. Selection of cable sizes on page 17.

By means of jumpers and dip switches the control panel has different setting possibilities for in- and outputs. These settings are indicated in a complete table (please see section with jumper settings on page 13).

Examples of types of openings systems and the max. power consumption which can be connected to the control panel:

Type:	**24V power supply:**
SA Power Single	4A
SA Power Double	8A (2x4A)
SA Power Large	8A
SA Power Mini	2.5A
Others	See specification of max. power consumption on the opening system

Safety rules during installation and operation

The control panel may only be installed and maintained by personnel authorized for installation of automatic electrical fire ventilation equipment.
The installation must be carried out in accordance with standard EN 50173 / ISO/IEC 11801 for generic cabling systems.

Explosion danger

The control panel 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 panel can weigh up to 7 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 panels side by side, the distance between them must be min. 30 mm.
All cables are connected according to the drawing on page10-11 and are dimensioned according to table page 17. Keep in mind that the operating voltage from the control panel is 24V and that the max. voltage drop is 15% which demands correct cable dimension according to table on page 17.
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 panel 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 panel must charge the batteries min. 12 hours before complete testing.
Remember to fil out site specific data and sign.

Yearly requirement of maintenance and control (authorized)

The functions of the control panel and the opening system must be tested by authorized personnel at least once a year. The control panel informs when the maintenance should be done. Then the external LEDs on the front panel are running. The control panel 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 fire function is activated - should not be carried out if the wind is more than 6 m/sec. as there might be a risk that the opening system cannot close automatically.
- 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 fire switches and smoke- and heat 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, this means that during the installation phase the panel 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 Service ON/OFF.
To avoid a false indication, it is advisable to start the panel on battery first.

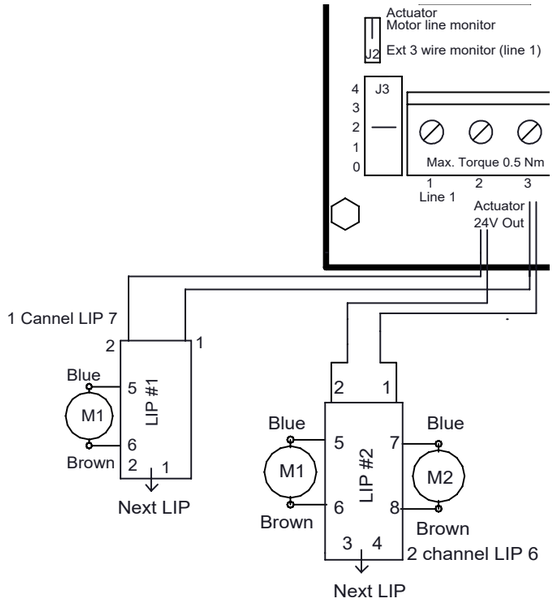
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Connection to motor- (actuator-) output and line monitoring

The actuators (motors) must be connected to the actuator output on the output 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 actuators can be connected in series or parallel or a combination of these (please see drawing with examples or connection diagram on the mid pages).
It is important to keep the right polarity of the cables - The actuators must always be connected through a current limiter, e.g. the Actulux LIP or similar.

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

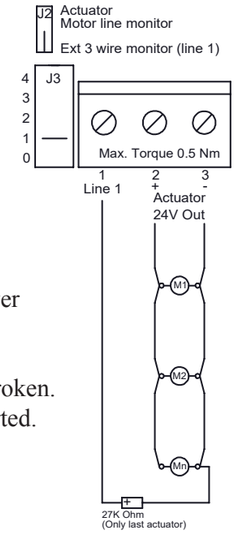
Jumper J2 mounted in pos. »Motor line«
Line monitoring between terminal 2-3.
Jumper J3 (actuator output) is set according to the number of termination resistors (27 kΩ,) to be detected – 1 to max. 4 lines can be detected by moving jumper J3 – this means that the cable installation between the control panel and the actuators can be established in star connection (cable connection from e.g. skylight 1, further to skylight 2, etc.), or parallel connection (cable connection from each skylight to the control), or a combination of these. However, as mentioned max. 4 different lines can be detected each terminated with a 27 kΩ resistor.



For SVM EI 24V-5A:
the max. allowed current is 5A.
For SVM EI 24V-8A:
the max. allowed current is 8A.
For SVM EI 24V-10A:
the max. allowed current is 10A.

	Jumper description
J3	*Number of connected 27Kohm terminal resistors for actuator output*
J2	*Chooses line monitoring through motor terminals 2-3 (Mot Mon) or separate wire terminals 1-3 (Ext Li Mon)*
F1	*Fuse 8A for actuator output*

Jumper J2 in pos. »Ext 3 wire«.
Line monitoring between terminal 1-3:
With jumper J3 (actuator output) it is chosen, how many lines (number of 27 KΩ) you wish to detect - the same way as the motor line.
This setting demands 3 wire cable from motor 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.

Do not deactivate line monitoring in case of a ground fault.
A ground fault on terminal 2 during a closing sequence will result in a damaged PCB.

Current limiter type LIP function and setting (if mounted)

The current limiter type LIP (mounted on the opening system) is used as current limiter between the 24V/48VDC supply and 1 or 2 actuators. When the adjusted current limit is reached, the speed of the actuators is reduced. When the max. power on the actuator is exceeded, the actuator stops.
On the 24V /48V types (LIP5, LIP6 or LIP7) max. 3 times overload cut outs in the same direction is allowed. After that it will not be possible to run in this direction again, before the motor has run in the opposite direction. This in order to protect the actuator gear mechanism.

Please note that when opening, the red LED in the LIP must light. This indicates that polarity to actuator is correct.

LIP settings

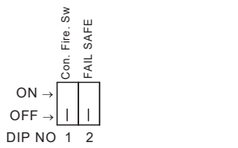
Set according to the type label on the traverse (opening system).

