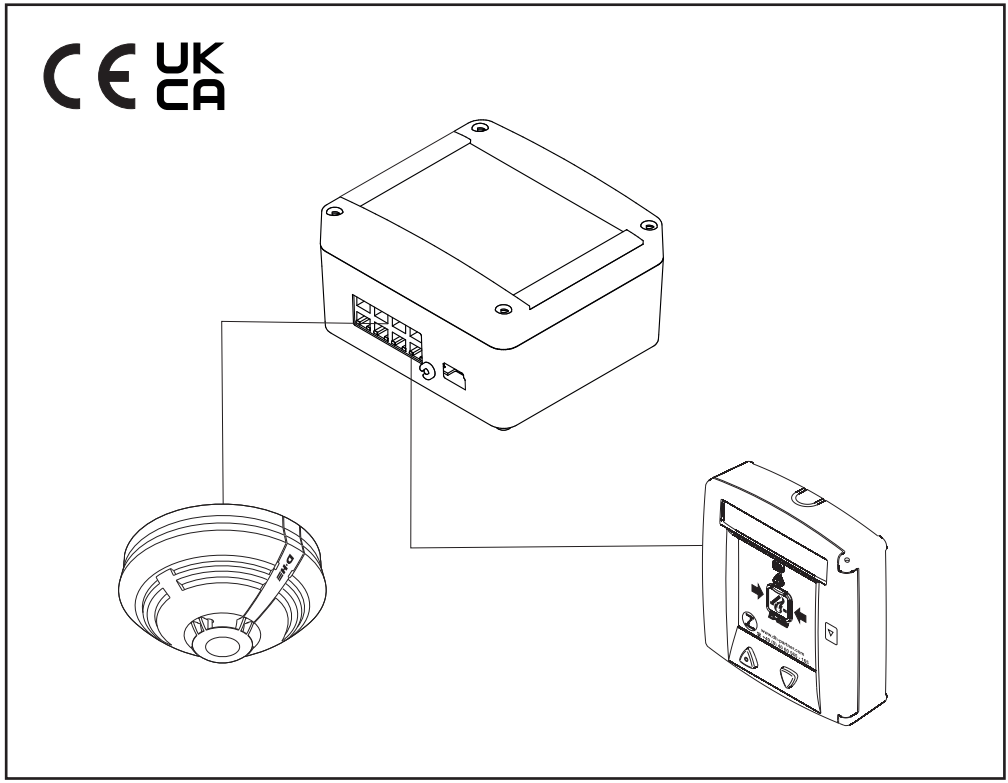
Bluekit Downloads

BK AIO-TS



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99.829.31 1.0/09/24

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Declaration of Conformity

We declare under our sole responsibility that the product described under “Technical Data” is in conformity with the following regulations:

2014/30/EU, 2014/35/EU, 2011/65/EU

S.I. 2016/1091, S.I. 2016/1011, S.I. 2012/3032

Technical file at:
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CEO
19.08.2024

Maik Schmees
CTO

Safety information

All persons involved in maintenance and testing must know and observe the company's internal and national safety regulations.
In addition to protective clothing, the following safety equipment must also be worn:
- Safety helmet
- Safety goggles
- Safety shoes
- Full body safety harness
- Protective gloves
- Hearing protection

Operating voltage 230 V AC!
Risk of injury due to electric shock!
- Connection may only be carried out by an authorised electrically skilled person
- Only suitable for installation indoors
- Only use unmodified D+H original parts

Intended use

- Energy-saving system for service shafts
- Only suitable for installation indoors

Functional description

The BlueKit AIO-TS system is used in technical shafts for the detection of a fire with smoke development and for ventilation. The system consists of a control panel (BK-AIO-TS), an opening element (installed horizontally or vertically) and additional components.
The following components are possible:
- Point smoke detector
- Operation panel (RT 45/-RJ-LT / RT 45/-RJ)

Important regulations

Germany:
Please observe VDE 0833 for danger/risk signalling systems, VdS 2221, VDE 0100 for electrical attachments, DIN 18232 for SHEV systems, the regulations of the local fire brigade and the power supply company for mains connection.

Belgium:
Please observe the regulations of the Arrêté Royal of 18 January 2017, article 26 for technical shafts, the NBN standards NBN EN 12101-2, NBN ENpr 12101-9, NBN EN 54-7 and the regulations of the local fire brigade.

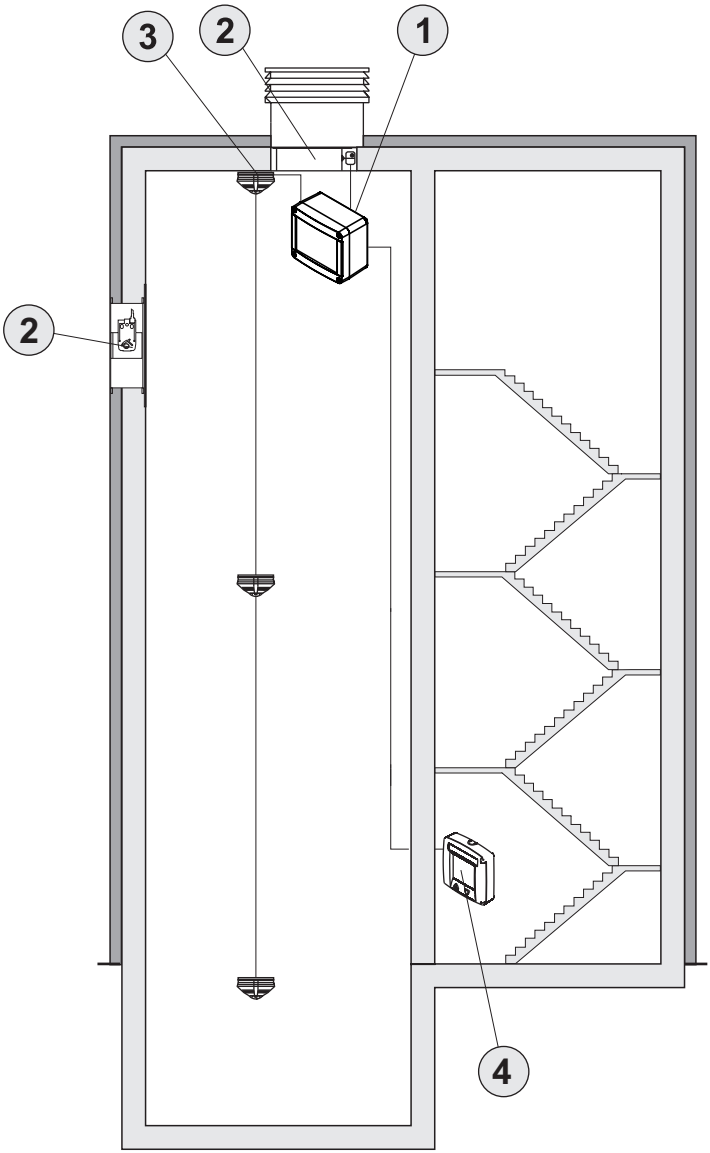
Disposal

Electrical devices, accessories, batteries and packaging should be sorted for environmental-friendly recycling. Do not dispose electrical devices and batteries into household waste!
Only for EC countries:
According the European Guideline 2012/19/EU for waste, electrical and electronic equipment and its implementation into national right, electrical devices that are no longer usable must be collected separately and disposed of in an environmentally correct manner.

WARNING

Read all safety warnings, instructions, illustrations and specifications provided with this product.
Failure to follow all instructions listed below may result in electric shock, fire and/or serious injury.
Save all warnings and instructions for future reference.

Example of application

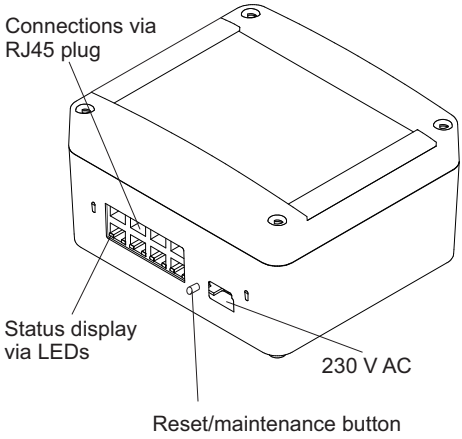


1	Central unit (BK AIO-TS)
2	Horizontal ventilation element / Vertical ventilation element
3	Smoke detector
4	Smoke vent button (RT45/-RJ-LT / RT 45/-RJ)

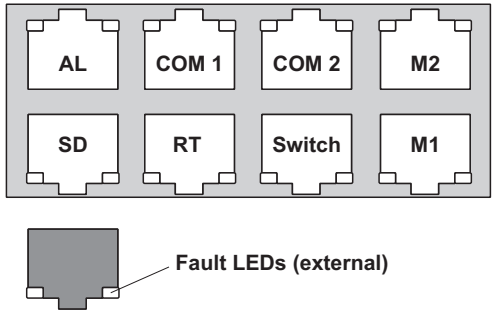
Notice/information:
The system is not shown here with all available components.
If available, the timer and thermostat must be installed near the central unit. The key switch must be installed in consultation with the operator.

