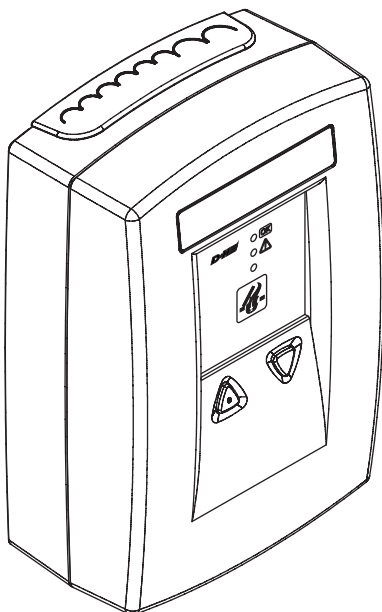




# D+H

## RZN 4503-T

CE



VdS

G 509006  
Anerkennungs-Nr.  
approval-no.  
(orange)

VdS

0786 - CPD - 50435  
EN 12101-10 : 2005/AC:2007  
conform

## Table of contents

Introduction / Assembly scheme .....	3
Intended use / Safety notes .....	4
SHEV opening .....	4
Servicetimer.....	4
Important regulations / Repair and cleaning .....	4
Declaration of Conformity / Disposal .....	4
Technical data.....	5
24 v - Emergency supply .....	5
Pictogram explanation .....	5
Fire recognition element.....	5
Mounting of SHEV control panel .....	6-7
Overview control elements .....	8
View motherboard.....	8
DIP switch settings .....	9
Cables for D+H smoke an heat vent systems / Wiring plan (Paragon) .....	10
230 V supply .....	11
Connection overview .....	11
Connection of smoke vent buttons .....	12
Connection of fire detector / Connection of fire alarm system .....	13
Line shutdown.....	13
Drives .....	13
Informations for starting .....	14
Operation.....	15-17
Inspection / Maintenance.....	18

# Introduction

## D+H service and sales partners

Safety in the building not only comes from the product. Above all, safety results from competence. All D+H service and sales partners are certified and regularly trained specialist SHEV businesses. Working closely with D+H Mechatronic AG as the manufacturer, they develop comprehensive system solutions for SHEVs and natural building ventilation. With integral customer support and continuous quality assurance in all phases of the project: from sales advice, planning and project management through to installation, commissioning, repair and service. The highest national and international quality standards are therefore reliably fulfilled.

## Installation and operation

The comprehensive network of D+H service and sales partners is at your disposal to professionally install your system and commission it. Our partner system guarantees that D+H products are installed exclusively by trained and experienced fitters, in compliance with the technical guidelines and specifications. Personal handover and training for users is included.

## Maintenance and repair

Every building operator is responsible for ensuring that its safety equipment works reliably. Regular and professional maintenance ensures that your system is always operational. As specialist SHEV businesses, the D+H service and sales partners are best qualified to carry out maintenance. By taking out a maintenance contract, operators can prove at all times that they have fulfilled their obligations.

## Quality with guarantee

For all D+H SHEV systems, which have been installed by a D+H service and sales partner and are regularly serviced, you will receive extended warranty services. Ask your local D+H service and sales partner about this.

## Always nearby

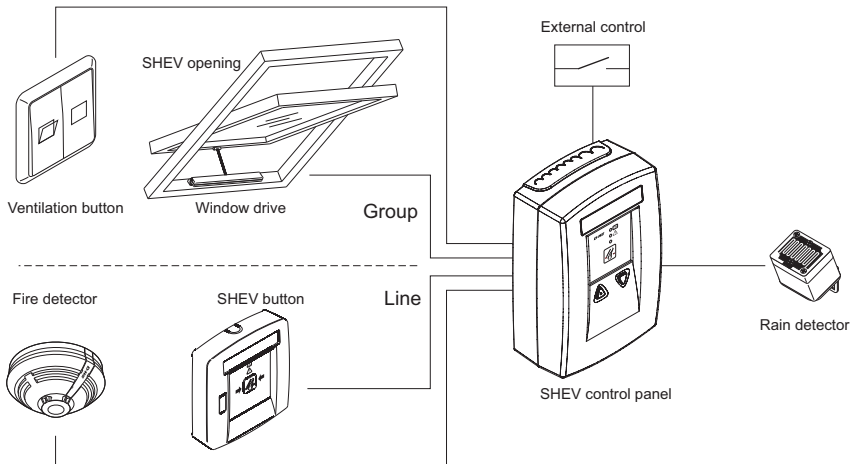
With the network of our own subsidiaries and exclusive partners, we are represented nearly all over the world.

Are you looking for your local D+H partner?

Simply visit our website:

[www.dh-partner.com](http://www.dh-partner.com)

# Assembly scheme



## 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.

## Safety notes

### Operating voltage 230 V AC!

#### Risk of injury from electric shock!

- Connection has to be carried out only by an authorized electrical specialist
- Only for inside mounting
- Just use unchanged original D+H parts

## Important regulations

Observe regulations for danger warning systems VDE 0833, guidelines for electrical systems VdS 2221, VDE 0100, DIN 18232 for smoke and heat vent systems, regulations of the local fire-brigade and of EVU for connection to mains supply.

## SHEV opening

Smoke gases are to be carried off as unhindered as possible through smoke and heat vent opening in case of fire. Size, kind and arrangement of the opening is of decisive significance for an optimal effect of the smoke and heat vent system.

These requirements are defined in the relevant regulations of the respective country.

More informations, are also available under [www.rwa-heute.de](http://www.rwa-heute.de).

The SHEV opening should be coordinated with the responsible fire protection authority.