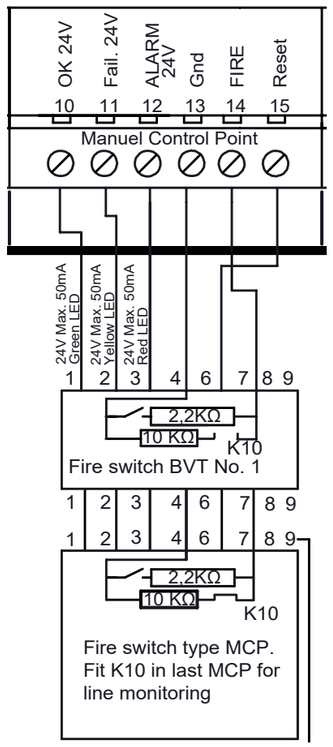
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Operation and connection of Manual Control Points (BVT or MCP)

The Manual Control Point will generally contain the following:

- Breakable glass window and red control button is activated by pressure - this puts the control panel in ALARM condition, by which the motor output is activated (for normal service and testing the lid can be opened with a key).
- RESET button which brings the control panel out of the alarm condition and starts the closing sequence for about 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 panel is in ALARM condition and that the motor 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.



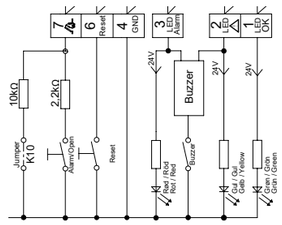


CONNECTION of the fire switch is made as shown on the drawing.
The installation with fire switches must be terminated with a 10 kΩ,or 27 kΩ, resistor in the last switch in order to establish the line monitoring correctly – this can either be done by moving the factory mounted resistor from the terminal strip to the last fire switch or connect **jumper J1** in the fire switch type BVT is mounted (by this a 10 kΩ resistor is also connected) or K10 in type MCP. Jumper K5 (only integrated in MCP) has no function. All Jumpers are factory fitted on delivery if a fire switch type BVT or MCP is used.
* If no fire switch is used, the 10 kΩ, resistor must remain in the control unit.

By means of DIP switches the control panel has different possibilities of settings for the input to the fire switch:
DIP 1 (Conf. firesw.):
ON = ALARM condition from 500 Ω -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 (Failsafe):
ON = Any line error on fire switch or smoke detector puts the control panel in ALARM condition. This function can be used if cables to fire switches and smoke detectors are not fireproof.
OFF = An error condition does not report ALARM condition.

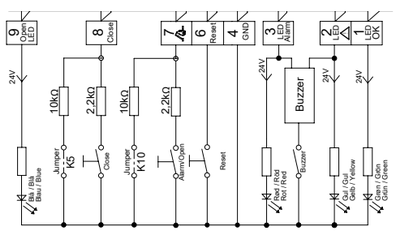
BVT

1 green LED OK (lights when OK and while closing)
2 yellow LED (lights on error)
3 red LED alarm (emergency opening)
4 GND (-)
5 not used
6 fire switch reset
7 fire switch emergency opening
Jumper J1 must only be set in the last or only fire switch



MCP

1 green LED OK (lights when OK and while closing
2 yellow LED (lights on error)
3 red LED alarm (emergency opening)
4 GND (-)
6 fire switch reset
7 fire switch emergency opening
8 no application
9 Open
Jumper K10 may only be set in the last or only fire switch



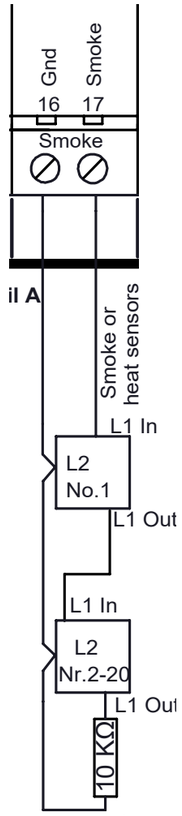
Auto reset

When setting DIP8 On, an automatic reset is performed 2 seconds after the fire signal is removed.
(From software version V1.005)

Connection of smoke-/heat detectors

Smoke- and heat detectors are connected as shown.

Line monitoring: Correct line monitoring can only be guaranteed with detectors delivered from the supplier. Other detectors may have different internal resistances and stand by power consumption.

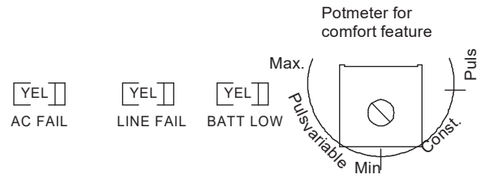


Comfort ventilation – Connection and settings

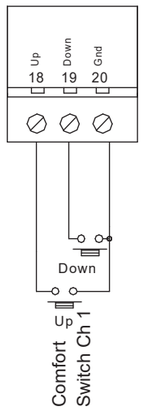
The motor output can be controlled separately with a comfort switch.
For comfort ventilation there are the following possibilities:

Potentiometer in Puls pos.:
It is possible to press the »up« button 3 times, which each gives 6 seconds of opening time - after that nothing happens – Continuous »up« signal gives 3x6 sec.=18 sec.
- One press on »down« closes the actuator completely for a period which is 18 sec. longer than the complete opening time - In order to avoid »actuator pumping« max. 3 successive closing attempts will be allowed.
Potentiometer in Const. pos.:
As long as »up« signal or »down« signal are given, the actuators are running
Potentiometer in Puls variable pos.:
The time on the above mentioned pulse opening can be adjusted from 0-60 sec. on the potentiometre.

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.



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



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Control for Fire and Comfort Ventilation Type SVM EI 24V-5A / 8A / 10A

Connection
SVM EI 24V - 5A/8A/10A

REMOTE

BUZZER

RED ALARM

K11

YEL FAILURE

GRE OK

J1 BUZZER ON/OFF

Max. Pulse variable Min.