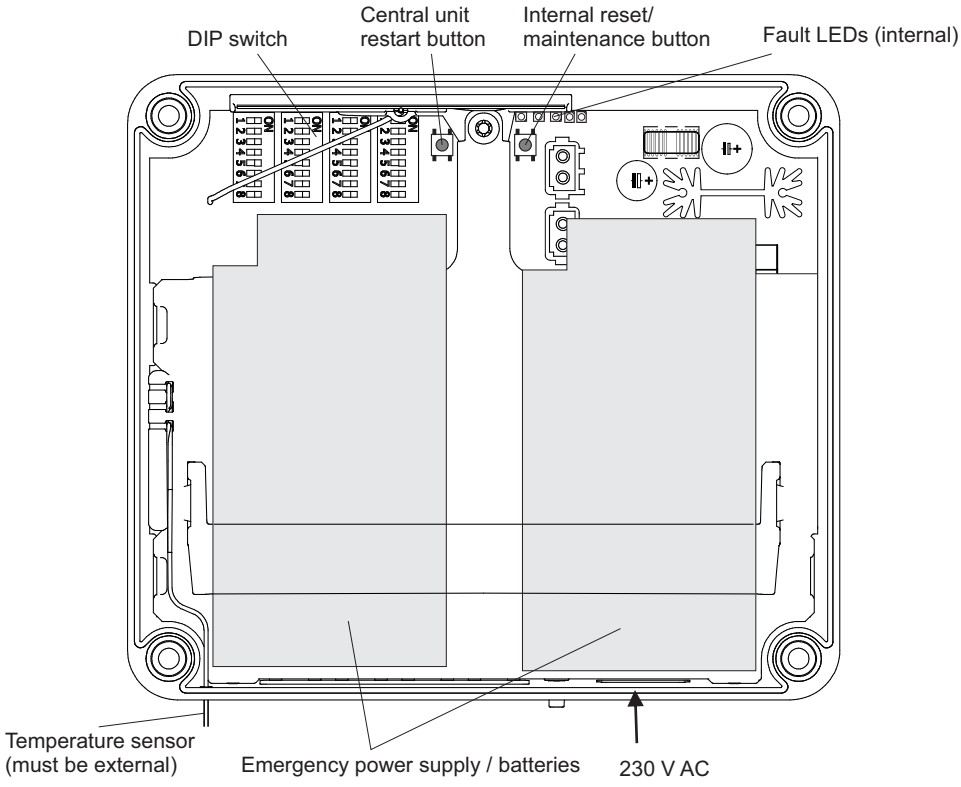
Overview – Central unit

All connections in the compact housing are realised via RJ45 plugs (with the exception of the mains plug, which is designed as 230 V AC).
Emergency power batteries are required in the following cases: DC drives 24 V DC and systems with skylights.



Connections (RJ45 plug)

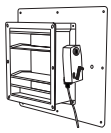




System components – Overview

1.

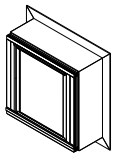
JK-180[1, 2]



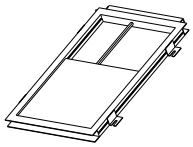
JK-190[1, 2]

NK-SL[1]

Louvre window[2]



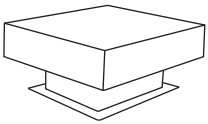
Slideflap[2]



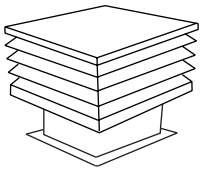
[1] Spring return motor [2] 24 V DC drive

2.

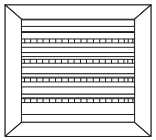
HVC



HVL

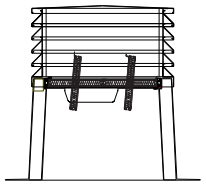


ALAS



3.

Thermoflap[2]



[2] 24 V DC drive

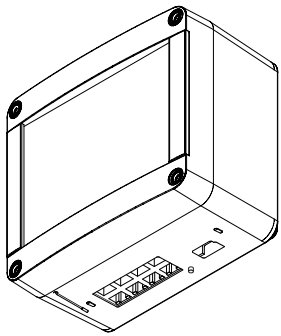
4.

PD-RJ-AIO-P&G

PD-RJ-AIO-End

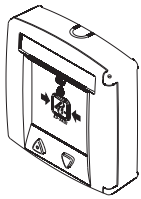
5.

BK AIO-TS

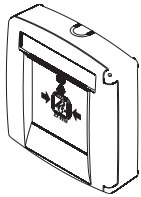


6.

RT 45/-RJ-LT



RT 45/-RJ



System components – Description

1. **Ventilation element (NSHEV)**
   - Containment of power losses by closing the opening in service shafts
   - Fans and dissipates smoke if necessary
   - For vertical or horizontal installation
   - With or without weather protection, depending on the building type

   Spring return motor or 24 V DC drive:
   JK-180 – Louvre flap with installation frame for integrated installation
   JK-190 – Louvre flap for mounted installation

   Spring return motor:
   NK-SL – Louvre flap for mounted installation

   24 V DC drive:
   Louvre window
   Slideflap

2. **Weather protection**
   HVC – Weather protection roof hood for horizontal installation
   HVL – Louvre hood for horizontal installation
   ALAS – Weather protection grille for vertical installation

3. **Thermoflap roof hood**
   Pre-installed combination of weather protection hood, louvre (24V DC drive) and installation ring as a ready-for-installation solution

4. **Smoke detector**
   - Smoke detection over the entire shaft height and forwarding of the signal to the central unit
   - Point smoke detector
   - Selectable depending on shaft dimensions and building requirements

   PD-RJ-AIO-P&G – optical smoke detector
   PD-RJ-AIO-End – optical smoke detector with integrated terminal resistor

5. **Central unit BK AIO-TS**
   - Receiving and forwarding the trigger signal for opening the ventilation element
   - Central unit with integrated temperature sensor and extended connection options

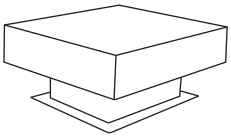
6. **Smoke vent button with status display**
   - Manual triggering of a ventilation or smoke extraction command and display of the system status
   - LED status display depending on system and variant: ventilation, alarm and fault

   RT 45/-RJ – Smoke vent button
   RT 45/-RJ-LT – Smoke vent button with integrated ventilation button

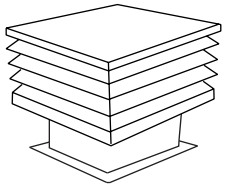
Installation – Weather protection HVC, HVL, ALAS

If there is no weather protection in front of the ventilation opening on site, appropriate weather protection must be professionally fitted to the outer shell of the building. The ALAS grille can be guided through the wall opening from the inside and inserted into the opening. Then pull the ALAS grille towards the outer wall and fasten it to the wall with mounting brackets.

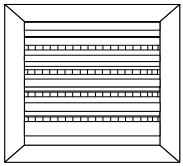
HVC
Weather protection roof bonnet



HVL
Louvre bonnet



ALAS
Weather protection grille
Wall installation



Installation – Thermoflap

The three subcomponents of the TF (see illustration) are pre-installed and supplied in one unit as a ready-for-installation solution.

- Place the TF roof bonnet on the opening.
- Ensure that the connection cable of the louvre points into the shaft.
- Attach the TF roof cowl to the ceiling using the mounting ring and wall anchors.

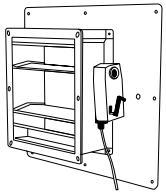
The thermal sealing to the mounting ring can now be carried out (thermal sealing is part of the roof insulation and is always a service provided by the customer).

Installation – Blind JK 180, JK 190, NK-SL

JK-180 – Blind with spring return motor with installation frame for integrated installation

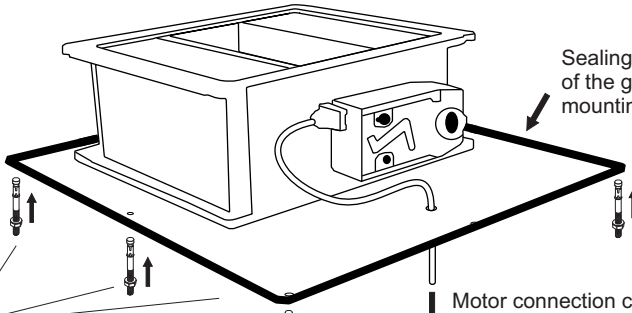
JK-190, NK-SL – Blind with spring return motor for mounted installation

JK-180



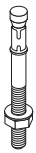
JK-190

NK-SL



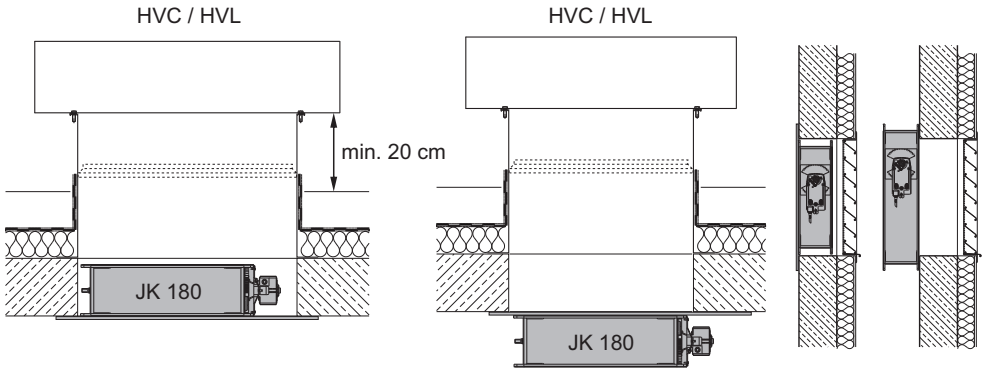
Sealing tape onto the edge of the glue the edge of the mounting plate.