## Declaration of Conformity

We declare under our sole responsibility that the product described under "Technical Data" is in conformity with the following directives:

2014/30/EU, 2014/35/EU

Technical file at:

D+H Mechatronic AG, D-22949 Ammersbek

Dirk Dingfelder  
Member of the Board  
20.03.2018

Maik Schmees  
Authorized signatory, Technical Director

## Intended use

- SHEV control panel in particular for staircases
- Microprocessor based control panel
- 1 line, 1 group
- 3A actuating current
- Comfort functions for daily ventilation
- Only for inside mounting

## Servicetimer

An overdue maintenance of the system will be indicated by the control panel after about ca. 14 to 16 months.

The yellow LED in the control panel and the smoke vent button will start flashing.

A malfunction of the smoke vent system will be still indicated by the extinction of the green LED in the smoke vent button.

After the maintenance time is expired (approx. 14 to 16 months), the ventilation function OPEN can be interrupted depending on the presetting of the service timer.

**Attention: Reset of the service timer can be carried out by a specialist company only, who has been authorized by the appliance manufacturer.**

## Repair and cleaning

Inspection and maintenance has to be carried out according to D+H maintenance notes. Only original D+H spare parts may be used. Repair is to be carried out exclusively by D+H.

Wipe away debris or contamination with a dry, soft cloth.

Do not use cleaning agents or solvents.

## 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.



Technical data	
Type	RZN 4503-T
Power supply Rated power Stand-by operating	230 V AC, 50 Hz, +10%, -15% 100 VA < 5 W
Output voltage Ripple Output rated current Number of lines / groups * Fire detector per line SHEV button per line Current per group **	24 V DC $U_{ss} < 0,5 V$ ; < 1 % 3 A 1 / 1 max. 14 pcs. max. 8 pcs. max. 3 A
Mode of operation - Monitoring - Alarm / Ventilation Housing Colours Ingress protection Protection class Temperature range Dimensions WxHxD VdS Approval-No.	Continuous duty Short-time duty (30 % DC) Aluminium orange, gray, red, blue, yellow IP 30 II with functional ground -5 ... +40 °C 156 x 232 x 83 mm G 509006 (only orange)
* D+H Highspeed (HS) drives will be supported. ** The total current of the control panel must not be exceeded.	

## 24 V - Emergency supply

Emergency power supply for 72 hours.  
**Use VdS approved storage batteries only!**

1 x 12V / 3,4 Ah  $\pm 15$  % (Type 8)

With connection of D+H alarm devices:  
 Total current of 3 A must not be exceeded. If necessary, reduce drive current. Emergency power supply time of 72 hours can be shorter in case of fire alarm. Total standby current (alarm devices and +N) must not exceed 0.25 A.









### Battery control - TD

**T** Temperature-guided charging of accumulator  
**D** Discharge control

In case of power failure and total discharge of accumulator, the control panel will switch off. In this case, smoke vent is no longer ensured.

In this case a malfunction will be no more indicated either.

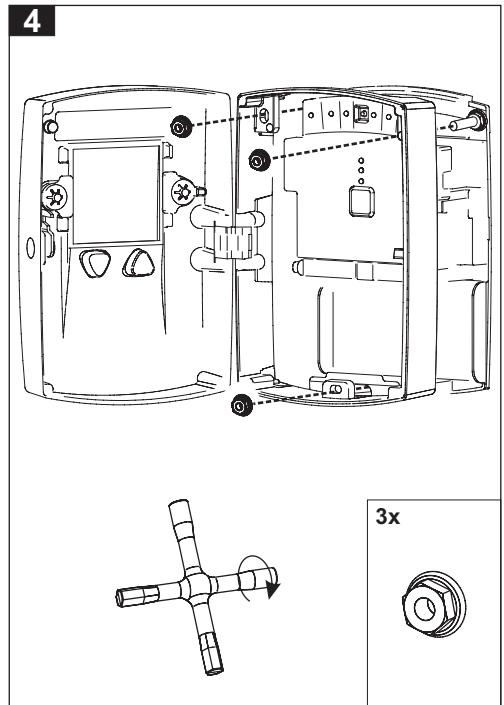
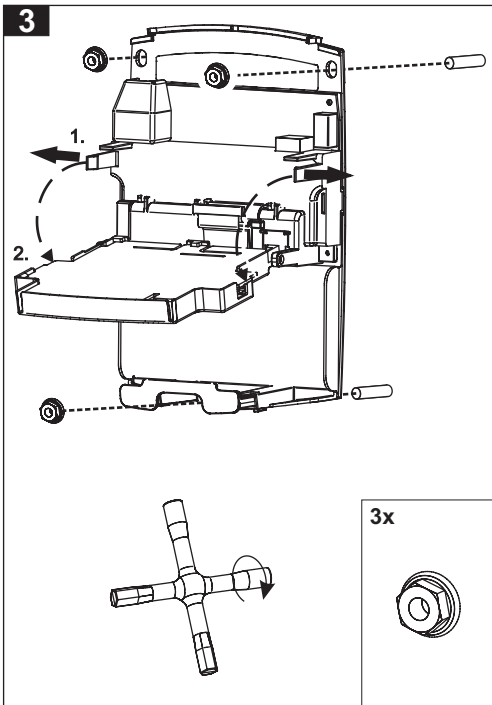
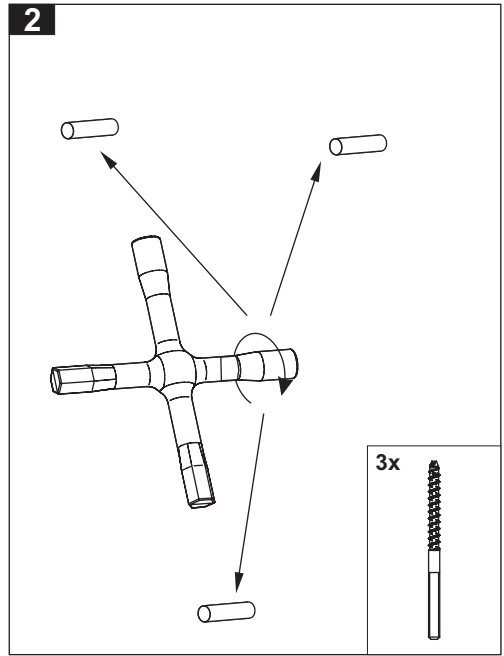
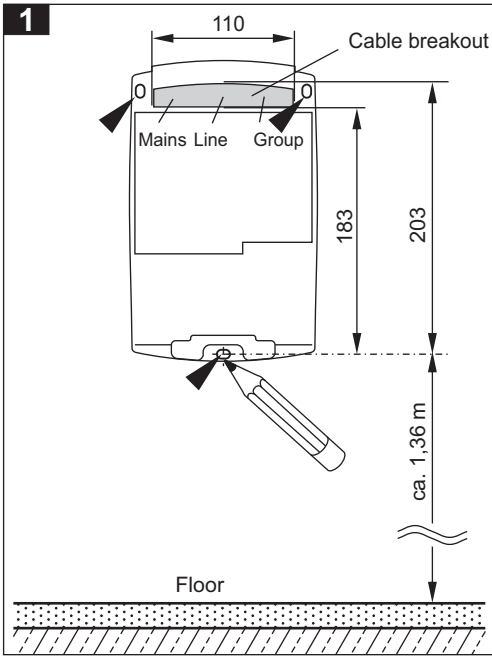
## Pictogram explanation

