

Installation instruction

Control Panel for Fire Ventilation

SVM 24V-5A / SVM 24V-8A



Fire ventilation

Comfort ventilation

24VDC max. 5A/8A

1 fire ventilation group, 1 comfort group

Connection for manual control points, wind- and rain sensor, comfort switches, smoke detectors

Possibility for bus connection of 35 control panels

Warranty terms and conditions

1. "MERCOR" S.A. grants a 12-month quality guarantee for equipment, starting from the date of purchase, unless the agreement provides otherwise.
2. Each defect under guarantee should be reported to a local representative of "MERCOR" S.A. immediately, i.e. within 7 days of its discovery.
3. Applications can be made by phone at +48/ 58 341 42 45, by email to claim@mercor.com.pl or by sending a letter to: "MERCOR" S.A. 80-408 Gdańsk, Grzegorza z Sanoka 2.
4. If during the term of guarantee any physical defects of the equipment become evident, "MERCOR" S.A. shall remove them within 21 days of the written notification, subject to paragraph 8.
5. "MERCOR" S.A. reserves the right to lengthen the repair time in the event of complicated repairs or those that require non-standard sub-assemblies [elements] or spare parts to be purchased.
6. Liability under the Guarantee covers only defects resulting from causes inherent in the equipment sold.
7. In the event of defects resulting from inappropriate operation of the equipment or due to other reasons stated in par. 6, the Buyer/Guarantee Holder shall bear the costs of their removal.
8. The guarantee does not cover:
 - damages and breakdowns of the equipment due to inappropriate operation, user's interference, lack of maintenance or periodic servicing described in "SERVICE AND MAINTENANCE" section of this document;
 - equipment damages resulting from causes other than those that "MERCOR" S.A. is responsible for, in particular: acts of God such as torrential rainfall, flood, hurricane, flooding, stroke of thunder, overvoltage in the mains, explosion, hail, fall of aircraft, fire, avalanche, landslide and secondary damages due to the above-listed causes. Torrential rain is defined as rain with an efficiency index of at least 4 (or 5 in Chomicz scale or torrential rain grade IV (A4)). Should it be impossible to determine the index mentioned in the previous sentence, the actual condition and the degree of damage at the place of its origin proving that it is the consequence of torrential rain will be considered. Hurricane is defined as wind blowing at the speed of at least 17.5 m/s (damages are deemed to have been caused by hurricane if the effects of hurricane have been found in the immediate neighborhood);
 - damages due to failure to immediately report the defect discovered;
 - worsened quality of coating due to the natural ageing process (fading, oxidation);
 - defects due to using abrasive or aggressive cleaning products;
 - damages due to aggressive external factors, especially chemical and biological ones.
 - parts liable to natural wear and tear during operation (e.g. seals) unless a manufacturing fault has occurred;
 - damages due to improper transport, unloading and storage of the device;
 - damages due to installation inconsistent with the DTR and the rules of good construction practice;
 - devices or their parts in case the rating plate or guarantee seals are broken or damaged.
9. The Guarantee shall expire forthwith if:
 - The Buyer/Guarantee Holder makes design modifications on his own without consulting "MERCOR" S.A.,
 - Maintenance or periodic servicing are not done in due time or are performed by unauthorized persons or a service center not authorized by "MERCOR" S.A., or the equipment is operated in the wrong way,
 - Any interference of unauthorized persons – except activities connected with normal operation of the equipment.
10. The Buyer/Guarantee Holder is responsible for proper operation and maintenance of the equipment and for regular (min. twice a year) servicing according to "SERVICE AND MAINTENANCE" section of this document;

As regards matters not regulated by these "Warranty terms and conditions", relevant regulations in the Civil Code, and in particular Art. 577-581 shall apply.

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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 3 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 detailed connection to the individual in- and outputs is described in the individual sections in this manual. Selection of cable sizes on page 16-17.

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 |
| Rotary 100 | 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.

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 plastic 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 the central pages and are dimensioned according to table page 16. 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 230V AC from separate powerline with its own ground error circuit interrupter, 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.

Service and Maintenance

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.

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

Use the same brand.