Motor connection cable lay on the shaft side



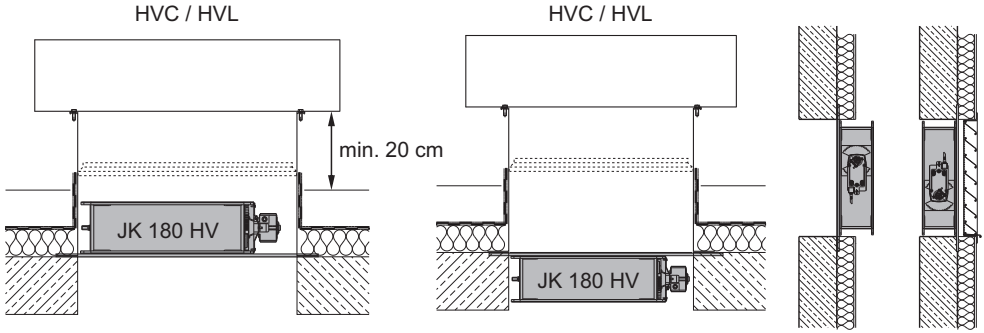
6x
Plug-in anchor
M8x65

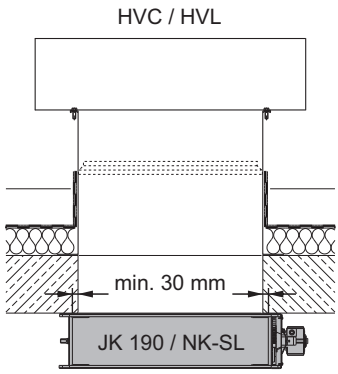
Installation – Blind JK 180, JK 190, NK-SL (continued)



Standard installation JK-180:
flap is inserted into the ceiling or wall from the inside.If the existing opening is too small, the blind with motor can also be installed in the shaft. Ensure that there is sufficient protective space in the top of shaft!

Optional: The flap is installed from above, if the top of shaft is too high or difficult to reach, the blind with the motor is placed on the opening.





Standard installation JK-190, NK-SL:
Flap is mounted from the inside in front of the ventilation opening. The mounting direction is not relevant. Maintain a safety clearance for drilling of at least 30 mm between the flange and the opening on both sides. Observe the required protective space in the top of shaft!

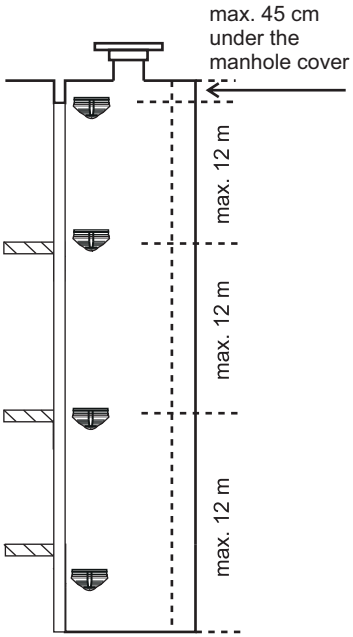
Overview and installation – Point smoke detectors

Point smoke detectors are installed at regular intervals in the shaft and report detected smoke to the central unit (BK AIO-TS).

MInstallation in the service shaft

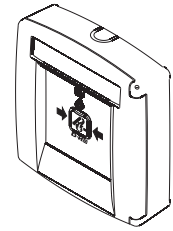
If possible, arrange the point smoke detectors vertically in a line (the maximum distance between 2 point smoke detectors is 12 m). The corresponding RJ cable lengths with coupling are supplied depending on the shaft height. A maximum of 14 smoke detectors are possible per line.

Protect the RJ45 plug from dust during installation (especially during drilling). Mount the point smoke detector on the shaft wall using the installation brackets in the shaft pit. Allow a clearance of 13.5 cm. Connect the RJ45 cables of the point smoke detectors to each other and fasten them to the shaft wall using mounting plugs and tension clamps. Connect the RJ45 cable of the top point smoke detector in the shaft head to the 'SD' socket on the central unit.

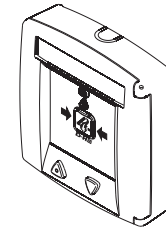


Overview and installation – Smoke vent button

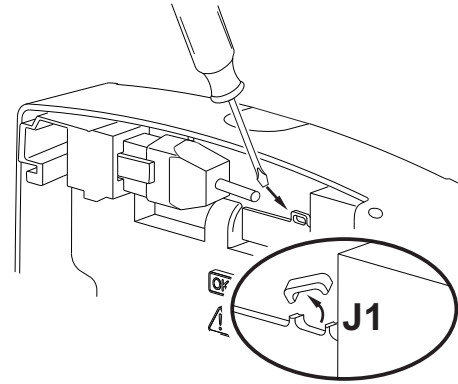
- The smoke vent button (RT45/-RJ-LT / RT 45/-RJ) can be used to initiate manual ventilation and reset an alarm.
- Up to 8 smoke vent buttons can be connected in series.
- A monitoring resistor is used to monitor the line.
- Only if another smoke vent button or a smoke detector is connected to the smoke vent button, the circuit board jumper J1 must be removed!
- Connect the smoke vent button to the 'RT' socket on the central unit.

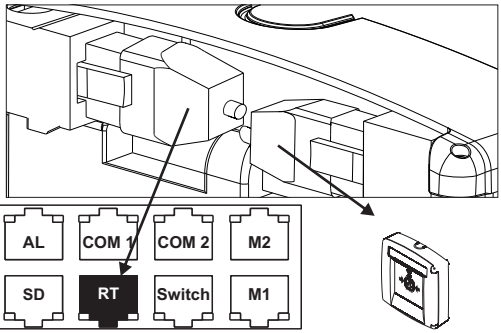


RT 45/-RJ

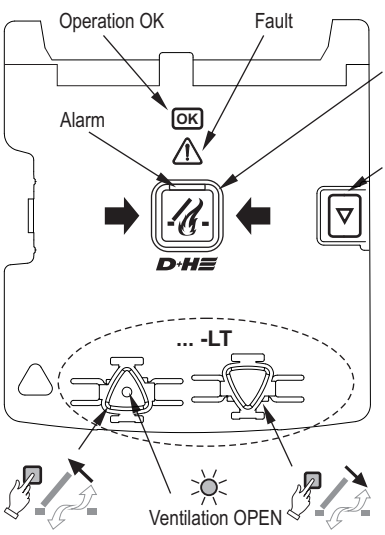


RT 45/-RJ-LT





1 RT	Do not remove J1
> 1 RT	Last RT: Do not remove J1 All other RTs: Remove J1



green OK	red	yellow ⚠	blue ☼	Description
●	○	○	○	System 'OK'
●	●	○	◐	Fire alarm
○	○	◐	◐	Fault*
● ●	○ ○	◐ ○	○ ●	Hygienic ventilation: Manual opening (ventilation button)
●	○	○	◐	Emergency ventilation**: Ventilation alarm, Shaft temperature too high

* Control panel is only partially operational, contact After Sales service
** Flap cannot be closed by manual ventilation button

○ = LED is not lit ● = LED lights up ◐ = LED flashes

Central unit – Technical data

Typ	BK AIO-TS		
Supply	230 V AC, 50 Hz, +10 %, -15 %		
Performance	75 W, 127 VA		
Power in standby	6.5 W, 12.0 VA		
Output voltage	Depending on temperature, max. 27.0 V		
Ripple	0.4 V at 2.0 A load		
Nominal output current	2,3 A		
Number of lines / groups	3 / 2 (stairs, shaft, MR / shaft, MR)		
Shaft line fire detector	max. 14 pcs.		
SHEV button staircase line	max. 8 pcs.		
Output current groups*	max. 2.0 A		
Load signalling contacts	60 V DC / 1 A		
Mode of operation			
- Monitoring	Continuous duty		
- Alarm / ventilation	Short-time duty, 30 % ED		
Housing	Polycarbonate, L=170 mm, W=150 mm, H=92 mm		
Type of protection	IP30		
Protection class	II, with functional earth		
Temperature range	-5 °C ... +40 °C		
Periphery connection	Patch cable 4 x 2 AWG26 7 strands (1 strand: A = 0.129 mm²; 7 strands A = 0.903 mm²)		
Cable lengths Drive group connection	Group current 0.2 A: cable length 110 m Group current 0.5 A: cable length 45 m Group current 1.0 A: cable length 22 m		
Securing the groups	Glass tube fuse: 5 x 20 mm F1.6 A		
Maximum current consumption from battery	2.0 A group current + 0.3 A for monitoring + control panel = 2.3 A		
Emergency power supply (battery)	2 x 12 V / Min 0.8 Ah, Max. 1.0 Ah		
System voltages			
Designation	Connection	Max	Min**
Shaft group	Port 7: 4/5-7/8	27.0 V	19.1 V
Shaft detector supply voltage	Port 1: 7/8-4/5	26.6 V	17.5 V
Line voltage shaft detector	Port 1: 1-2	11.7 V	11.6 V

* The maximum output current is divided between the two groups and must not be exceeded.

** The central unit is operated with 21.0 V at the battery connections and loaded with 2.0 A at the motor groups.

Central unit – Technical data (continued)

Positioning requirements for the groups depending on faults	
Fault	1st group shaft M1
Earth fault	Normally closed contact
Battery	Normally closed contact
Shaft group	Normally closed contact
Shaft line	Normally closed contact

Control sequence in the event of mains outage

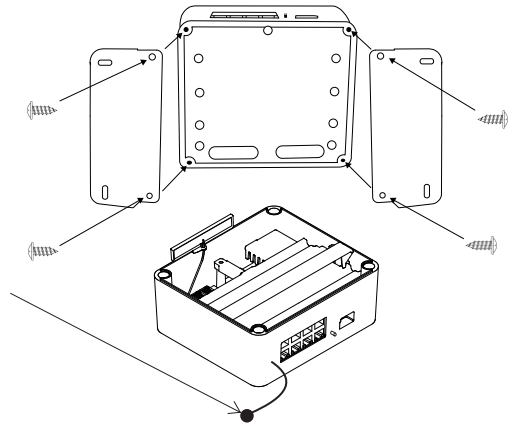
1. Start: Mains outage is detected.
2. The detected mains outage is ignored for 35 seconds (mains outage bypass or switching problems from the power supply).
3. Central fault flag mains outage is set. The groups are run up for 120 seconds.
4. The central unit continues to operate from the battery for 445 seconds (groups continue to run up).
5. *In Germany:* Any alarm follow-up (blockade function) is completed.
6. Central unit is shutdown.