	SHEV alarm
	Malfunction
	Control panel O.K.
	D+H window drive
	Mains existing
	Vent button function "OPEN"
	Smoke-/ vent button function "CLOSE"
	Ground short

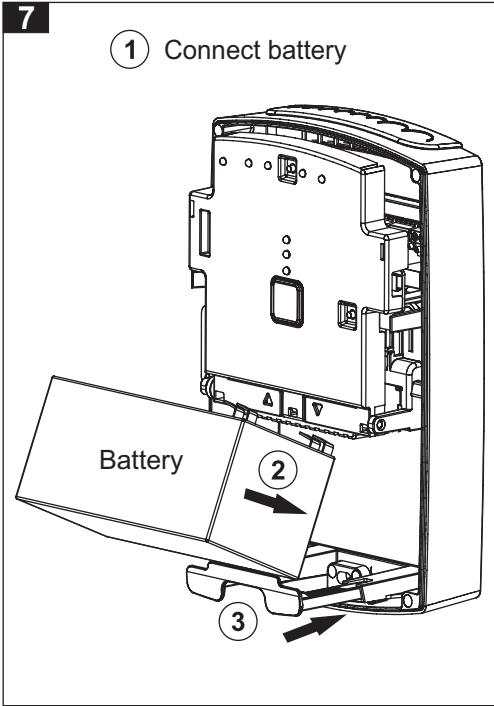
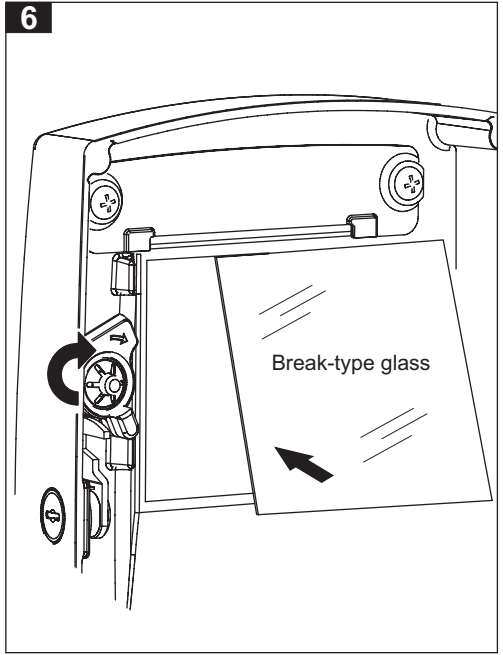
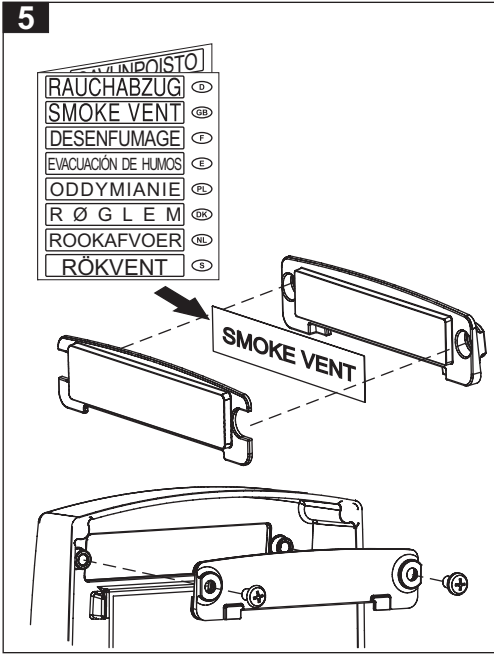
## Fire recognition element

The control panel has an internal measuring device for monitoring the internal temperature of the control device. If the internal temperature is exceeding 72°C (caused by radiant heat of a fire in immediate vicinity of the mounting place), the entire smoke and heat vent system will be emergency opened under alarm conditions.