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 diagramme on the central 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

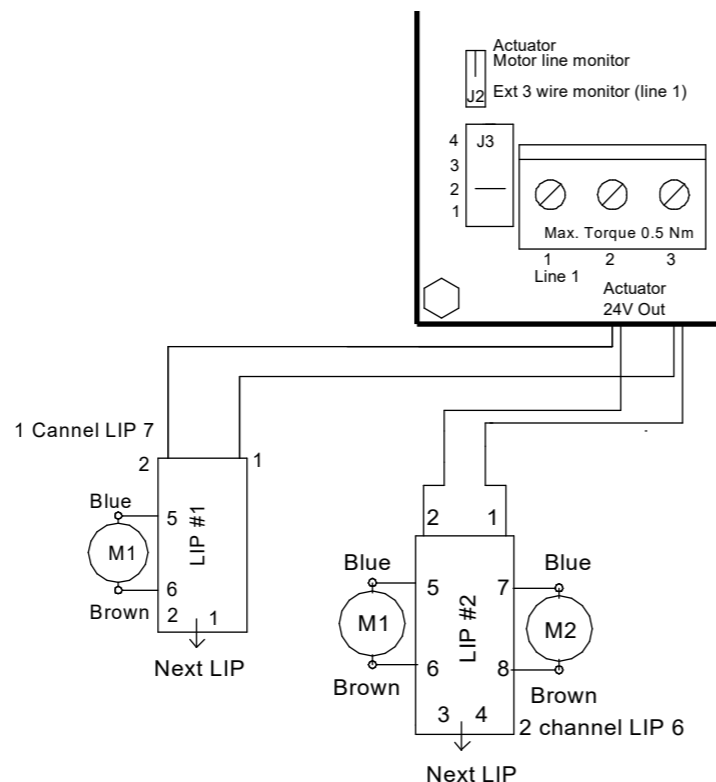
The control is equipped with 3 possible settings for cable monitoring (line monitoring), which can be configured by means of jumper J2.

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 (27KΩ) 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 series 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 27KΩ resistor.

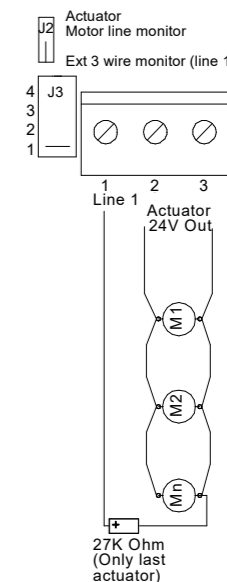
For SVM 24V-5A the max. allowed current is 5A, For SVM 24V-8A it is 8A.

| | 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), or no line monitoring when J2/J3 is removed |
| 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 27KΩ) you wish to detect - the same way as the motor line. This setting demands 3 wire cable from motor output to motor. **Jumper J2/J3 is not mounted** - No line monitoring for actuator output.



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/48V DC 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.

Table of LIP settings

| Opening System | 3A/1,5A SA Power | 4A/2A SA Power | 2.5A/1,25A SA Power | 2,5A/1,25A Rotary 100 | LIP5/6 |
|----------------|-----------------------|-----------------------|---------------------|-----------------------|--------|
| 24V/48V | Single, Double, Large | Single, Double, Large | Mini | 2A/1A SA Power Mini | LIP7 |
| DIP 1 | ON | OFF | ON | OFF | OFF |
| DIP 2 | OFF | ON | ON | OFF | OFF |

| Type | Board no. | Board descrip. | Voltage and function | DIP 1 | DIP 2 | DIP 3 | DIP 4 | DIP 5 | DIP 6 | DIP 7 | DIP 8 |
|------------|-----------|----------------|---|-------------------|-------|--------|-------------|-------------------------|------------------------------------|-------|------------|
| LIP5 | 121315 | A043 | 24/48V 1 channel | | | 27K ON | Not mounted | | | | |
| LIP6 * | 121330 | A044 | 24/48V 2 channels | | | OFF | ON** | 27K ON | M1-M2 delay =ON | | |
| LIP7 Basic | 121305 | LIP7 | 24/48V 1 channel | See diagram above | | 27K ON | Not mounted | | | | |
| LIP7 TA | 121306 | LIP7 | 24/48V 1 channel Tandem | | | 27K ON | ON = Com | OFF = Slave ON = Master | OFF = Syncro Mode ON = Tandem Mode | **** | Not in use |
| LIP7*** | 121308 | LIP7 | 24/48V 1 channel Syncro m/position ind. | | | 27K ON | ON = Com | OFF = Slave ON = Master | OFF = Syncro Mode ON = Tandem Mode | **** | Not in use |

* SA Power Large - parallel operation: Jumper OPT mounted - both motors stop at the same time if one stops because of overload.
 ** When DIP4 is OFF = Tandem mode - both motors stop at the same time if no current flows in one. (1.5 sec. reaction time)
 *** Requires actuator with Reed. (3-core incl. black cable)
 **** OFF = No delay between Master og Slave / ON = Seven sec. delay between Master and Slave.

Operation and connection of Manual Control Points

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 10KΩ or 27KΩ 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 10KΩ resistor is also connected).

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 500-3KΩ, (indication of line error by direct short circuit or open circuit).

Off = ALARM condition from 0-3KΩ (indication of line error by open circuit).