Const. Puls

Potmeter for comfort features

RED GRE RED RED RED RED RED

LED 1 Actuator open (red). Lit when actuator is opening.
LED 2 Actuator closing (green). Lit when actuator is closing.
LED 3 Weather sensor active (red). Lit when weather sensor is active.
LED 4 Line failure actuator (red). Lit for line failure on actuator.
LED 5 Line failure fire switch (red). Lit for line failure on fire switch.
LED 6 Line failure smokesensor (red). Lit for line fail. on smokes.
LED 7 BUS failure (red). Lit when local unit is not recieving signal.

See page 12

Batteries 2x 12V - 7,2 Ah

24V Red 2,5mm2

Black 2,5mm2

RESET

J15

YEL AC FAIL

YEL LINE FAIL

YEL BATT LOW

NTC

Keyboard

J9

Without keyboard jumper mounted

NO FOIL

Set J11 for batteri backup of terminal 23

J11

12 LOCKOUT
11 BUS FIRE
10 BUS COMFORT
9 SPRINKLER
8 AUTO RESET
7 WEEK OPEN
6 AUTO CLOSE
5 SNITCH
4 SERVICE TIMER
3 TEMP DETECT
2 FAIL SAFE
1 Con. Fire. Sig

ON → OFF → DIP NO

DIP settings see page 13

BLUE DOME OPEN

END termination J7

BUS Slave J6

START termination J4

BUS Master J5

Serial In A1 A2 A3 A4

Serial Out B1 B2 B3 B4 → Connection to next unit.

Connection from prev. unit.

Bus connection for serial connection up to 35 pcs. control units.

- 24VDC +

PS1
Power Supply 180-250 VAC
24VDC 150W/200W/300W

PS + BAT +

PS - BAT -

Max. 10A
FUSE F1 - fast

Actuator
Motor line monitor
J2 Ext 3 wire monitor (line 1)

13 A Autofuse

PE L1 N1

J3

Max. Torque 0.5 Nm

1 Line 1 2 3

Actuator 24V Out

Max. Torque 0.5 Nm

COM 4 NC 5 NO 6 — Alarm Out

COM 7 NO 8 NC 9 — Failure Out

OK 24V 10 · Fail. 24V 11 · ALARM 24V 12 · Gnd 13 · FIRE 14 · Reset 15 — Manuel Control Point

Gnd 16 · Smoke 17 — Smoke

Up 18 · Down 19 · Gnd 20 — Comfort

Weather 21 · Gnd 22 · 24V 23 — Weather

Open 24 · Close 25 — Prior

OpenLed 26 · Gnd 27

1 Cannel LIP 7

Blue M1 Brown — LIP #1 — Next LIP

LIP #2 — Blue M1 Brown · Blue M2 Brown — 2 channel LIP 6 — Next LIP

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

Potential free Failure switch.
Com + NO connected on failure.
Max (30Vdc 5A)/(250vac 5A)

Extra relay print provides 2 additional potential free contacts each 30V 0.5A

24V Max. 50mA Green LED · 24V Max. 50mA Yellow LED · 24V Max. 50mA Red LED

See Detail A

2,2KΩ 10 KΩ K10 — Fire switch BVT No. 1

2,2KΩ 10 KΩ K10 — Fire switch type MCP. Fit K10 in last MCP for line monitoring

Smoke or heat sensors

L1 In · L2 No.1 · L1 Out

L1 In · L2 Nr.2-20 · L1 Out · 10 KΩ (only last sensor)

Down · Up — Comfort Switch

Wind and rain sensor (Close all)

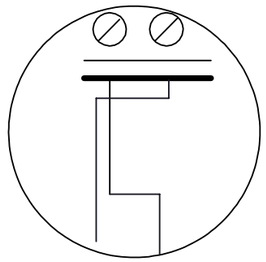
24V Max. 50mA

24V AC/DC

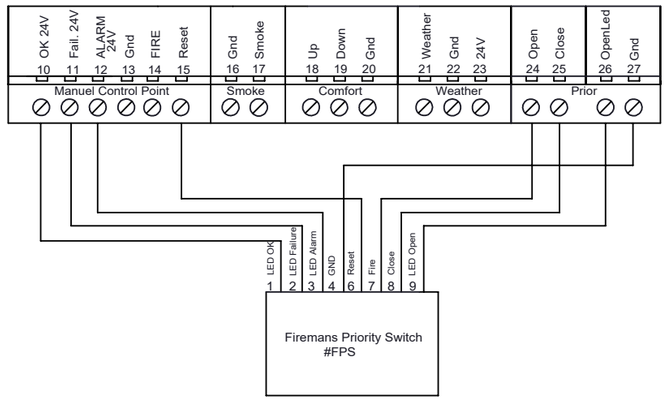
AWR-24

COM NO NC

Detail A



Firemans Priority Switch Connection



Connection diagram SVM EI 24
Drawing: 211863_J

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LEDs on main board and front panel