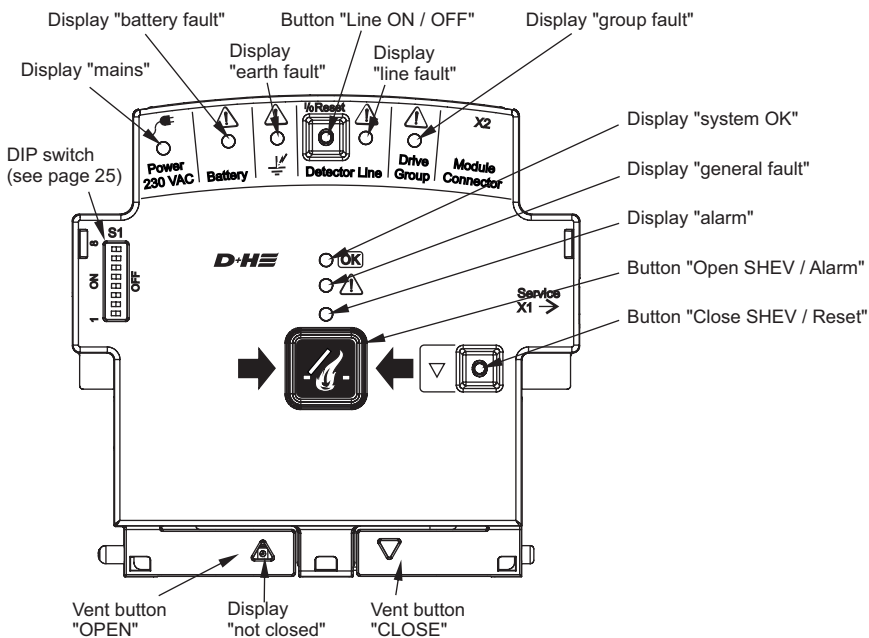
# Mounting of SHEV control panel



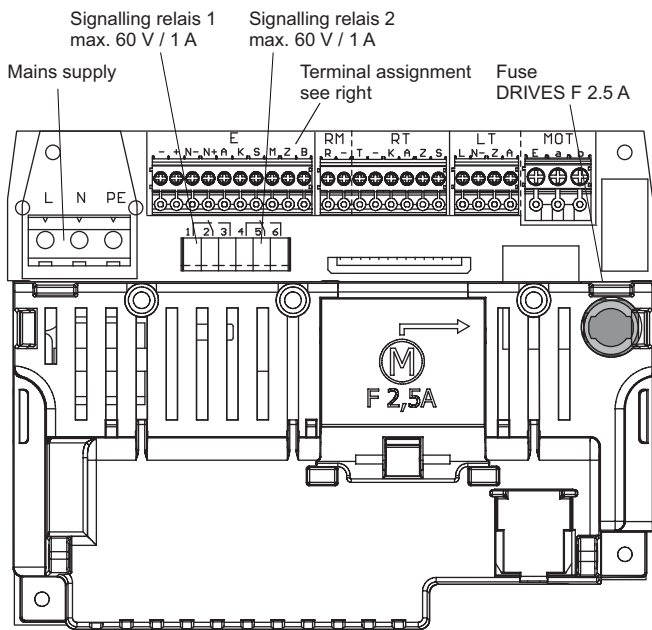
# Mounting of SHEV control panel



# Overview control elements

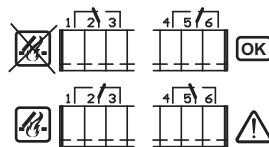


# View motherboard



## Signalling relays

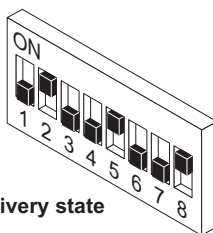
Factory-settings



- : Emergency-supplied potential -
- + : Emergency-supplied potential +
- N- : Not emergency-supplied potential -
- N+ : Not emergency-supplied potential +
- A : General alarm
- K : Control
- S : General fault
- M : Magnetic clamp control (max. 200 mA)
- Z : Input, central function, closing of group
- B : FAS input



## DIP switch settings



Delivery state

<b>1 = ON</b>	Drives <b>CLOSE</b> up to final position <b>by single pressing</b> on vent button. With this setting, the control panel also complies with ISO 21927-9. The drive line is monitored for short circuit and interruption.
<b>1 = OFF</b>	Drives are <b>closing only so long</b> as the vent button or the button "close SHEV" in the smoke vent button is <b>pressed</b> .
<b>2 = ON</b>	Drives <b>OPEN</b> up to final position <b>by single pressing</b> on vent button.
<b>2 = OFF</b>	Drives are <b>opening only so long</b> as the vent button is <b>pressed</b> .
<b>3 = ON</b>	In case of a <b>line fault</b> (e.g. at an interrupted detector line or short circuit) the control panel will be switched on alarm, that means <b>the smoke vent opens</b> .
<b>4 = ON</b>	In case of a <b>group fault</b> (e.g. in case of an interrupted monitoring line) the control panel will be switched on alarm, that means <b>the smoke vent opens</b> . DIP switch must be on ON in conjunction with a ground in thermal maximal detector (e.g. THE4).
<b>5 = ON</b>	<b>OPEN-running time limitation in ventilation operation (Only if DIP switch 2 = ON)</b> If the vent button is actuated in direction OPEN, the drives open for 30 s (factory-set). This running time can be edited by PDA servicetool.
<b>6 = ON</b>	<b>Ventilation time limitation (Only if DIP switch 1 = ON)</b> The drives will automatically close again after the time set (factory-set 10 min). This time can be edited by the PDA servicetool.
<b>7 = ON</b>	<b>Power failure "CLOSE" (Only if DIP switch 1 = ON)</b> In case of power failure the drives will close.
<b>8 = ON</b>	Integrated <b>ventilation buttons</b> are <b>activated</b> .
<b>8 = OFF</b>	Integrated <b>ventilation buttons</b> are <b>deactivated</b> .