Time balance without active blockade function: t = 35 sec. + 120 sec. + 445 sec. = 600 sec. = 10 minutes

Installation of Central unit in shaft head

Fasten the mounting brackets supplied in the central unit installation set to the housing of the central unit using self-tapping screws.
Position the central unit at eye level on the wall in the shaft head.
Ensure that the LEDs between the RJ45 sockets are visible.
Fasten the central unit to the wall with knock-in plugs through the holes in the mounting bracket.

Make sure that the wire of the temperature sensor is outside the housing (if necessary, lead it out of the housing through the existing opening as shown in the figure).



Safety information: Select an installation location that is not affected by heat from individual components. Protect the RJ45 plug from dust during installation (especially during drilling).

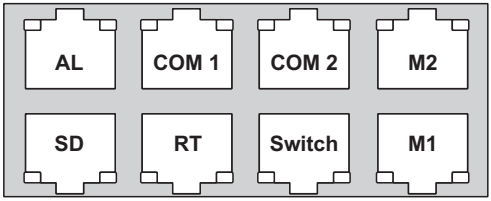
Recommended installation sequence

1. Ventilation element(s) – installation according to specification
2. Central unit (BK AIO-TS)
3. Operation panel (RT 45/-RJ-LT / RT 45/-RJ)
4. Key switch if necessary
5. Timer if necessary
6. Thermostat if necessary
7. Connection to mains voltage

Central unit assignment RJ45 connections

Notice/information:
One spring return motor or one DC motor can be connected to each of the M1 and M2 sockets.

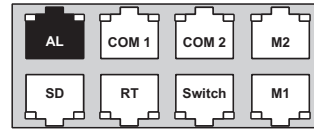
Each M socket can control 2 motors via the function module 2M (max. 2 DC motors or 6 spring return motors with max. total current consumption of 2.0 A, which can be distributed equally between M1 and M2).



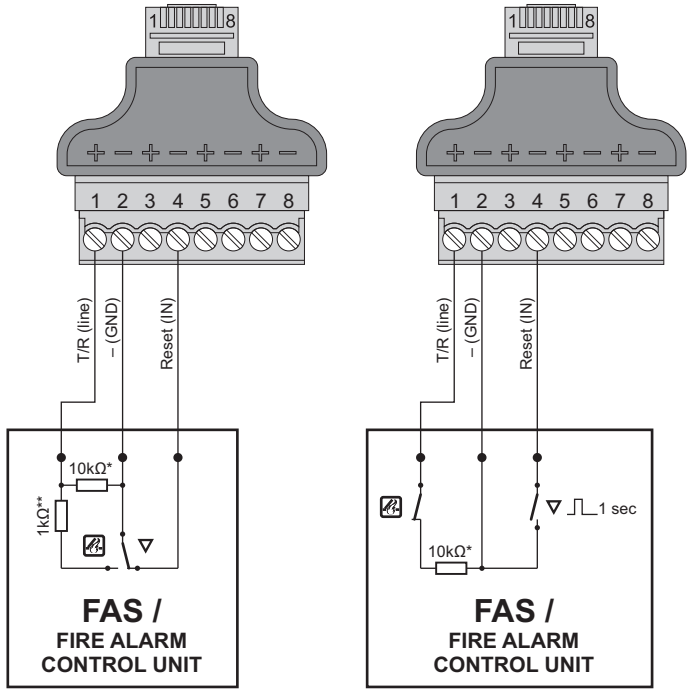
Front RJ connector row	AL		
	COM 1	Signalling relay:	General malfunction OPEN/CLOSED ventilation element
	COM 2	Signalling relay: Signalling contact:	Collective alarm flashing light, siren
	M2	Connection 24 V drives, see notice/information	
Rear RJ connector row	SD	Point detector in the shaft	
	RT	Operation panel connection (RT45/-RJ-LT / RT 45/-RJ)	
	Switch		
	M1	Connection 24 V drives, see notice/information	

Connection – FAS and BMS input

Connection of fire alarm system
The central unit can be controlled by an on-site FAS.
If the service shaft is only monitored by fire detectors of the FAS, e.g. installation condition in Austria, the shaft line, connection 'SD' must be deactivated (DIP switch S1.7 = 'OFF').



Notice/information:
The forwarding of a FAS as an alarm requires precise consideration of the fire protection concept.



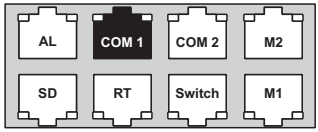
Alternative connection:
Alarm contact = normally closed contact
Alternative connection: Alarm notification from FAS if DIP switch S1.8 = ON (line fault = ALARM)

Reset contact = normally open contact (optional)

* Terminal resistor for cable monitoring
** Alarm resistor

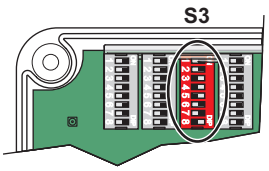
Connection – General status messages COM 1

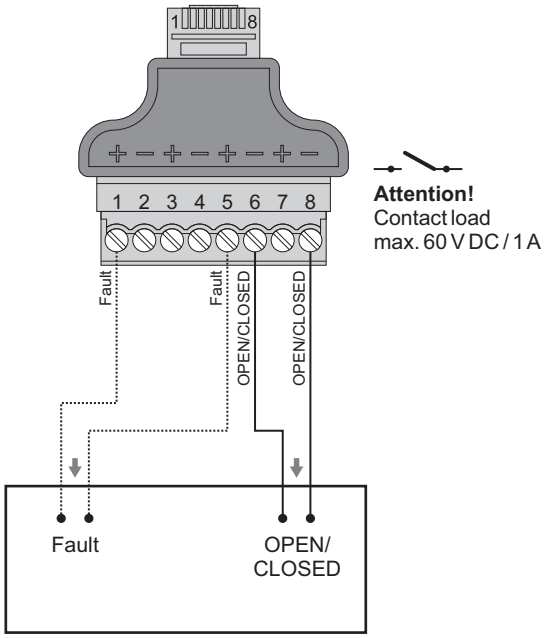
Edition of various status messages via isolated contacts in the BK AIO-TS.



Output - fault message:
Can be set via DIP switches S3.1 and S3.2.
Isolated contact in the central unit closes in the event of a fault.
The contact is normally closed in the event of mains outage.

Output - OPEN/CLOSED signal of the ventilation element:
Can be set via DIP switches S3.3 and S3.4.
Normally open contact in the central unit closes as soon as the ventilation element is open.The contact is normally closed when the ventilation element is closed.



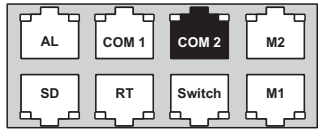


DIP switch S3		
Signalling relay 1: COM 1	**S3.1**	**S3.2**
Free / OFF	OFF	OFF
OPEN signal: 1st group shaft	ON	OFF
OPEN signal: 2nd group shaft	**ON**	**ON**
Signalling relay 2: COM 1	**S3.3**	**S3.4**
Free / OFF	OFF	OFF
Fault shaft detector **or** fault 1st group shaft	ON	OFF
General malfunction	**ON**	**ON**

Connection – Lift shaft control COM 2

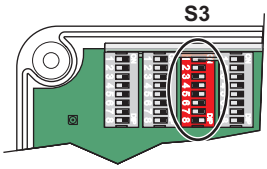
Connection for incoming and outgoing signals.

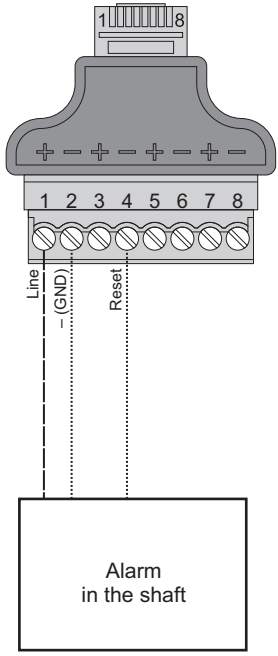
Output – 24 V DC alarm:
For connection of audible alarms.



Output – fault / alarm:
Edition of a fault or an alarm via an isolated changeover contact. The function can be set via DIP switch S3.

Input – fault / maintenance:
The ventilation element is opened by the operation in the event of a maintenance or fault signal. Signal from the operation via isolated contacts.