LED/colour	Symbol	Operation possibilities for:	Alarm/ fire	Comfort operation
LD1/red		Actuator open (red). Lights when actuator opens		
LD2/green		Actuator close (green). Lights when actuator closes		
LD3/red		Weather sensor active (red). Lights when weather sensor is active	Yes	No
LD4/red		Line error on actuator (red). **Lights** when actuator has open circuit, **flashes** at earth fail or when short circuit occur. It is not possible to RESET or close with actuator output (see page 7)	Yes	No
LD5/red		Line error on fire switch (red). Lights when fire switch has line error, flashes when Fireman's Priority Switch has line error	Yes	Only close
LD6/red		Line error on smoke detector (red). Lights when smoke detector has line error, flashes at temperatures above 75 °C	Yes	Only close
LD7/red		Bus error (red). Lights when Bus signal from other controls is missing. Only relevant if J4-J7 is mounted.	Yes	Only close
Green Board + Front	OK	**lights** if everything is ok **switched off** by local error on this control **flashes** by error message from other controls received by bus	Yes	Yes
Yellow Board + Front	⚠	**Fault** **lights** by local error on this control or by error message from other controls received by bus	Yes	Only close
*Yellow Board + Front		**Line error** **flashes** by local error on this control and if the ribbon cable or jumper is not mounted on J9, or by error message from other controls received by bus	Yes	Only close
*Yellow Board + Front		**AC error** **flashes** by local error on this control or by error message from other controls received by bus	Yes	Only close
Red Board + Front		**Alarm** **lights** red constantly	Yes	No
*Yellow Board + Front		**DC error** **flashes at normal speed (1 Hz)** by local battery error on this control or by error message from other controls received by bus **flashes at high speed (10 Hz)** by battery voltage below 19V. Reset by DIP 4: OFF/ON		
Blue Board + Front		**lights** blue constantly in open condition (when windows are open) **flashes** when actuator is moving up and down		
Yellow / Blue		**flashes** when internal memory fail is detected	Yes	Yes
Lights with*		Time for yearly service - please call for supplier (flashes fast)	Yes	Yes

Fuse specifications

Placement / Fuse value	**24V**
F1 8A fast ading fuse	1 pcs. for 24V motor output

Complete jumper settings for SVM EI PCB

	Text on board	Factory mounted	Mounted / ON function	Dismounted / OFF function
DIP 1	Conf. Fireswitch	No	Fire switch active from 500 Ω -3 kΩ. A short circuit of the smoke detector input will generate a line error. Smoke detector active from 100Ω-1kΩ.	Fire switch active from 0-3 kΩ. A short circuit of the smoke detector input will generate alarm
DIP 2	Failsafe	No	Line error on fire switch or detector puts the control in alarm	Normal mode
DIP 3	Temp. Detekt	No	Line error on motor line (upper resistor area) = alarm	Normal mode
DIP 4	Ser	Yes	Active	Inactive
DIP 5	Snitch	No	LED's "remember" errors (line errors, AC/Batt. error, bus error). The LED's can only be switched off/reset again by setting dip switch off	Normal mode
DIP 6	Auto close	No	Automatic, time-controlled shutdown of the comfort ventilation is switched on. Fixed opening time is 10 min.	Normal mode
DIP 7	Week open	No	Weekly open (2 sec.) /close (5 sec.) cycle activated	Weekly open/close not activated
DIP 8	Auto reset	No	Automatic reset (see page 9)	Normal mode
DIP 9	Sprinkler	No	Motor output closes by active detector (opens by activating the fire switch)	Normal mode - motor output opens by ative detectors or fire switches
DIP 10	Bus comfort	No	The control reacts on comfort signal via bus activity	The control 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	No	The control reacts on alarm signal via bus activity	The control 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 fire switch)
DIP 12	Lock-Out Mode	No	Slaves can enter Lock-Out Mode see page 18	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 27 kΩ terminal resistors on actuator	No line monitoring
J2 (motor)	Mot Mon act.	Yes	2 wire line monitoring via 27 kΩ terminal 2-3	No line monitoring
	Ext Li Mon act.	No	3 wire line monitoring with direct motor connection actuator	
J4(Bus)	Start term.	No	First control panel in the bus network	See section concerning connection of controls panels in bus connection, page 14
J5(Bus)	+ Master	No		
J6(Bus)	Slave	No	Middle and last control panel in the bus network	
J7(Bus)	End term.	No	Last control panel in the bus network	
J9	FOIL	Yes in Basic	Line monotoring of front cabinet	Line error flashes
J11	BatSup->Ø23	No	Battery backup of terminal 23	Terminal 23 only AC supplied

Others: Reset time = 180 sec. closing // Cut-off motor output and loading after 360 sec. // Comf. var (potetiometer): 1-60 sec.

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Connection of more controls to one fire group (bus connection)

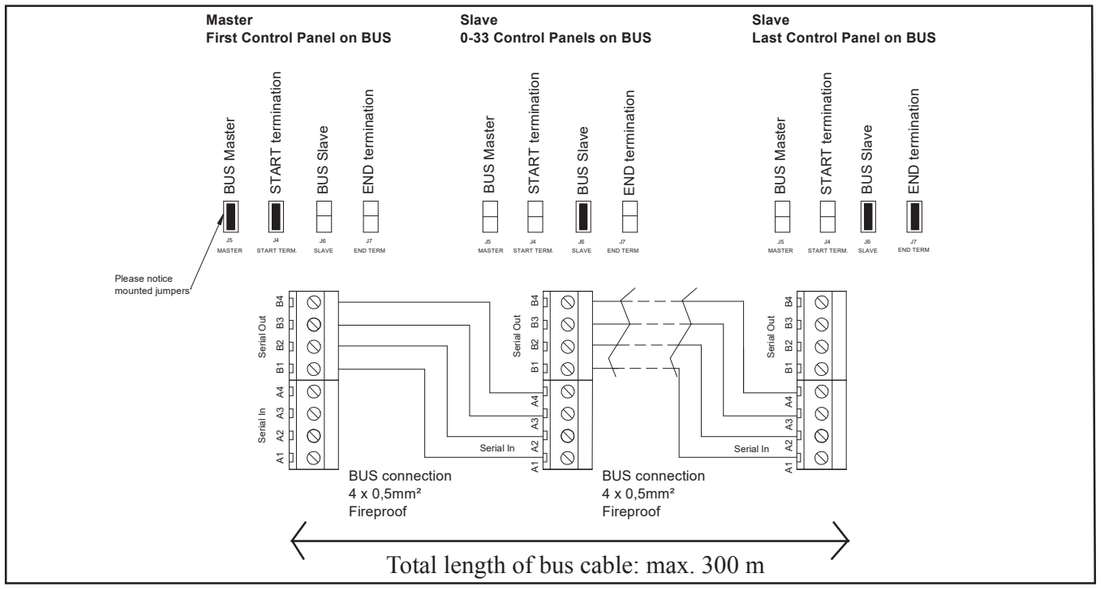
By means of a bus communication it is possible to make 2 – 35 control panels to work as a complete system. The control panels communicate with each other via a 4 wire bus connection.
This could e.g. be a 4x0.5 mm² fireproof cable.
Terminal no. A1, A2, A3 and A4 are for the incoming connection and B1, B2, B3 and B4 for the outgoing connection.
In the first control panel start Bus J4 has to be on. Any control can be Master, if so J5 must therefore also be on. The bus cable is connected on the output terminals B1, B2, B3 and B4 and lead to the next control panel which is a slave, J6 must therefore be on. The cable is connected to the input terminals A1, A2, A3 and A4 of the next control panel and further to the next slave control panel from terminal B1, B2, B3 and B4.
In the last slave control panel J7 and J6 must be on in order to terminate the bus connection.