### The following functions are (de-) activatable with the SCS:

- OPEN running time retriggering (factory-set: deactivated)
- Group CLOSE in case of alarm (factory-set: deactivated)
- Two smoke detectors dependency (factory-set: deactivated)
- Smoke detector alarm remote reset (factory-set: activated)
- Lamp test
- Alarm re-clocking (factory-set: activated)

Hint: In case of alarm the smoke vent is triggered with an OPEN pulse every 2 minutes for a duration of 30 minutes according to VdS 2581. For this, the drive must be protected against blockage according to VdS 2580 par. 4.7. . All D+H drives meet this precondition.

- The signalling relay features the following signals:  
pre-alarm, terminated alarm, delayed alarm, general fault, battery fault, line fault, group fault, power failure, earth fault, passing on of "central CLOSE", "Reset Alarm" as pulse, group closed longer = x sec. (factory-settings: signalling relays 1="alarm" signalling relays 2 = "general fault")

## Cables for D+H smoke and heat vent systems

When selecting and installing the cables, the regional electrical installation regulations concerning wiring systems and the necessary safety equipment, or guidelines on integrity maintenance of electric lines are observed (e.g. MLAR).

### Notice:

No type designation is given for these cables, because of a large variety on the market. Please consult your D+H partner.

### Group cable (control panel - drive)

At least three wire design:

- 2 wires for the supply of the drive
- 1 wire for line monitoring, on which also the SHEV high speed (HS) signal is transmitted to the drive. If group DIP switch 4 is ON, the group will in case of a fault automatically triggered and opens.

### Line cable (control panel - detector)

The cables are monitored for short circuit and for interruption. If line DIP switch 3 is ON, the group will in case of a fault automatically triggered and opens.

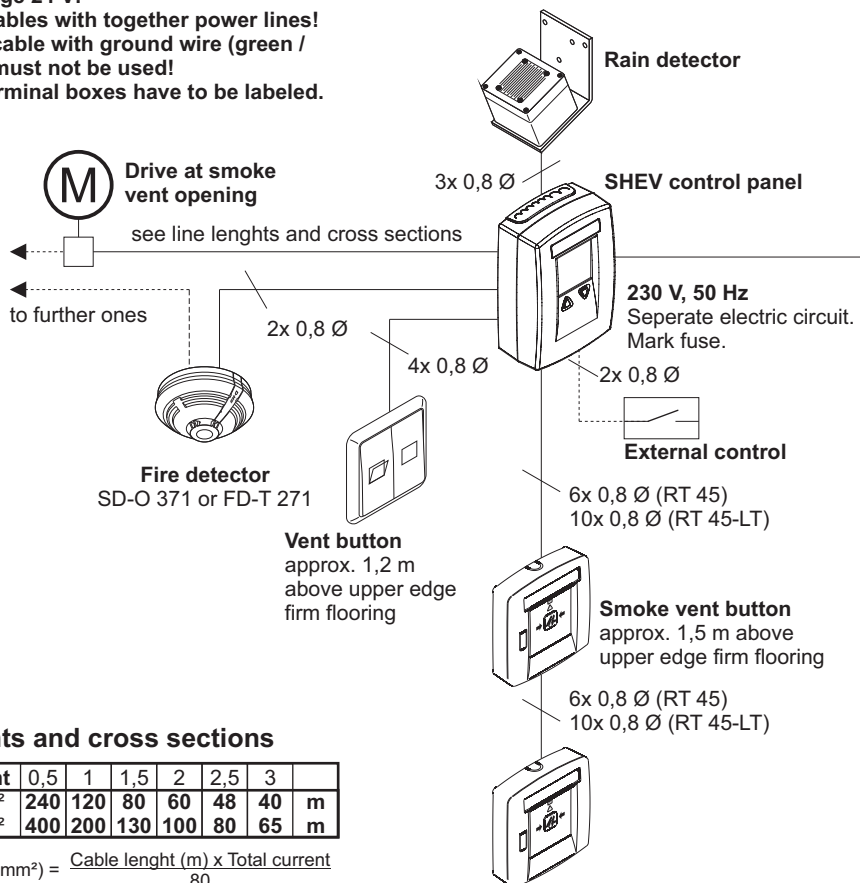
## Wiring plan (Paragon)

System voltage 24 V!

Do not run cables with together power lines!

In case of a cable with ground wire (green / yellow) this must not be used!

Cable and terminal boxes have to be labeled.

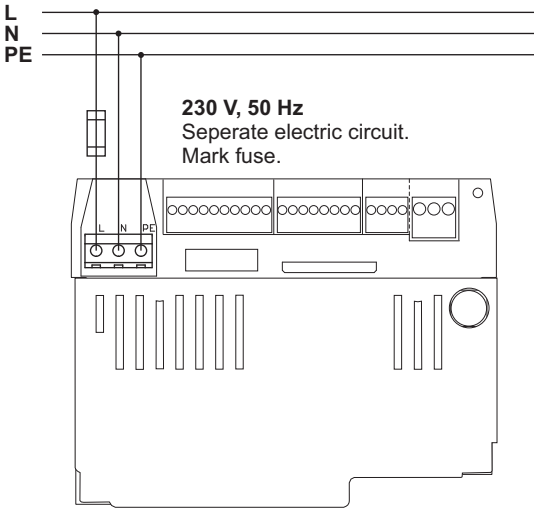


### Line lengths and cross sections

Total current	0,5	1	1,5	2	2,5	3	
3 x 1,5 mm <sup>2</sup>	240	120	80	60	48	40	m
3 x 2,5 mm <sup>2</sup>	400	200	130	100	80	65	m

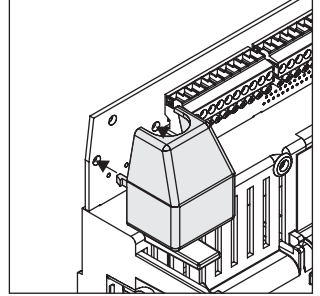
$$\text{Cross section (mm}^2\text{)} = \frac{\text{Cable length (m)} \times \text{Total current}}{80}$$