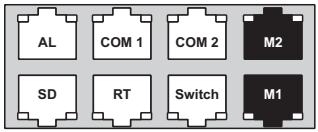


DIP switch S3

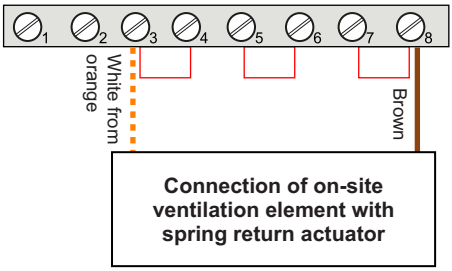
Signalling relay: COM 2	**S3.5**	**S3.6**	**S3.7**
General malfunction (contact 1-5: normally closed contact; contact 3-5: normally open contact)	OFF	OFF	OFF
Fault 1st group shaft (contact 1-5: normally open contact; contact 3-5: normally closed contact)	ON	OFF	OFF
Fault 2nd group shaft (contact 1-5: normally open contact; contact 3-5: normally closed contact)	OFF	ON	OFF
Collective alarm (contact 1-5: normally open contact; contact 3-5: normally closed contact)	**OFF**	**OFF**	**ON**
Linear alarm shaft (contact 1-5: normally open contact; contact 3-5: normally closed contact)	ON	OFF	ON

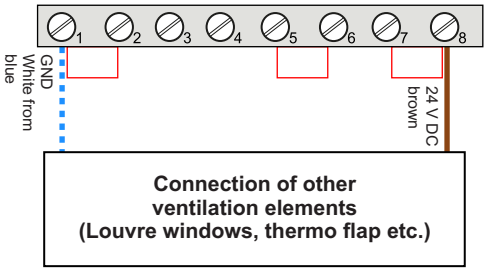
Output: M1 & M2

For the forwarding of:
- existing NSHEVs on site
- an external fire alarm system
- a building control centre
- of RT45/-RJ-LT / RT 45/-RJ, siren, ventilation switch etc. not directly on the shaft
- Components with cable guidance through empty conduits



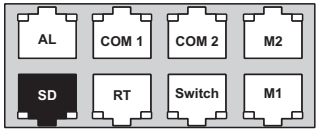
Connection of 24 V spring return drives and 24 V DC drives





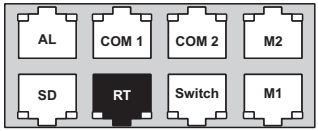
Connection: SD

For forwarding smoke detection components, e.g:
- Point smoke detectors in the service shaft



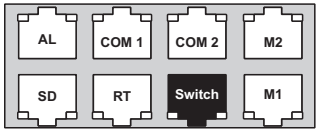
Connection: RT

For forwarding an operation panel (RT45/-RJ-LT / RT 45/-RJ)



Connection: Switch

For forwarding additional components, e.g:
- Thermostat
- Humidity sensor
- Key switch



Notice/information:
Further information on the connection to the RJ45 sockets can be found in the instructions for the relevant components.

Setting the coding switch on the central unit

All systems are supplied with the following DIP configuration:
- one ventilation element connected to the RJ45 socket M1
- one connected operation panel RT45/-RJ-LT / RT 45/-RJ

ON corresponds to switch position 1.

Coding switch S1 (1st from left, acts on M1)	**Status**	**DIP**
1st group shaft alarm delay (60 s)	ON / OFF*	1
1st group shaft: OPEN running time limit	ON / OFF*	2
1st group shaft (ventilation time limitation 15 minutes):	ON / OFF*	3
1st group shaft (group fault = alarm):	ON / OFF*	4
1st group shaft (alarm follow-up):	ON* / OFF	5
Line SD Active (ON = active / OFF = not active)	ON* / OFF	7
Line fault = alarm, all lines	ON / OFF*	8

Coding switch S2 (2nd from left, acts on M2)	**Status**	**DIP**
Engine room group M2 active (ON = active / OFF = not active)	ON / OFF*	1
2nd group shaft: OPEN running time limit	ON / OFF*	2
Ventilation time limitation (15 min)	ON / OFF*	3
Group fault = alarm	ON / OFF*	4
Alarm follow-up	ON / OFF*	5
Time-limited alarm (5 min., alarm output port 6 / pin 2)	ON / OFF*	6
Assignment of line AL to motor output M1	ON / OFF*	7
free	ON / OFF*	8

Coding switch S3 (3rd from left, OPEN signals) **Signalling relay 1: COM 1 – General status reports**	**DIP 1**	**DIP 2**
Free / OFF	OFF	OFF
OPEN signal: 1st group shaft	ON	OFF
OPEN signal: 2nd group shaft	OFF	ON
OPEN signal: 1st group shaft or 2nd group shaft	ON*	ON*

* Delivery state

Setting the coding switch on the central unit (continued)

Coding switch S3 (3rd from left) Signalling relay 2: COM 1 – General status reports	**DIP 3**	**DIP 4**
Free / OFF	OFF	OFF
Fault shaft detector or fault group 1 (shaft group)	ON	OFF
General malfunction	ON*	ON*

Coding switch S3 (3rd from left) Signalling relay 3: COM 2 – Incoming and outgoing signals	**DIP 5**	**DIP 6**	**DIP 7**
General malfunction (contact 1-5: normally closed contact; contact 3-5: normally open contact)	OFF	OFF	OFF
Fault 1st group shaft, Alarm ventilation element M1 (contact 1-5: normally open contact; contact 3-5: normally closed contact)	ON	OFF	OFF
Fault 2nd group shaft, Alarm ventilation element M2 (contact 1-5: normally open contact; contact 3-5: normally closed contact)	OFF	ON	OFF
Collective alarm (contact 1-5: normally open contact; contact 3-5: normally closed contact)	OFF*	OFF*	ON*
Linear alarm shaft, Alarm notification via the smoke vent button (contact 1-5: normally open contact; contact 3-5: normally closed contact)	ON	OFF	ON

Coding switch S3 (3rd from left, classification of power supply)	**Status**	**DIP**
ON: battery operation; OFF: no battery, only spring return motors	ON / OFF*	8

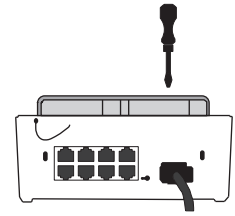
Coding switch S4	**Status**	**DIP**
Maintenance button ON / OFF	ON* / OFF	1
Central alarm (lines)	ON* / OFF	2
Internal temperature sensor: triggering all lines at 72 °C	ON* / OFF	5
Internal temperature sensor: Ventilation threshold: OFF = approx. 30 °C; ON = approx. 35 °C	ON / OFF*	6

Coding switch S4 Assignment: Internal temperature sensor for ventilation	**DIP 7**	**DIP 8**
No assignment (OFF)	OFF	OFF
1st group shaft	ON	OFF
2nd group shaft	OFF	ON
1st group shaft and 2nd group shaft	ON*	ON*

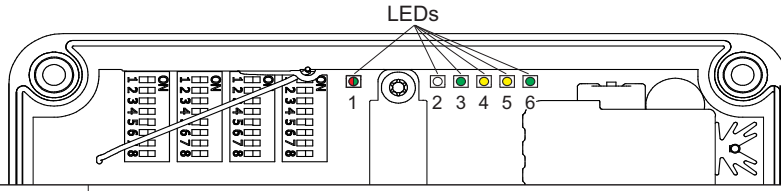
*Auslieferungszustand

Commissioning central unit

Wire the mains voltage using the cable supplied.
Connect the 230 V AC plug to the central unit.
Check the display of LEDs 3 and 6 in the housing of the central unit.



Caution! The plug is engaged. If the plug is pulled out incorrectly, the plug and socket may be damaged.
Before pulling out the plug, open the plug latch with a flat-blade screwdriver while the housing is normally closed.



LED 1	-
LED 2	Fault: Memory error / error in programme sequence / oscillator error (yellow)
LED 3	Central unit OK (green)
LED 4	-
LED 5	Fault battery (yellow; without function during battery-less operation)
LED 6	Mains voltage (green)

Maintenance and cleaning

Once a year by a specialist company authorised by the device manufacturer. Renew the inspection plate and keep a log book. Inspection and maintenance must be carried out in accordance with the D+H maintenance instructions. Only original D+H spare parts may be used. ON repairs are carried out exclusively by D+H. Only carry out cleaning work in a de-energised state. Wipe off dirt with a dry, soft cloth. Do not use cleaning agents or solvents.

Preparation:
- Use safety equipment.
- Inspect the site.
- Inform the person responsible for the building about the maintenance work.
- If the system is connected to an on-site fire alarm system, arrange for the shutdown of the corresponding line.
- If maintenance or repair work is to be carried out on the ventilation element, disconnect the disconnect the central unit from the power supply.

Carry out the following testing:
- Visual inspection for damage, tightness and dirt.
- Check clearances in the shaft between components and ventilation element in accordance with EN 81-20.
- Check protective spaces in accordance with EN 81-20.
- Function test of the system components.
- Check all relevant voltage supply units.
- Logging of professional maintenance work and identification in accordance with customer specifications.

Fault test of the components:
- Pull out all components connected via RJ45 plugs one after the other.
- A fault, possibly with an alarm, is immediately displayed on the RJ45 socket LEDs of the central unit and on the smoke vent button (if present).
- Plug the plug back in. The fault goes out. If necessary, reset the alarm using the reset button.
- If the red LED on the ‘SD’ socket flashes, the central unit is in maintenance mode.

Set maintenance mode, ventilation elements function test

1. Press the reset button for 3 seconds (maintenance level 1 is active).
- The ventilation element opens.
- The LED test is performed, all LEDs on the ports light up for approx. 4 seconds.
- Pending alarms are reset.
- LED A flashes red once per second = Maintenance level 1.

2. Press the reset button again for 3 seconds (maintenance level 2 is active).
- The ventilation element remains closed (e.g. blower door test).
- LED A flashes red 2x per second = Maintenance level 2.
- The ventilation element closes.