ALARM: Alarms from Manuel Control Point smoke-/heat detectors are controlled locally. When DIP11 is set the panel will go into alarm state if another control panel connected on the BUS enters alarm state
RESET: If the reset button on one control or in one fire switch is activated, the reset function on all connected controls is activated and starts the closing function on all motor output in approx. 180 sec.
COMFORT: The comfort control can work locally on each control panel. When DIP 10 is set the control panel will react on any comfort signal send on the bus from another control panel.
If a wind- and rain sensor is connected, it will work on all control panels on the bus no matter dip settings.

Function description for control panels connected with bus connection

If more control panels are connected by means of a bus connection, the following are monitored/ communicated between the control panels:

- A detected bus error makes the LED 7 on the main board lights.
- A detected bus error brings all controls on the bus connection in error condition (line error).
- If one of the control panels in the network goes into alarm condition, all go into alarm condition.
- If one of the control panels goes into a certain error condition (line error, AC error, battery error or bus error), the other control panels also go into error condition – the type of the error is indicated on the board of the front plate of all control panels – on the control panel(s) which have not caused the error, the ok LED on the board of the front plate flashes at the same time as the error. On the control panel(s) which have caused the error, the OK LED is switched off.

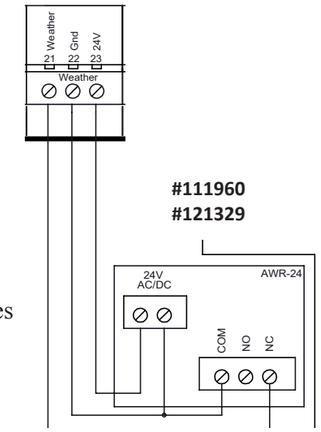


Connection of weather sensor / Close all function

A weather sensor can be connected to the control panel.
The weather sensor is adjusted according to the instructions.
Actuators should be closed when the wind is above 6 m/s.
LED 3 on the main board indicates active weather sensor - lights as long as input is active.

As long as the weather sensor is active, motor inputs cannot be opened with comfort switches.
The weather sensor closes on all controls which are connected through bus connection.
On the input to weather station a weekly timer can be connected which makes sure that everything is closed, e.g. by end of a working day.

Power Supply to terminal 22 and 23 is only AC supplied as standard.
If battery backup is needed, then mount J11 .
NOTE: Be aware of standby time due to current consumption.

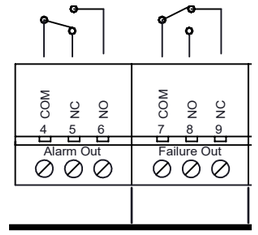


External signal output, connection to Fire Alarm Panel and other control systems

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

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

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



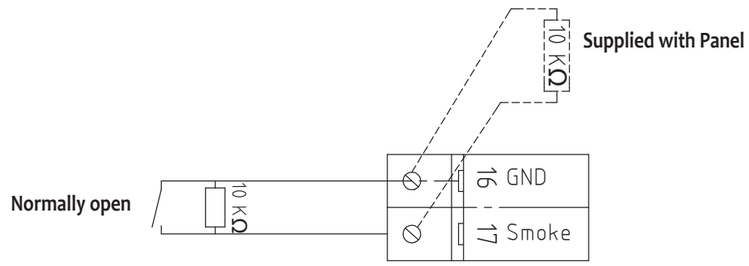
Potential free ALARM switch.
Com + NO connected on alarm.
Max (30Vdc 5A)/(250Vac 5A)

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

Extra relay print provides 2 additional potential free contacts each 30V 0,5A

How to make a connection from a Fire Alarm Panel

The control panel can receive potential free zero volt alarm signals from e.g. AFA systems on the input to fire switch or smoke-/heat detector Terminal 16 and 17.
– Line monitoring resistor must be fitted on the contact in the AFA system



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Special functions

Sprinkler function:
DIP 9 ON - a special function comes in use where sprinkler systems are installed. With this function activated, the actuator output closes, if smoke-/heat detector input is activated.
If the fire switch is activated, the actuator output opens.

Auto close:
DIP6 ON - Automatic, time-controlled shutdown of the comfort ventilation is switched on. Fixed opening time is 10 min.

Weekly open/close:
DIP 7 ON - the motor output opens shortly (3 seconds) once a week and closes immediately after - This funNtion is used to give the right tension on the packing of the skylights to keep them watertight.