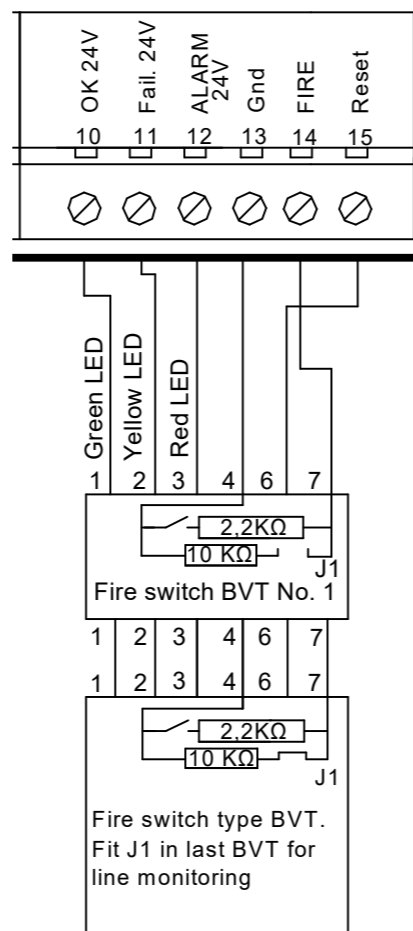
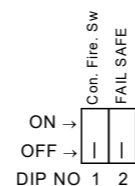
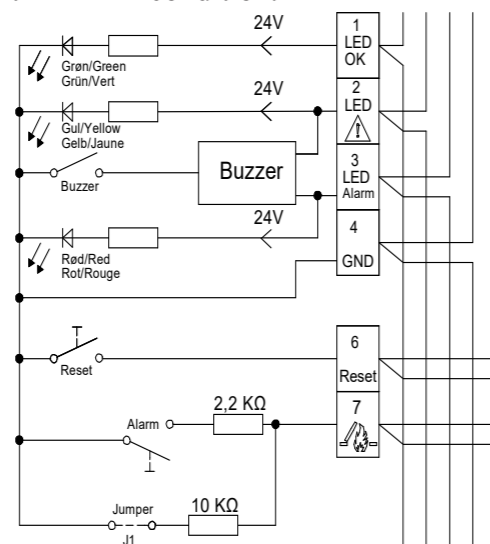
DIP 2 (Failsafe):

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 ground (-)
 - 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



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.

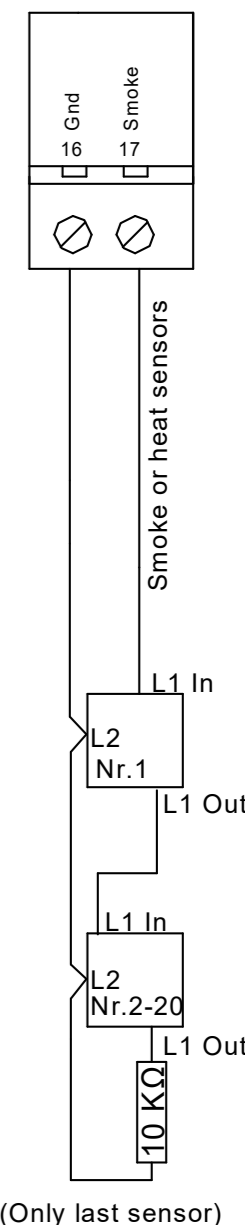
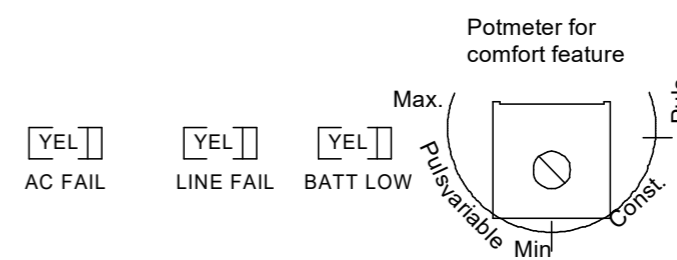
Potentiometer in Const. pos.:

As long as »up« signal or »down« signal are given, the actuators are running

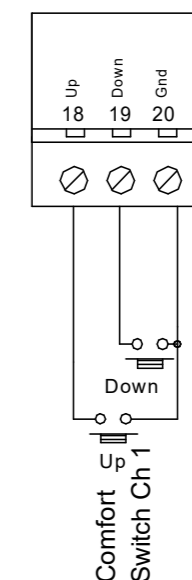
Potentiometer in Puls variable pos.:

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 variable.