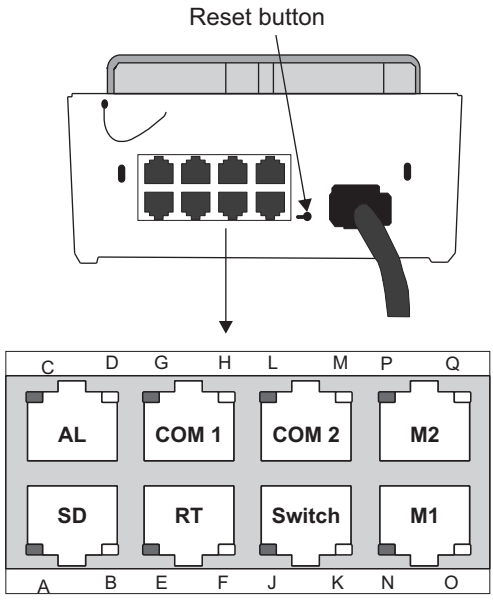
3. Check that the ventilation element louvres close airtight (visual inspection). If the seal/gaskets are damaged to a thickness that no longer guarantees airtight closure of the flap, the entire flap must be replaced. The rubber seals of the louvres cannot be replaced.

4. Activate maintenance level 1 again (press the reset button for 1 second).
- The ventilation element opens again.

5. Visual inspection of the ventilation flaps (see page 21).

6. Deactivate maintenance level 1 (press the reset button for 1 second).
The central unit is back in normal operating mode.

7. Carry out further testing:
Additional components, emergency power supply (option)

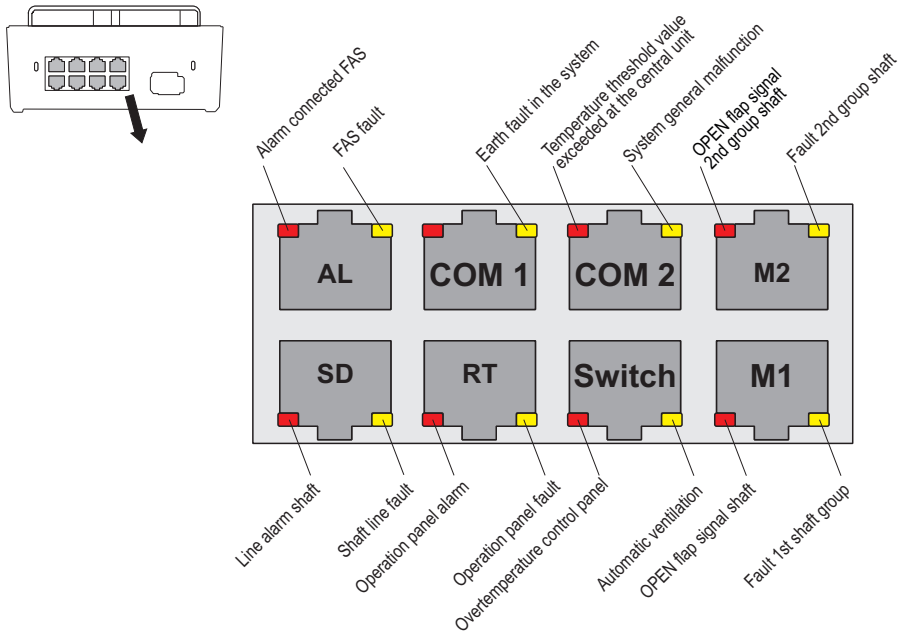


Shaft wall

Maintenance of drives for D+H JK-180 / JK-190 / NK-SL ventilation elements

1. The drives of the JK-180 / JK-190 / NK-SL ventilation elements are designed for at least 60,000 'OPEN/CLOSED' cycles.
2. If this number of cycles is exceeded, the return spring or the drive mechanism may fail. **In this case, the drive must be replaced.**
3. Read off the number of cycles (see p. 23).
4. Enter the number of cycles in the maintenance manual. The counter cannot be set to zero.
5. If the motor has been replaced, the counter position must be noted in the maintenance manual during commissioning.
6. The replacement must be documented in a traceable manner.

Status displays (normal operation)



Maintenance drives external ventilation elements

1. External, electrically driven ventilation elements such as louvre windows and skylight domes have only been tested up to 11,000 cycles each (CE certificate in accordance with EN 12101-2).
2. Maintenance of a Slide Flap ventilation element required after 20,000 double strokes.
3. If this number of cycles is exceeded, the drive mechanism may fail.
4. When the maximum number of cycles specified by the manufacturer is reached, either the motor or the motor including the ventilation element must be replaced.

Observe the relevant manufacturer's instructions.

5. Read off the number of cycles (see below).
6. If the motor has been replaced, the counter position must be noted in the maintenance manual during commissioning.
7. Document exchange in a traceable manner.

Cycle counting of the motor strokes on the central unit (BK AIO-TS)

1. Ventilation element drive M1
Red LED (N) flashes for 10,000 digit (e.g. 2x = 20,000)
Yellow LED (O) flashes for 1,000 digit (e.g. 7x = 7,000)

2. Ventilation element drive M2
Red LED (P) flashes for 10,000 digit
Yellow LED (Q) flashes for 1,000 digit

Function test – Additional components

RT 45/-RJ-LT / RT 45/-RJ signalling button

1. Operate the push-button alarm.
   Red 'Fire alarm' LED lights up.
   If the red LED is not lit:
   Replace the push-button detector, carry out a function check of the central unit if necessary.
2. Cancel the alarm with the reset button.

Thermostat in the shaft head

1. Note the default temperature.
2. Reduce the temperature setting on the thermostat below the shaft / room temperature.
   Ventilation element opens (blue 'Ventilation' LED display on RT 45/-RJ-LT / RT 45/-RJ).
   If ventilation element does not open: Replace thermostat, function check central unit if necessary.
3. Close the ventilation element: reset the default temperature on the thermostat.

Notice/information:
The temperature alarm only goes out after a hysteresis time of approx. 20 minutes has drained. If premature resetting of the ventilation timer is desired, the central unit must be de-energised.

Timer (optional)

1. Compare the time displayed on the timer with the current time.
2. If there is a deviation of more than one minute, correct the time on the timer (see operating instructions for the timer).

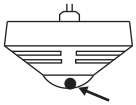
Function test – Smoke detection system

Prerequisite: System is in normal operating condition
If connected to an on-site fire alarm system (FAS), arrange for the shutdown of the corresponding line of the fire alarm system by the person responsible for the building. Arrange for forwarding to the fire alarm system again after the test.

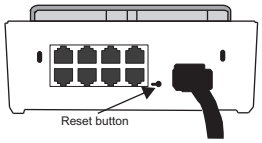
Function test – Point smoke detector (smoke test)

Notice/information:
According to DIN 14675 and DIN 14677, optical smoke detectors must be replaced:
Type SD-O 371: every 8 years (as self-compensating)

Type: SD-O 371



1. Spray the point smoke detector for 1 second with a test smoke spray near the point smoke detector. Repeat this process after 10 seconds until the point smoke detector reacts (max. 10 times).
   LED on the point smoke detector lights up red >>> Central unit reports fire (LED socket 'SD' lights up red).
   The ventilation element opens completely.
2. Blow out the signalling head so that the test smoke can escape.
3. Repeat the smoke test for each point smoke detector in the system.
   After the first signal, the central unit (LED socket 'SD') and the operation panel (RT45/-RJ-LT / RT 45/-RJ) already indicate a fire alarm.
4. Reset the fire alarm using two possible reset commands until it no longer recurs:
   Press the reset button on an operation panel (RT45/-RJ-LT / RT 45/-RJ).
   Press the reset button on the central unit for approx. 3 seconds to access maintenance level 1. Then press the reset button for 1 second to return to normal operating mode.

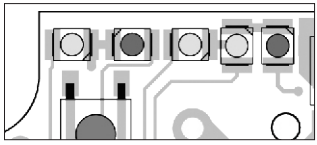
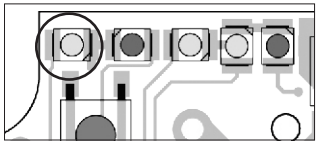
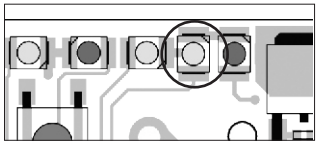


Completion of maintenance

1. If not already done, reset the system to normal operating mode (press the 'Reset' button on the central unit for 1 second).
2. Inform the person responsible for the building that the maintenance work has been completed.

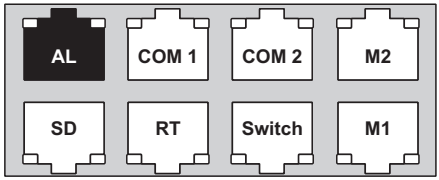
Troubleshooting – Internal fault indications

Before Checking a fault, open the housing cover of the central unit.

Fault	Cause	Remedy
No LED lit 	230 V mains voltage interrupted	Check the mains fuse in the fuse distribution board
LED 2 'Fault' lights up 	Memory error Errors in the programme sequence Oscillator error	Restart control panel Contact service if necessary
LED 5 'Emergency power supply' lights up 	Emergency power supply fault	Check the mains fuse in the fuse distributor Check battery charge, replace battery if necessary

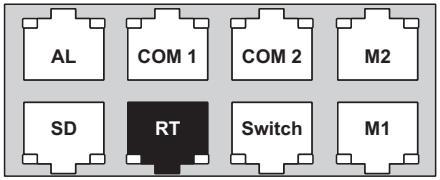
Notice/information:
LED 3 'Central unit' and LED 6 'Mains voltage', which are not mentioned here, light up green during normal operation and therefore do not indicate a fault. If these two LEDs do not light up, the mains voltage is interrupted (see fault 'No LED lit').