# 230 V supply

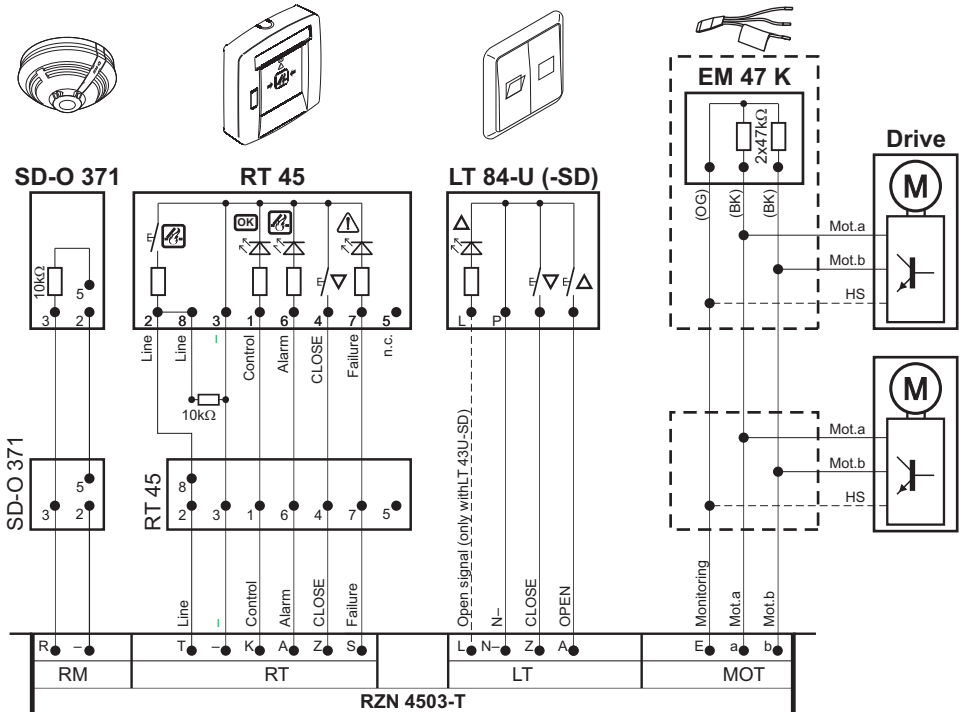


## Protection cap:

Place enclosed protection cap over supply terminal after mains cable has been connected.

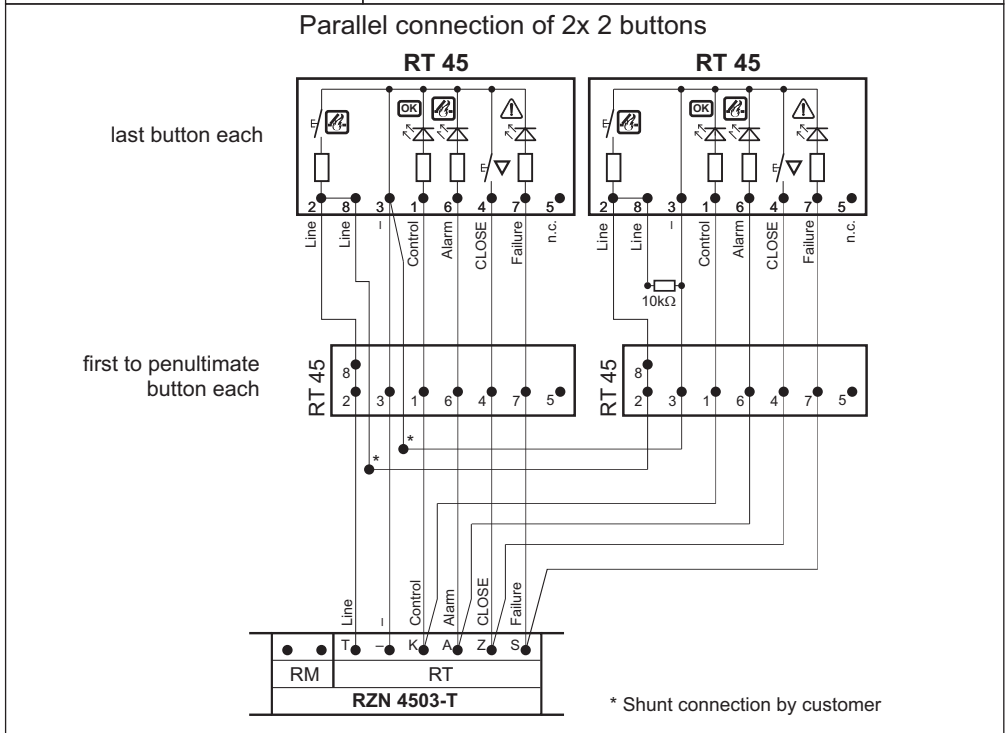
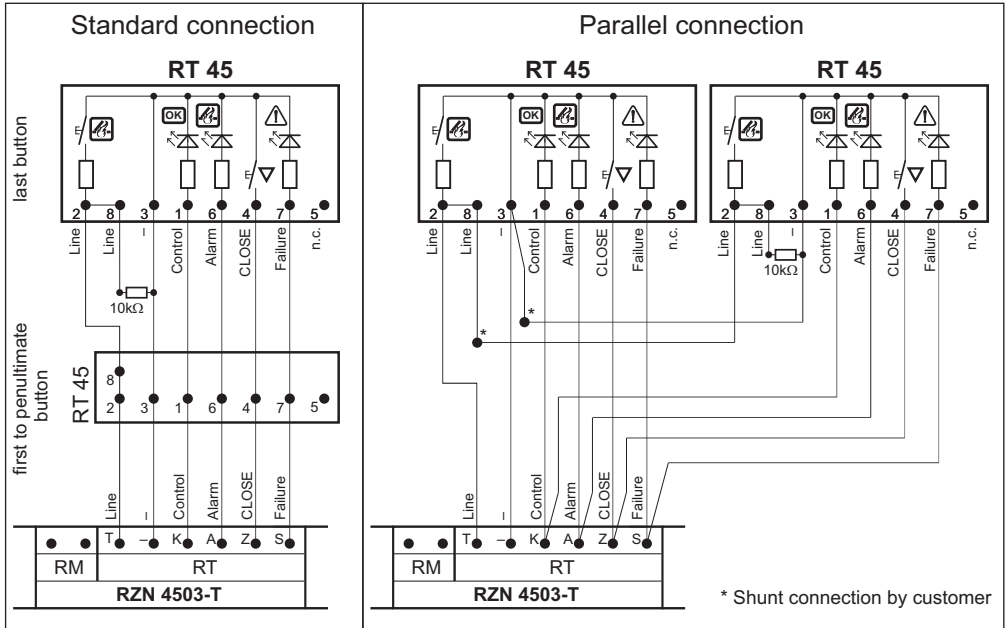