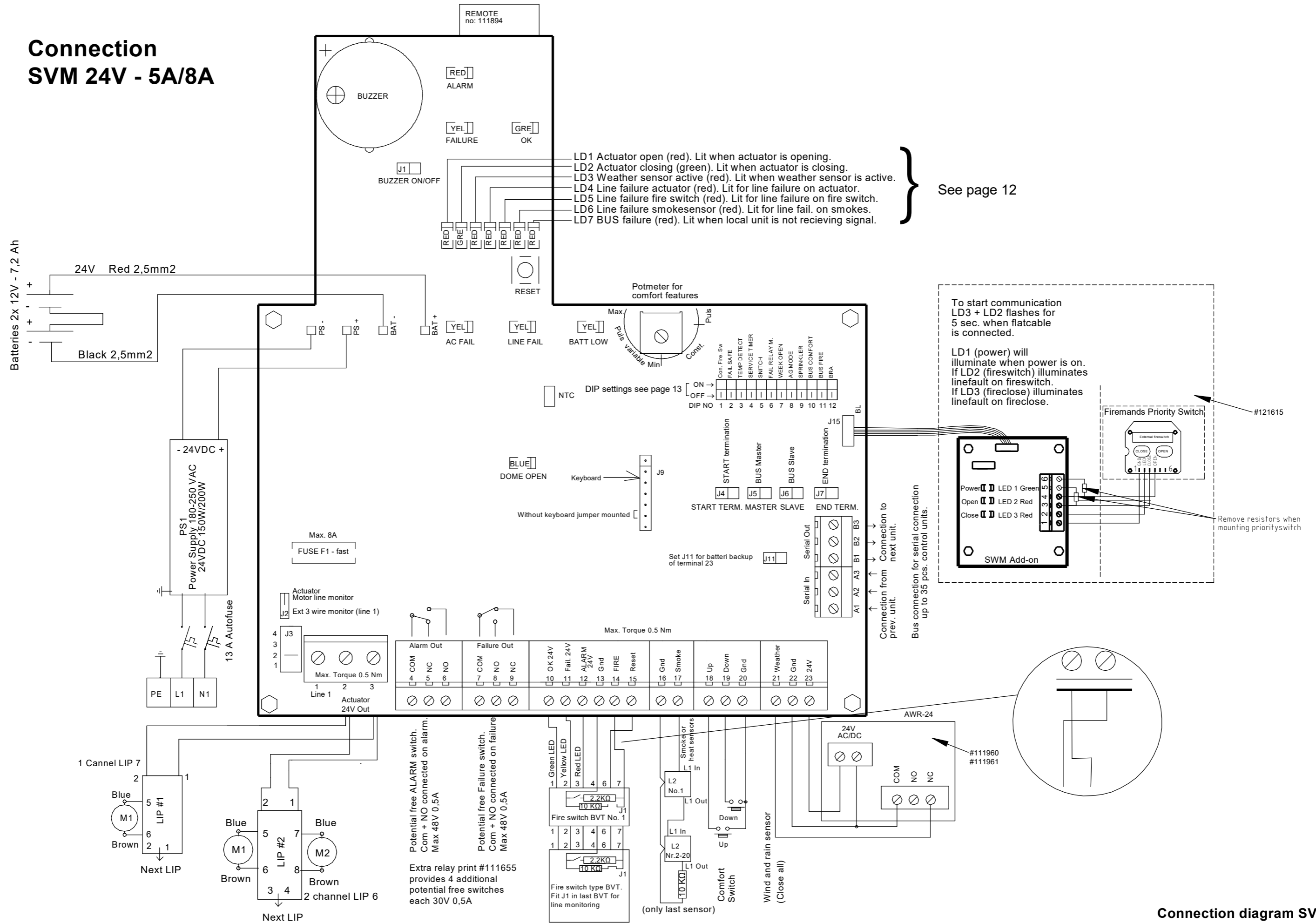


(Only last sensor)