Troubleshooting – External fault indications



Fault (lines)

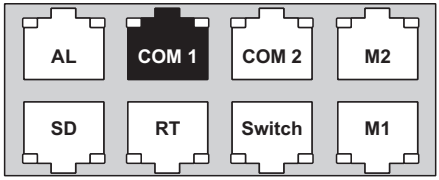
LED (yellow) when
- RJ45 plug connection recessed
- Point smoke detector removed
- Connector to FAS interrupted



Fault (RT)

LED (yellow) when
- RJ45 plug connection recessed
- RT operating button removed
- Mini switch on RT circuit board is in the wrong position
- Circuit board jumper on last RT board removed

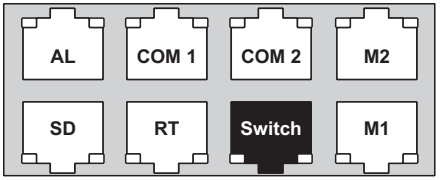
Testing of:
- Connection / cable of fire alarm components
- Regulator components



Fault (earth fault)

LED (yellow) for
- System component or cable connection has an insulation fault
- Electrical connector with protective earth or earth potential

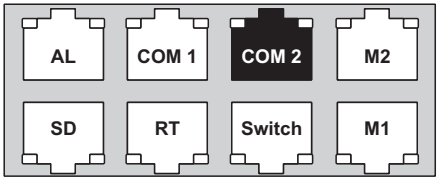
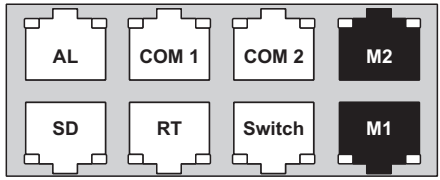
Testing of:
Earth connection to components or cable connection.
For localisation, disconnect the RJ45 plug one after the other, for example, while observing the LED.



Status (ventilation)

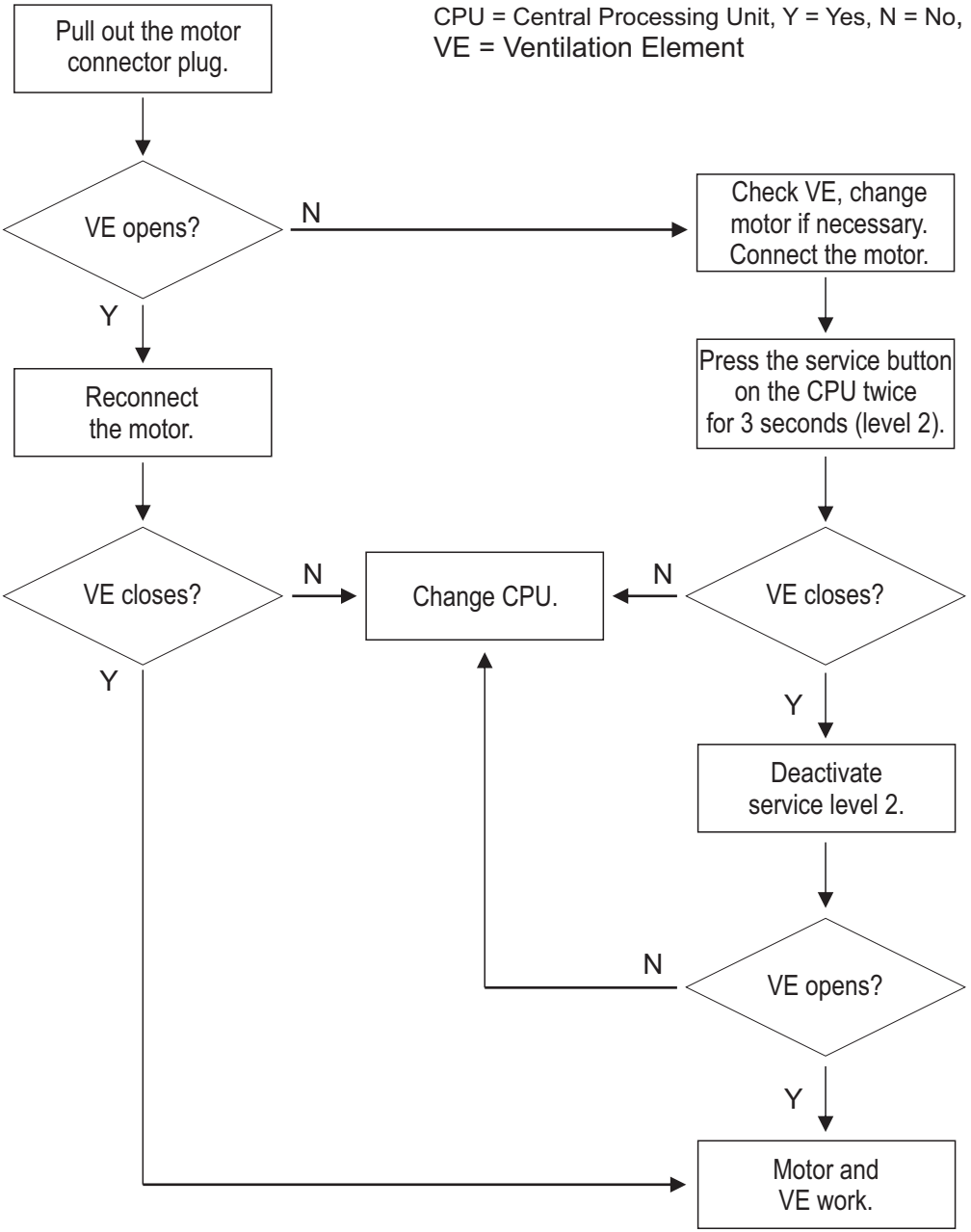
LED (yellow) for
- Temperature signal > 35 °C/35 °C

Troubleshooting – External fault indications (continued)

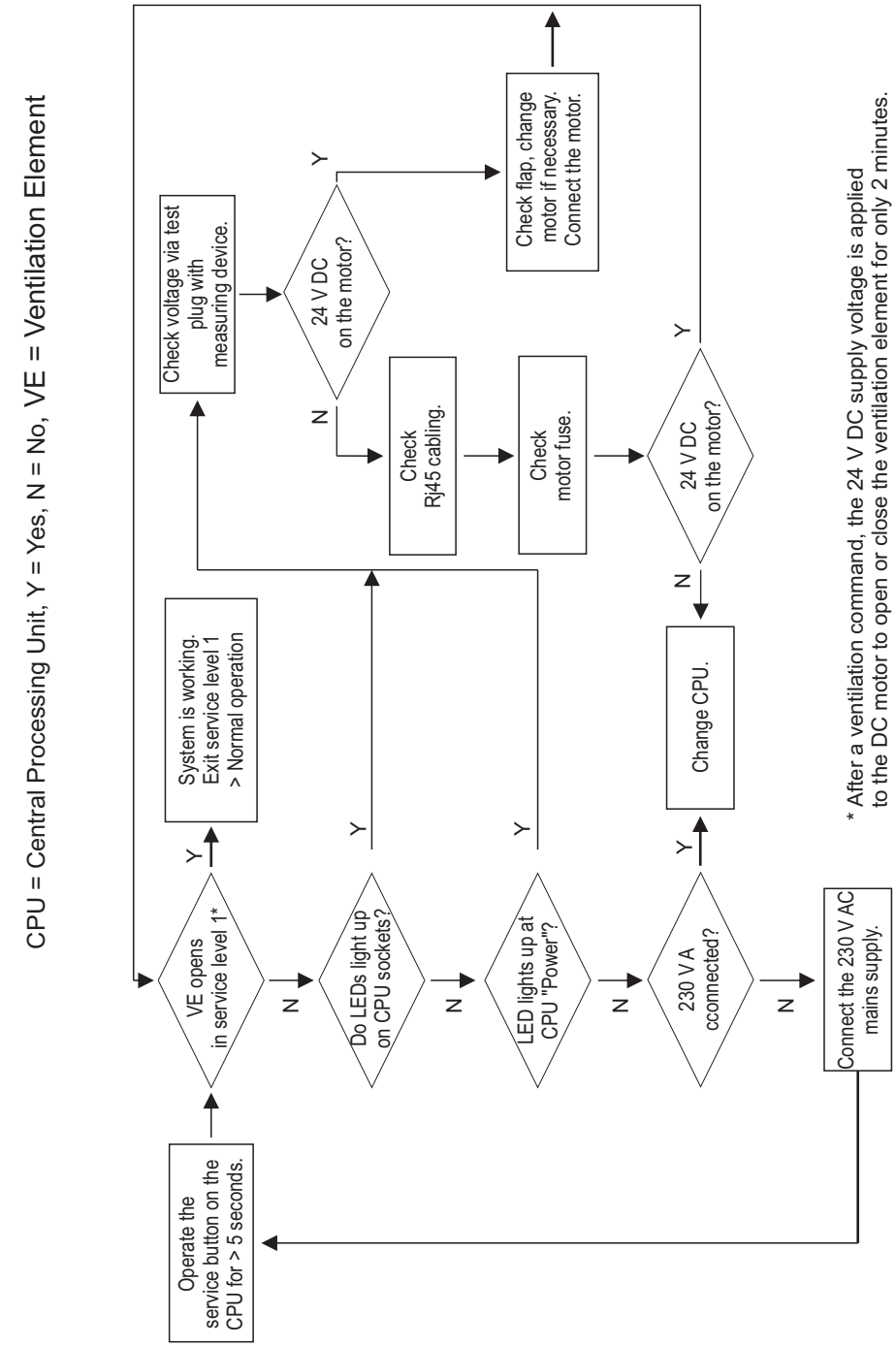
	
Status (ambient temperature)	Fault / status (motor group)
LED (yellow = signal) for - general malfunction LED (red) for - Ambient temperature in the shaft or machine room > 30 °C / < 72 °C LED (flashing red) for - ambient temperature in central unit > 72 °C	LED (yellow) when - RJ45 plug connection to motor recessed - Central unit fuse motor defective LED (red) for - OPEN signal: ventilation flap is not closed
For system test temporarily switch DIP 4.7 = OFF DIP 4.8 = OFF **Restore delivery state after system check!**	Testing of: - Connection of the motors - Central unit fuse Motor