# Connection overview



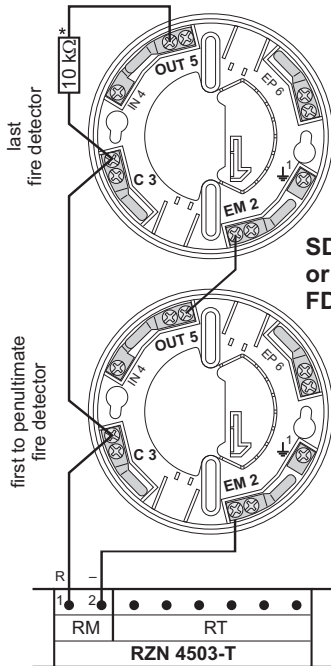
# Connection of smoke vent buttons

Max. 8 buttons per line connectable.



## Connection of fire detector

Max. 14 fire detectors connectable.  
Only D+H approved detectors must be used.

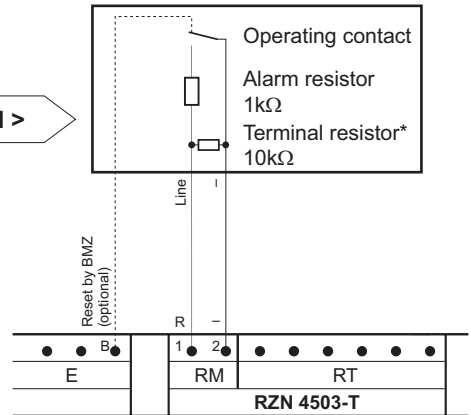


SD-O 371  
or  
FD-T 271

RZN 4503-T

## Connection of fire alarm system

BMZ / BMA



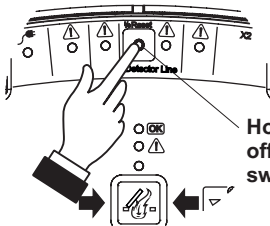
### \* Terminal resistors for line monitoring

It is pinched in control panel for transport.  
Take it off there and connect according to plan.  
Terminal resistor must remain at terminal RM 1,2,  
when no fire detector or external control exists!

## Line shutdown

If the LED line fault flashes, the line is switched off, e.g. for service reasons. You cannot activate the control panel in this status.  
In case of an actual line error the LED line fault is permanently on.

Triggering an alarm is not possible during the shutdown.



Hold 3 s to switch off line / tip on to switch on

Display "line fault"	Display "system OK"	Display "general fault"	Description
●	—	●	Line fault
●	—	○	Line deactivated
⊗	●	○	Servicetimer is up
● = Display ON	○ = Display flashing	⊗ = Display OFF	

## Drives

### Group output:

Seven minutes after the motor group has been operated in OPEN or CLOSE direction, the potential between Mot.a and Mot.b is switched to zero potential. While an alert, a possible group disturbance will not notified. Only after reset the alarm, a fault message will be indicated.

### High-speed function (HS):

All D+H drives with SHEV high-speed function are supported. In daily ventilation operation, a considerable noise reduction is achieved through the reduced drive speed. In case of SHEV the drives run with a very high speed to reach the OPEN position defined within 60 seconds at the most.