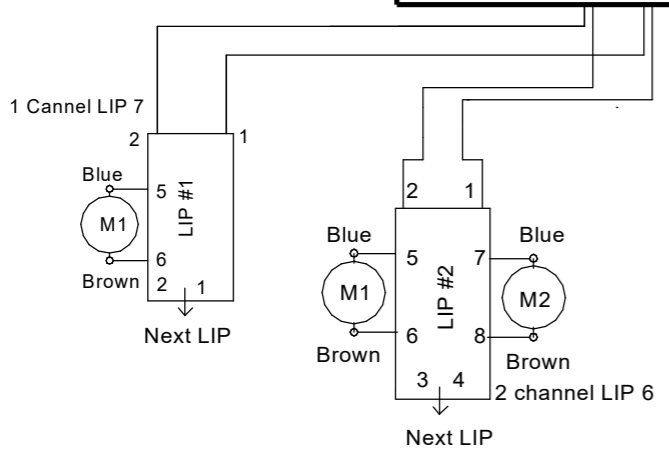
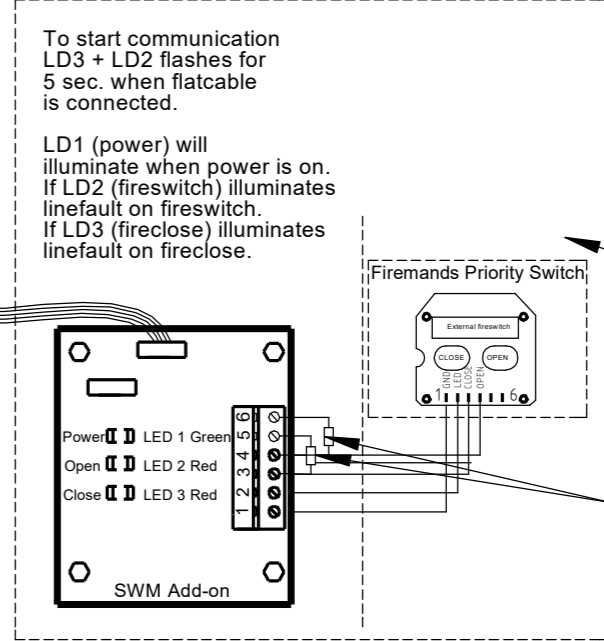


Room thermostats, weekly timers, CCS and other external control equipment for comfort ventilation can be connected on the input of the comfort control.

Connection SVM 24V - 5A/8A



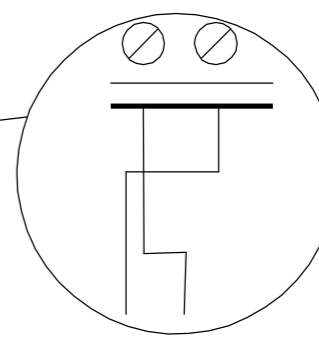
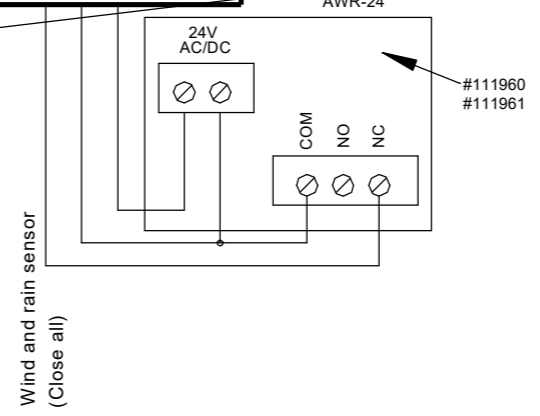
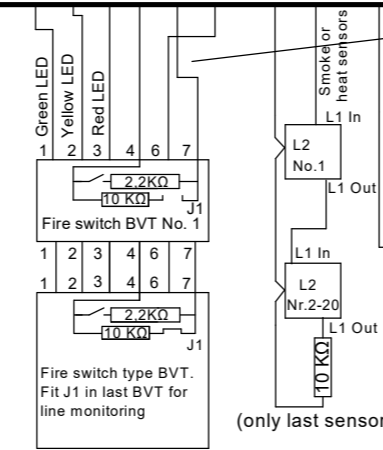
See page 12



Potential free ALARM switch. Com + NO connected on alarm. Max 48V 0,5A







Potential free Failure switch. Com + NO connected on failure. Max 48V 0,5A

Extra relay print #111655 provides 4 additional potential free switches each 30V 0,5A



Connection diagram SVM24 Drawing: 211704 P

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 line error | Yes | Only close |
| LD5/red | | Line error on fire switch (red). Lights when fire switch has line error, flashes when SVM Add-on 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° | Yes | Only close |
| LD7/red | | Bus error (red). Lights when BUS signal from other controls is missing. Only relevant if J24 or J25 is mounted. Flashes if connection to Add-on PCB is missing | 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 by local battery error on this control or by error message from other controls received by bus | | |
| Blue Board + Front |  | Lights blue constantly in open condition (when windows are open) flashes when actuator is moving up and down | | |
| Lights with* | | Time for yearly service - please call for supplier (flashes fast) | Yes | Yes |

Fuse specifications

| Placement | 24V |
|------------------------|----------------------------|
| Fuse value | |
| F1 8A fast acting fuse | 1 pc. for 24V motor output |