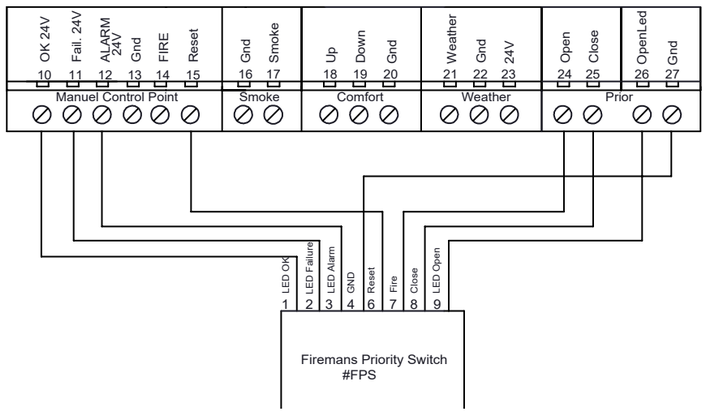
Function of heat detector in LIP:
DIP 3 ON - a heat detector 70-100 °C can be mounted in each LIP. If the temperatur is exceeded, the control panel goes into alarm and the opening system is opening.

Lock-Out Mode:
DIP 12 ON - see page 18

Fireman's Priority Switch

The Fireman's Priority switch is an override switch, which makes it possible for the Fireman to control the panel regardless of sensor inputs.

Connection/function
- The CLOSE-switch activates the panel in close condition for 180 seconds, and the panel stays in fire mode.
- The OPEN-switch activates the panel in open condition if not in fire mode, and the panel enters fire mode.
- The LED output is activated in open condition (windows are open).
  When actuator is moving up or down LED flashes with 1Hz, in case of fail LED flashes with 10 Hz.
- OPEN and CLOSE switches have line surveillance.
- Only one Fireman's Priority Switch can be connected.
- When activating OPEN and CLOSE at the same time = reset is performed.
- The input is not a part of Configure Fire switch DIP1 = the input is active between 0-3 Kohm.



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.
The two most important factors are the ability of the cables to resist heat and to make sure that the voltage drop in the cables to the actuators do not exceed 15 % at full load on the fire ventilation hatches.

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

Opening systems with actuators 24V	2 wires, see diagramme (3 wires by external line surveillance)	Max. cable length
Fire switch 24V	Min. 6 x 0.5 mm² (0.8 mm)	100 m*
Smoke detector 24V	Min. 2 x 0.5 mm² (0.8 mm)	100 m*
Heat detector	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 230VAC	e.g. 3 x 1.5 mm² PVIK-J
Comfort ventilation button 24V	Min. 3 x 0.5 mm²
Wind- and rain sensor 24V	Min. 4 x 0.5 mm²

Table for SVM EI 24V-5A/8A/10A allowed voltage drop 15% = 3.6V

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

Power consumption per group in ampere	Cable cross section and amount of cores						
	2x1.5 mm²	2x2.5 mm²	4x1.5 mm² (2x1.5+2x1.5)	4x2.5 mm² (2x2.5+2x2.5)	2x6 mm²	5x2.5 mm² (2x2.5+3x2.5)	2x10 mm²
2	74 m	12 3m	148 m	246 m	295 m	307 m	492 m
4	37 m	61 m	74 m	122 m	148 m	154 m	244 m
6	25 m	41 m	50 m	82 m	98 m	102 m	164 m
8	18 m	31 m	36 m	62 m	74 m	77 m	124 m

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Lock-Out Mode SLAVE

Only mandatory in UK!

Slaves are connected to Smoke Vents on each floor.
DIP11 = ON
DIP12 = ON

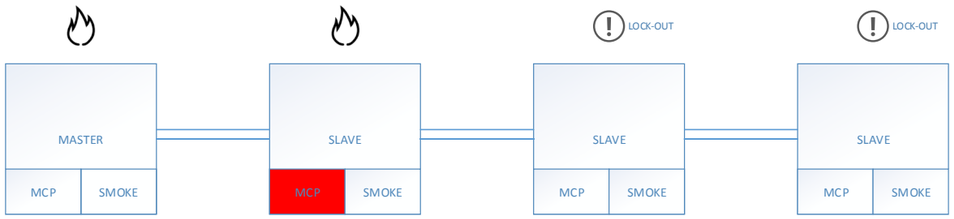
When Slave Panel receives an alarm signal from Manual control Point or Smoke Detector:
- it enters Alarm, sets it's motor output in open direction and transmit Fire on the bus.
- the Master enters Alarm (Flashes 1 Hz with Alarm led) and sets it's motor output in open direction.
- the other Slaves enter lockout (Flashes 10 Hz with Alarm led) and set it's motor output in close direction the lockout slave's can't enter alarm mode from manual control point or smoke detector, before reset has been executed.

Fireman's Priority Switch:
Slaves can have a local Fireman's Priority switch to override the lock-out mode.
The Fireman's Override Switch will be able to control the slave panel whatever the alarm condition.

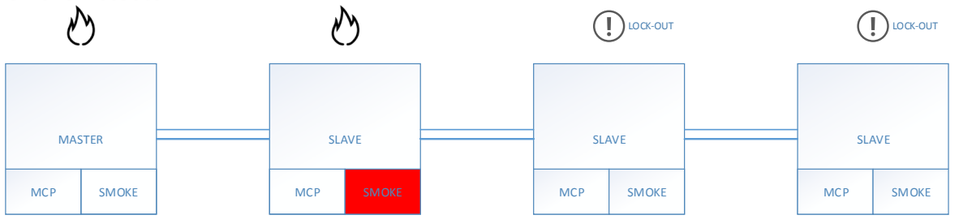
Pressing Open / Close buttons on the Fireman's Priority Switch at the same time:
- reset is executed.
- the blue led will flash for 5 seconds.
- Open / Close buttons are disabled during this.

NOTE - A Slave unit in lockout mode will not respond to any inputs.
The only way of controlling the Slave unit in lock-out mode, is by using a Fireman's Priority Switch.