Troubleshooting – Ventilation element does not open (spring return motor)

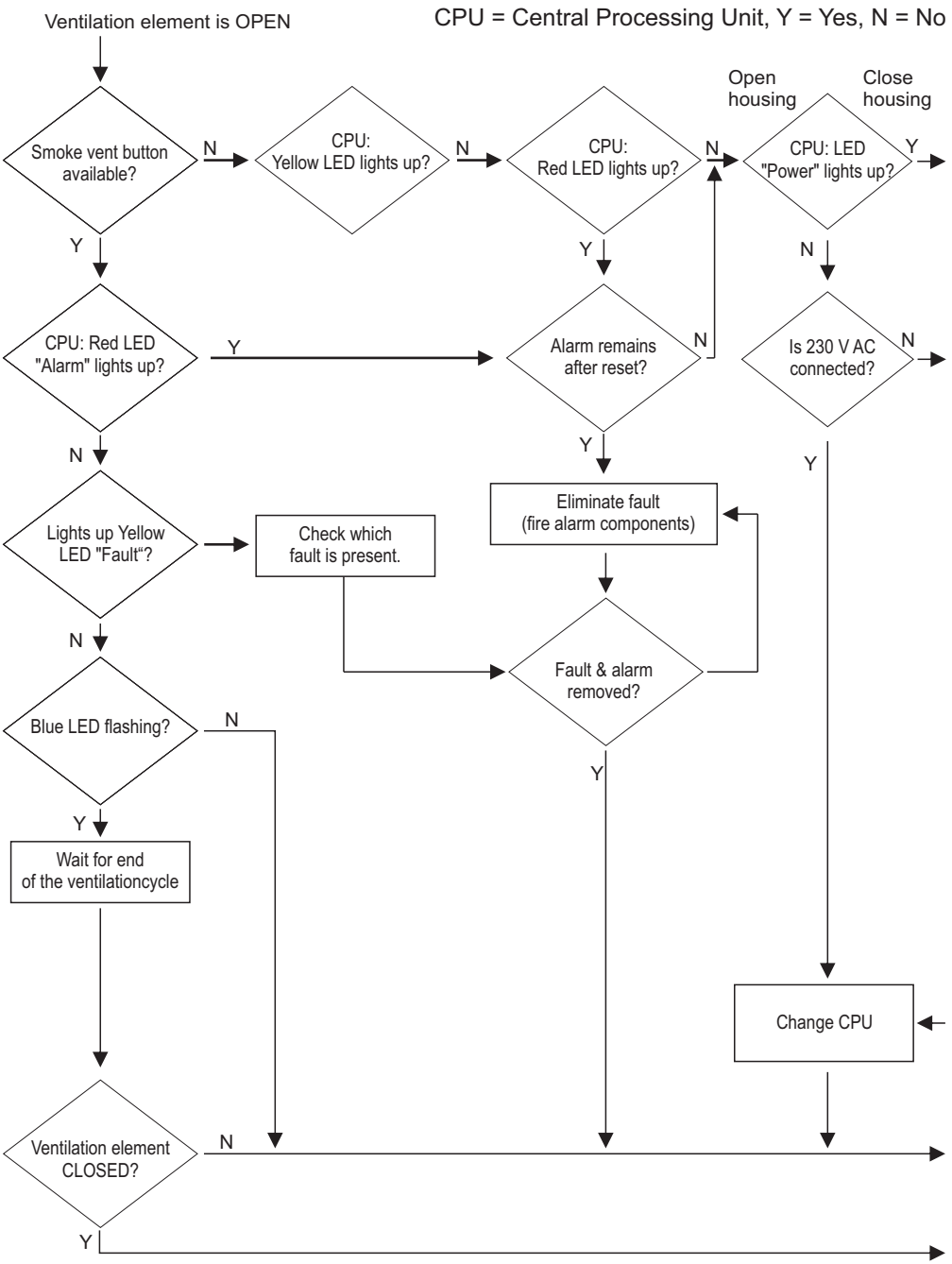
Initial situation: Flap does not open in the event of an alarm or fault, at least 1 LED on the central unit lights yellow or red.



Troubleshooting – Ventilation element does not open (DC motor)

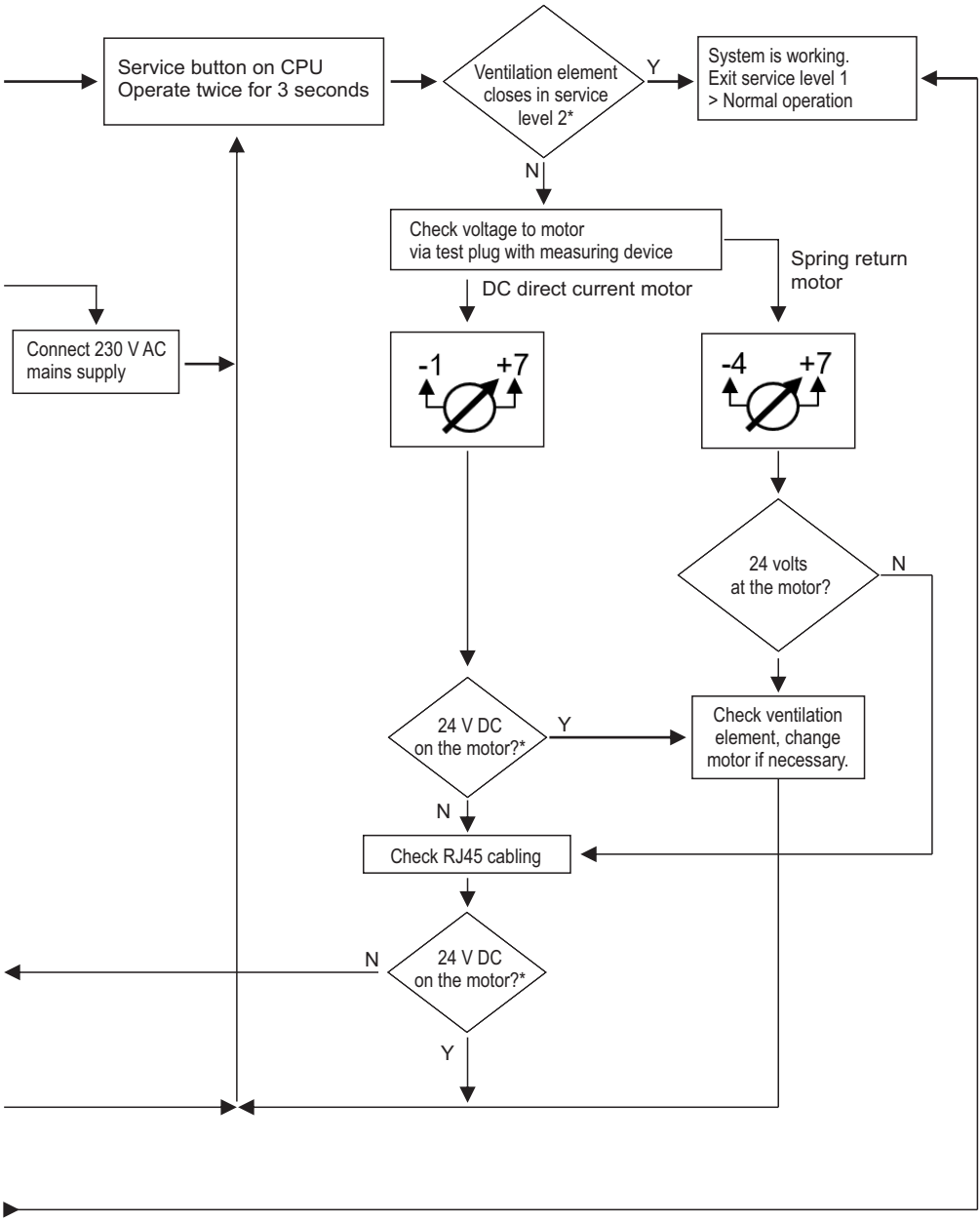


Troubleshooting – Ventilation element does not close



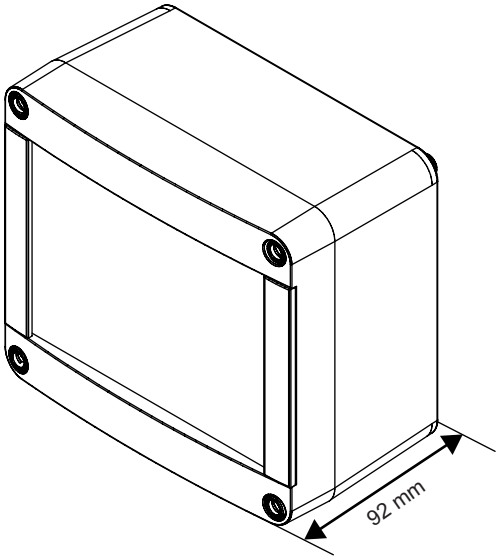
Troubleshooting – Ventilation element does not close (continued)

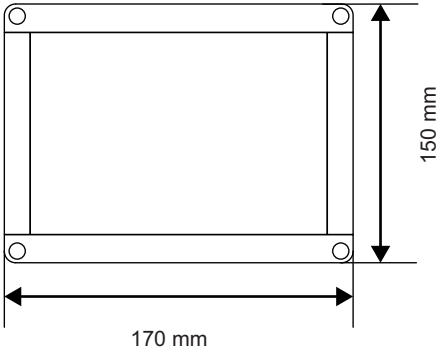
CPU = Central Processing Unit, Y = Yes, N = No



* After a ventilation command, the 24 V DC supply voltage is applied to the DC motor to open or close the ventilation element for only 2 minutes.

Dimensions





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