Complete jumper settings for SVM PCB

| | Text on board | Factory mounted | Mounted / ON function | Dismounted / OFF function |
|------------|------------------|--------------------|--|--|
| DIP 1 | Conf. Fireswitch | No | Fire switch active from 500-3KΩ. A short circuit of the smoke detector input will generate a line error | Fire switch active from 0-3KΩ. 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 | Fail Relay | No | Failure relay works as indication that skylight is open | Normal mode (works as failure relay) |
| DIP 7 | Week open | No | Weekly open (2 sec.) /close (5 sec.) cycle activated | Weekly open/close not activated |
| DIP 8 | AG Mode special | No | Special "Fire close" button enabled | Normal mode |
| DIP 9 | Sprinkler | No | Motor output closes by active detector (opens by activating the fire switch) | Normal mode - motor output opens by active 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 | BRA Mode special | No | Special fire switch/alarm mode and comf. active at all failures | Normal mode |
| J1 | J1 | Yes | Internal Buzzer ON | Internal Buzzer OFF |
| J3 (motor) | 1 - 2 - 3 - 4 | Pos. 1 | Connect according to number of 27KΩ terminal resistors on actuator | No line monitoring |
| J2 (motor) | Mot Mon act. | Yes | 2 wire line monitoring via 27KΩ 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 | | |
| J7(Bus) | End term. | No | Last control panel in the bus network | |
| J9 | FOIL | Yes in Basic | Line monitoring of front cabinet | |
| 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 (potentiometer): 1-60 sec.

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 3 wire bus connection. This could e.g. be a 3x0.5 mm² fireproof cable.

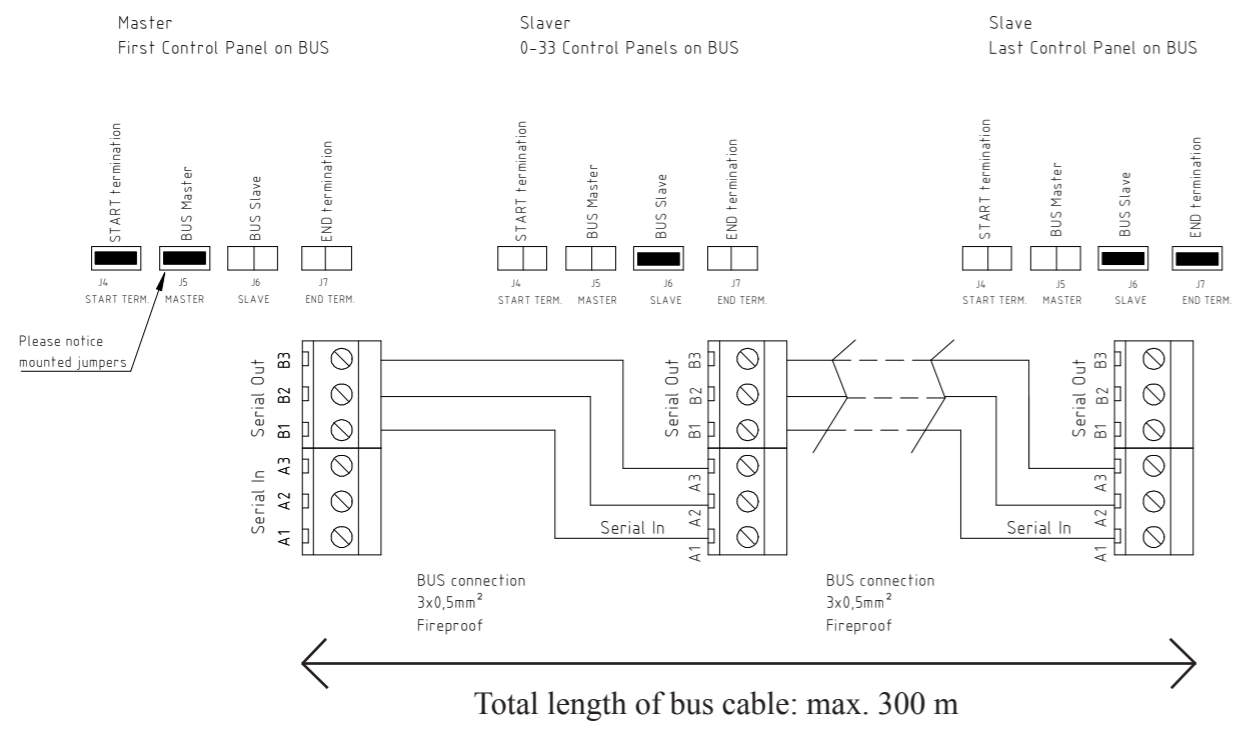
Terminal no. A1, A2, A3 are for the incoming connection and B1, B2, B3 for the outgoing connection. In the first control panel start Bus J4 has to be on. This control is Master and J5 must therefore also be on. The bus cable is connected on the output terminals B1, B2, B3 and lead to the next control panel which is a slave, J6 must therefore be on. The cable is connected to the input terminals A1, A2, A3 of the next control panel and further to the next slave control panel from terminal B1, B2, B3. 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 LD7 on the main board light/flash.
- 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.