SLAVE EVENT		MASTER	ALL OTHER SLAVES
SMOKE	*FIRE MODE*	FIRE mode	Lock-Out mode
Manual Control Point (MCP)		FIRE mode	Lock-Out mode



Smoke Detector



Lock-Out Mode MASTER

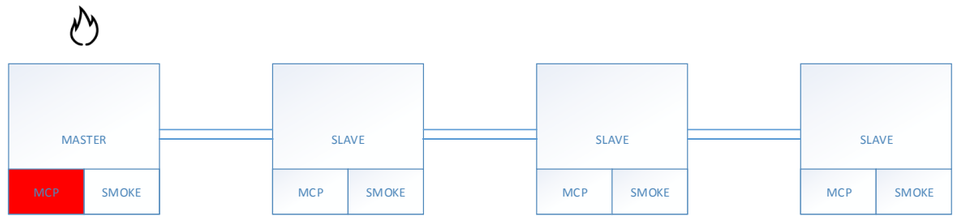
Master is connected to the Smoke Vent.
DIP11 = ON
DIP12 = ON

When Master Panel receives an alarm signal from Manual control Point or Smoke Detector:
Only Master panel enters alarm mode sets it's motor output in open direction

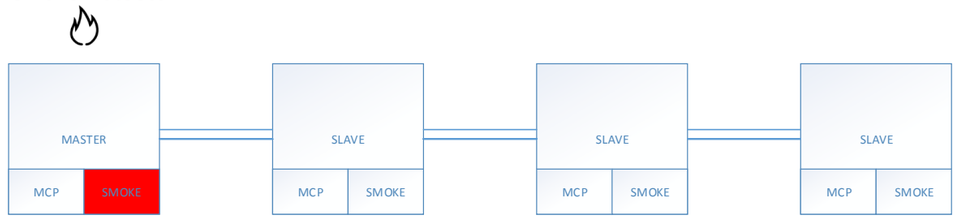
Fireman's Priority Switch:
The Master can have a Fireman's Priority Switch installed to overrule alarm mode.
The Fireman's Override Switch will be able to control the panel whatever the alarm condition.

Pressing Open / Close buttons on the Fireman's Priority Switch at the same time:
- reset is executed.
- the blue led will flash for 5 seconds.
- Open / Close buttons are disabled during this.

MASTER EVENT		ALL SLAVES
SMOKE	*FIRE MODE*	-
Manual Control Point (MCP)		-



Smoke Detector



Part no. and accessories

Spare parts no.	Name of part	Description
211062	Power supply 150W 27VDC MW	Power supply 230VAC/27VDC for 5A control
211072	Power supply 200W 27VDC MW	Power supply 230VAC/27VDC for 8A control
211045	Power supply 300W 27VDC MW	Power supply 230VAC/27VDC for 10A control
211210	Circuit breaker 13A	Automatic fuse 13A / input terminal
800348	Batteri 12V/7.2Ah 151x65x98mm	Battery for 24V / 5A controls / 8A controls / 10A Controls
111789	Fire switch/reset IP40 Actulux	Fire switch IP 40
111629	Replacement glass for BVT/MCP	Replacement glass for fire switch
511592	Fire switch MCP in orange IP43 Box	Fire switch built into an orange IP43 metal box
511593	Fire switch MCP in orange IP54 Box	Fire switch built into an orange IP54 metal box
511594	Fire switch MCP in orange IP65 Box	Fire switch built into an orange IP65 metal box
111960	Rain sensor 250VAC / 24VDC	Rain sensor closes everything when raining
121329	Wind and rain sensor 250VAC /24VDC	Wind- and rain sensor closes everything when raining or strong wind
111735	Heat detector+base 75 degree	Heat detector 75 degrees temperature activation
111741	Heat detector+base 90 degree	Heat detector 90 degrees temperature activation
111740	Smoke detector, optical	Optical smoke detector
111943	Comfort switch w/ open indication, blue diode	Comfort switch Fuga complete with housing and blue diode
111753	Comfort switch OPUS w housing	Comfort switch Opus complete with housing
111758	Comfort switch FUGA w housing	Comfort switch Fuga complete with housing
111760	Weekly timer 1 channel	Weekly timer, can e.g. close everything in the evening
111761	Comfort sw.up/down OPUS IP44	Comfort switch Opus 44 white
111767	AUTO MAN switch OPUS w housin	Switch Auto. man. OPUS white, activates room thermostat or weekly timer
111770	Room thermostat RTR w.resis.	Room thermostat for control of comfort ventilation
111933	Relay PCB extra	Board with 2x2 extra relay outputs 30V 0.5A
122200	PCB SVM EI 24V 5/8A	Board 24V for 5A and 8A controls
122206	PCB SVM EI 24V 10A	Board 24V for 10A controls
122201	PCB SVM EI Daughter R2	Data logger for SVM EI
121611	Programming PCB f. SVM Central	Interface for reading datalog
111892	Transmitter for Wind and Rain	Wireless weather signal together with #111894
111894	Remote control w/receiver SVM	Remote control for comfort
111980	Fireman's Priority switch with reset	Fireman's button, override the alarm and closes
212467	Cable Gland set w/3xM16	Cable gland set with 3 x M16 cable glands
212468	Cable Gland set w/5xM12	Cable gland set containing 5 x M12 cable glands
212469	Cable Gland set w/M20 + M16 + M12	Cable gland set with M20, M16 and M12 cable glands
212478	Cable routing w/4xØ15 WHITE	Cable entry membrane in white

Control for Fire and Comfort Ventilation Type SVM EI 24V-5A / 8A / 10A

Actulux

(DK) YDEEVNEDEKLARATION IHT. FORORDNING NR. (EU) 305/2011)
(UK) DECLARATION OF PERFORMANCE ACCORDING TO REGULATION NO. (EU) 305/2011)
(D) LEISTUNGSERKLÄRUNG GEMÄSS DER VERORDNUNG NR. (EU) 305/2011)
(F) DECLARATION DES PERFORMANCES SELON RÈGLEMENT UE 305/2011