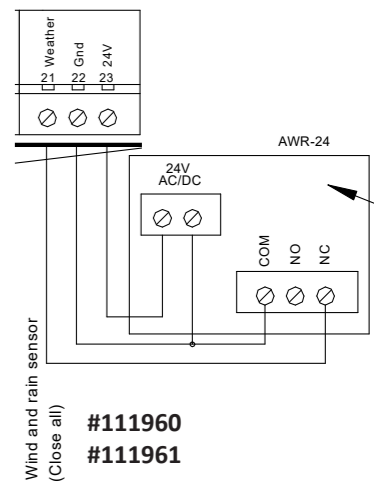


Connection of weather sensor / Close all function

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 LD3 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. This is only possible at PCB V5 and following versions. 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).

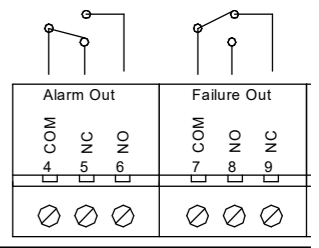
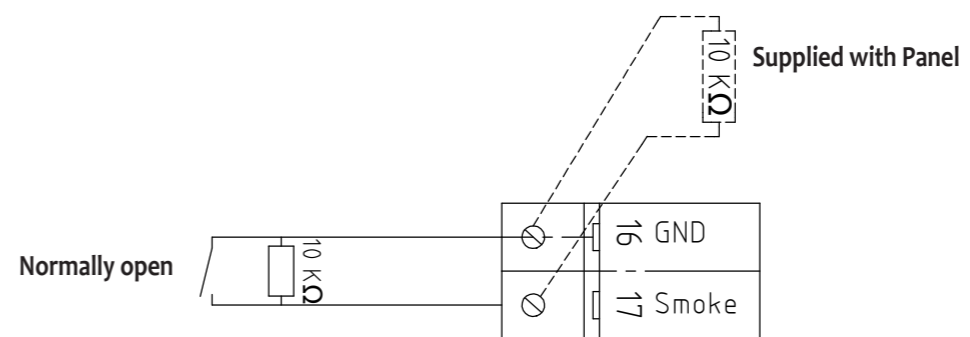
Alarm and error contacts work parallel on all controls connected with bus connection.

DIP6 (fail relay):
 On = Fail relay changes function to indicate open/closed window.

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



Potential free ALARM switch. Com + NO connected on alarm. Max 48V 0,5A

Potential free Failure switch. Com + NO connected on failure. Max 48V 0,5A

Extra relay print #111655 provides 4 additional potential free switches each 30V 0,5A

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.

Weekly open/close:

DIP 7 On - the motor 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 skylights to keep them watertight.

Function of heat detector in LIP:

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

Special mode:

DIP 12 On - possible to use comfort switch also during line fault, low batt., no AC, Alarm only as long as fire input is active or detector is activated.

Cable sizes

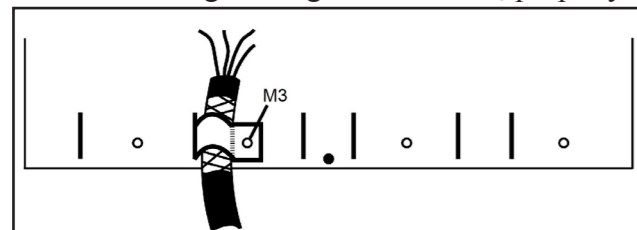
It is very important to use the correct cable types and sizes to make sure that the fire ventilation system meets the standards and works correct in an emergency.

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 mm ² (0,8 mm) | 100 m* |
| Smoke detector 24V | Min. 2 x 0,5 mm ² (0,8 mm) | 100 m* |
| Heat detector | Min. 2 x 0,5 mm ² (0,8 mm) | 100 m* |
| Total length of bus cable | 3 x 0,5 mm ² (0,8 mm) | 300 m* |

* For cable lengths longer than 100 m, 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 mm ² PVIK-J |
| Comfort ventilation button 24V | Min. 3 x 0,5 mm ² |
| Wind- and rain sensor 24V | Min. 4 x 0,5 mm ² |

Table for SVM 24V-5A/8A allowed voltage drop 15% = 3,6V

| Power consumption per group in ampere | Cable cross section and amount of cores | | | | | | |
|---------------------------------------|---|-----------------------|--|--|---------------------|--|----------------------|
| | 2x1,5 mm ² | 2x2,5 mm ² | 4x1,5 mm ² (2x1,5+2x1,5) | 4x2,5 mm ² (2x2,5+2x2,5) | 2x6 mm ² | 5x2,5 mm ² (2x2,5+3x2,5) | 2x10 mm ² |
| 2 | 74 m | 123 m | 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 |

Part nos. and accessories

| Spare parts no. | Name of part | Description |
|-----------------|------------------------------------|---|
| 121620 | Control PCB | Main board |
| 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 |
| 211210 | Circuit breaker 10A | Automatic fuse 10A / input terminal |
| 800248 | Batteri 12V/7,2AH 151x65x98mm | Battery for 24V / 5A controls / 8A controls |
| 111789 | Fire switch/reset IP40 Actulux | Fire switch IP 40 |
| 111629 | Replacement glass for BVT | Replacement glass for fire switch |
| 111626 | Fireswitch BVS in IP65 Box | Fire switch built in IP65 box |
| 111960 | Rain sensor 250VAC / 24VDC | Rain sensor closes everything when raining |
| 111961 | 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 |
| 111742 | Smoke detector, Ion detector | Ion smoke detector for invisible smoke |
| 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 |
| 111655 | Relay PCB extra 2Xoutp.in box | Board with 2x2 extra relay outputs 30V 0,5A |
| 111892 | Transmitter for Wind and Rain | Wireless weather signal together with #111894 |
| 111894 | Remote control w/receiver SVM | Remote control for comfort |
| 121615 | Priority switch + Add-on SVM | Firemans button, override the alarm and closes |

(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




EN 12101-10:2005

Produkt: **Strømforsyning**
 Product: **Power Supply**
 Produkt: **Stromversorgung**
 Produit: **Source de courant**

Type/Type/Typ/Type: **SVM/DFM 24V/5A & SVM/DFM 24V/8A**

Formål: **Strømforsyning til aktuator brugt i forbindelse med brandventilation**
 Purpose: **Power supply for actuators used for SHEV**
 Verwendungszweck: **Stromversorgung für Antriebe, die für Rauchabzug genutzt werden**
 Description du produit: **Asservissement pour vérins électriques**

Producenten:
 Manufacture: **Actulux A/S, Haandvaerkervej 2, 9560 Hadsund Denmark**
 Hersteller:
 Usine de fabrication:

System for attesting og kontrol af ydeevne:/ **SYSTEM 1**
 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:

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

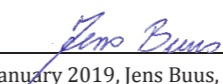
| Feature/Feature/Merkmal/ Fonctionnalité | Ydeevne/Performance/Leistung/ Performance | Specifikation/Specification/Spzifikation Spécification |
|--|--|---|
| Environmental class 1 | Class A | EN 12101-10:2005/AC:2007 |

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:


 Hadsund d. 16 January 2019, Jens Buus, Managing director

| Technical specifications | SVM 24V-5A | SVM 24V-8A |
|--|---|---|
| Power supply | 230V AC / max. 1.2A | 230V AC / max. 1.7A |
| Output supply | 24-28 VDC | 24-28 VDC |
| Motor outputs | 1 pcs. (line detector: 1-4 lines) | 1 pcs. (line detector: 1-4 lines) |
| Max. load | 5A | 8A |
| Operation temperature | -15°C - +40°C | -15°C - +40°C |
| Density | IP 54 | IP 54 |
| Battery back-up (72h) | Yes | Yes |
| Batteries | 2 pcs. 12V/7.2AH | 2 pcs. 12V/7.2AH |
| Dimensions (WxDxH) | 238 x 113 x 286 mm | 238 x 113 x 286 mm |
| Weight incl. batteries | 7,5 kgs. | 7,5 kgs. |
| Colour | White front / Black indication label | White front / Black black indication label |
| Fire groups | 1 pcs. with line detect. / Max. power consumption for fire switches (LED+buzzer) = 17.6mA = approx. 8 fire switches | |
| Comfort groups | 1 pcs. unlimited number of comfort switches | |
| Detector (smoke/heat) input | 1 pcs. with line detection / Max. power consumption for detectors = 2.2 mA = approx. 22 pcs. detectors. Trigger point 30mA | |
| Weather sensor input / close all | Yes | Yes |
| Alarm output | Yes - potential free contact, max. 48V / 0.5A | Yes - potential free contact, max. 48V / 0.5A |
| Failure output | Yes - potential free contact, max. 48V / 0.5A | Yes - potential free contact, max. 48V / 0.5A |
| 24V DC for external use | 24V DC / max. 0.5A - at 230V operation | 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" | |
| Approvals / Conforms | EN12101-10:2005 approved and certified - class A (double supply) - env. class 1 (to -15°C). Conform EN12101-9. Primary supply: 27-28.5V DC ripple 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) | |



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.

Contact:

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