CE
EN 12101-10:2005

Produkt: Product: Produkt: Produit:	**Strømforsyning** **Power Supply** **Stromversorgung** **Source de courant**
Type/Type/Typ/Type:	**SVM Micro 24V-4A, SVM Micro TCE 24V-4A** **SVM 24V-5A, SVM EI 24V-5A, DFM 24V-5A** **SVM 24V-8A, SVM EI 24V-8A, DFM 24V-8A** **SVM EI 24V-10A, DFM 24V-10A** **SV 24V-8A, 24V-24A, 24V-30A, 24V-32A** **SV 48V/8A, 48V-24A, 48V-30A, 48V-32A** **SVL 24V-15A, 24V-20A, 24V-32A, 24V-40A, 24V-50A** **SVL 48V-10A, 48V-15A, 48V-20A, 48V-32A, 48V-50A**
Formål: Purpose: Verwendungszweck: Description du produit:	**Strømforsyning til aktuator brugt i forbindelse med brandventilation** **Power supply for actuators used for SHEV** **Stromversorgung für Antriebe, die für Rauchabzug genutzt werden** **Asservissement pour vérins électriques**
Producenten/ Manufacture/ Hersteller Usine de fabrication:	**Actulux A/S, Porsborgparken 35, 9530 Stoevring, Denmark**
System for attestering og kontrol af ydeevne: System for attestation and verification of performance: System zur Bescheinigung und Prüfung der Performance: Système(s) d'évaluation et de vérification de la constance des performances du produit:	**SYSTEM 1**

Det bemyndigede organ **0402 RISE Research Institute of Sweden** udførte den indledende inspektion af fabrikken og af dennes egen produktionskontrol samt løbende overvågning, vurdering og evaluering af fabrikkens egen produktions-kontrol til **SYSTEM 1** og følgende vises: The notified body **0402 RISE Research Institute of Sweden** made the initial inspection of factory and of factory production control, and ongoing monitoring, assessment and evaluation of factory production control to the **SYSTEM 1** and the following is displayed: Die notifizierte Stelle **0402 RISE Research Institute of Sweden** hat die Erstinspektion des Werkes und der werks- eigenen Produktionskontrolle sowie die laufenden Überwachung, Bewertung und Evaluierung der werkseigenen Produktionskontrolle nach dem **SYSTEM 1** vorgenommen und Folgendes ausgestellt: L'organisme notifié **RISE (Research Institute of Sweden) 0402** a procédé à l'inspection initiale de l'usine et à son propre contrôle de production, ainsi qu'à la surveillance, à l'appréciation et à l'évaluation continues du contrôle de production propre à l'usine pour **SYSTEM 1**. Les éléments suivants sont indiqués:	**CERTIFICATE OF CONSTANCY OF PERFORMANCE** **NO. 0402 – CPR – SC0354-13**

Ydeevnen af produktet i overensstemmelse med punkt 1 og 2 svarer til den deklarerede ydeevne for punkt 9.
Ansvarlig for udfærdigelse af denne ydeevnedeklaration er producenten der er henvist til i punkt 4.
Underskrevet på vegne af fabrikanten og navnet på fabrikanten af:

The performance of the product in accordance with point 1 and 2 corresponds to the declared performance for point 9.
Responsible for creating this declaration of performance is only the manufacturer referred to point 4.
Signed on behalf of the manufacturer and the name of the manufacturer of:

Die Leistung des Produkts gemäß den Punkt 1 und 2 entspricht der erklärten Leistung nach Punkt 9.
Verantwortlich für die Erstellung dieser Leistungserklärung ist allein der Hersteller gemäß Punkt 4.
Unterzeichnet für den Hersteller und im Namen des Herstellers von:

Les performances du produit identifié aux points §1 et §2 sont conformes aux performances déclarées indiquées au point §9.
La présente déclaration des performances est établie sous la seule responsabilité du fabricant identifié au point §4.
Signé au nom du fabricant et nom du fabricant de:

Jens Buus

Stoevring 21 April 2026, Jens Buus, Managing Director

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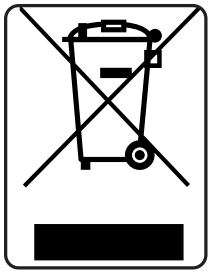
Control for Fire and Comfort Ventilation Type SVM EI 24V-5A / 8A / 10A

Service / Maintenance Record

System ID:				
Date	**Company**	**Engineer**	**Next Due**	**Comments**

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Technical specifications	SVM EI 24V-5A	SVM EI 24V-8A	SVM EI 24V-10A
Power supply	230VAC / max. 1.2A	230VAC / max. 1.7A	230VAC / max. 1.8A
Output supply	24-28VDC		
Motor outputs	1 pcs. (line detecton: 1-4 lines)		
Max. load	5A	8A	10A
Standby consumption	5,9W	7,7W	3,4W
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 fire switches (LED+buzzer) = 17.6mA = approx. 10 fire switches / 1 Fireman's Priority Switch		
Comfort groups	1 pcs. unlimited number of comfort switches		
Detector (smoke/heat) 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		
Weather sensor input / close all	Yes		
Alarm output	Yes - potential free contact, max. 24V / 3A		
Failure output	Yes - potential free contact, max. 24V / 3A		
24V DC for external use	24V DC / max. 0.5A - at 230V operation		
Bus communication	Yes - connection of 2-35 pcs. control panels - 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: 27-28.5V 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.

Manufacturer:

Actulux A/S
Porsborgparken 35
9530 Stoevring
Denmark

Tel.: +45 98 57 40 90
e-mail: info@actulux.com
www.actulux.com

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