### SHEV retriggering:

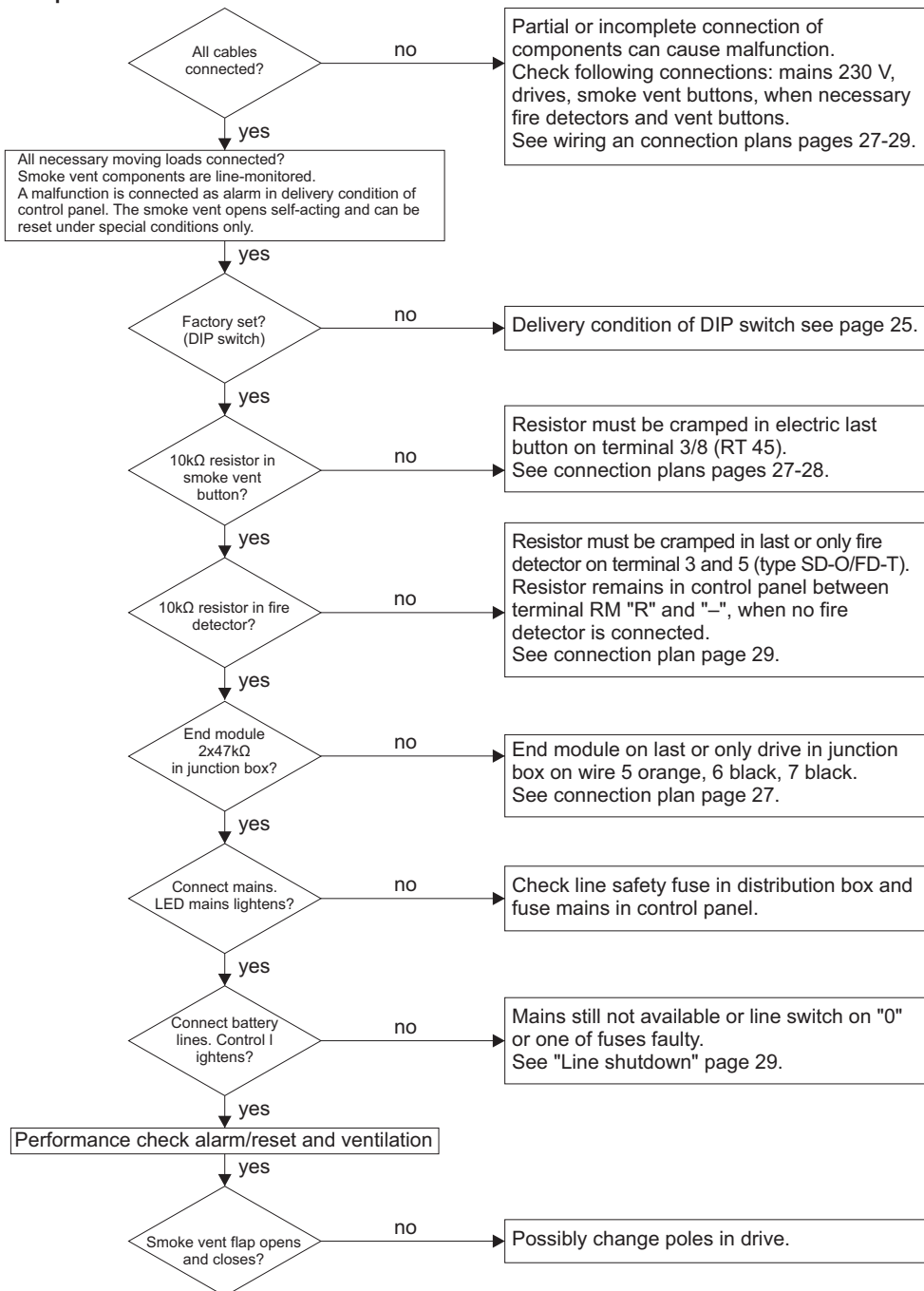
The smoke vents will be triggered with an OPEN-impulse every 2 minutes for a duration of 30 minutes according to VdS 2581. For this, the drives must be blockage safe. All D+H drives meet this precondition. Otherwise the DIP switches has to be switched on OFF.

### Mounting of the drives:

Please take mounting informations from the relevant instruction for use of the respective drive, because of varied possibilities for choosing drives.

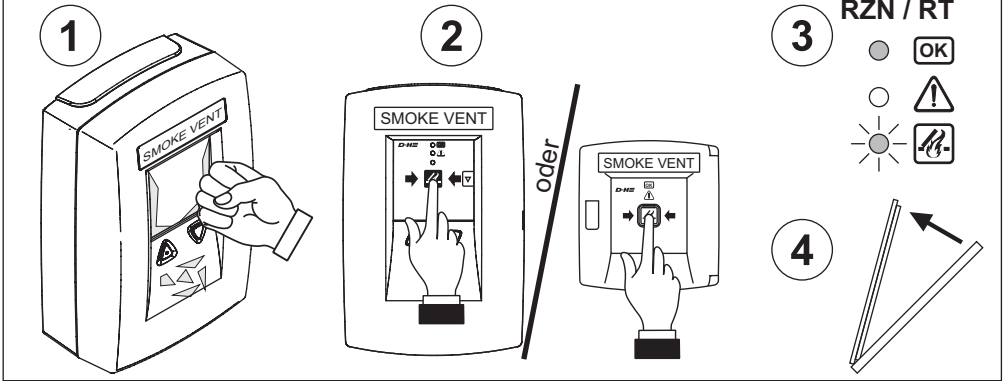
# Informations for starting

Carry out following sight and performance checks for switching-on the smoke and heat vent control panel.

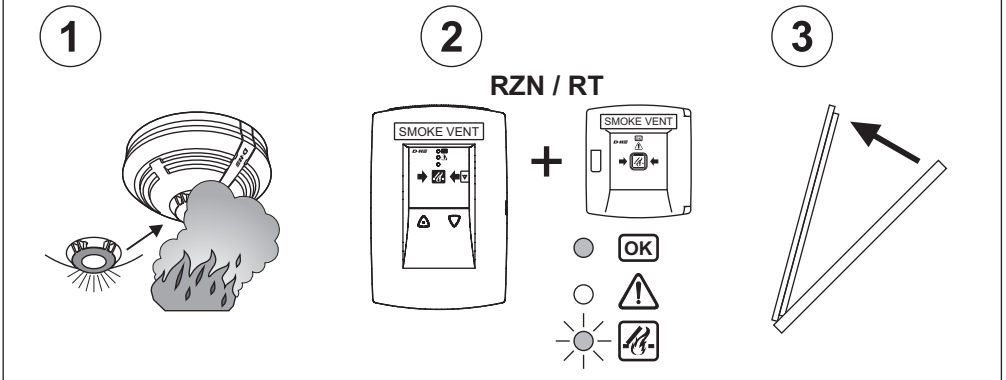


# Operation - Release in case of alarm

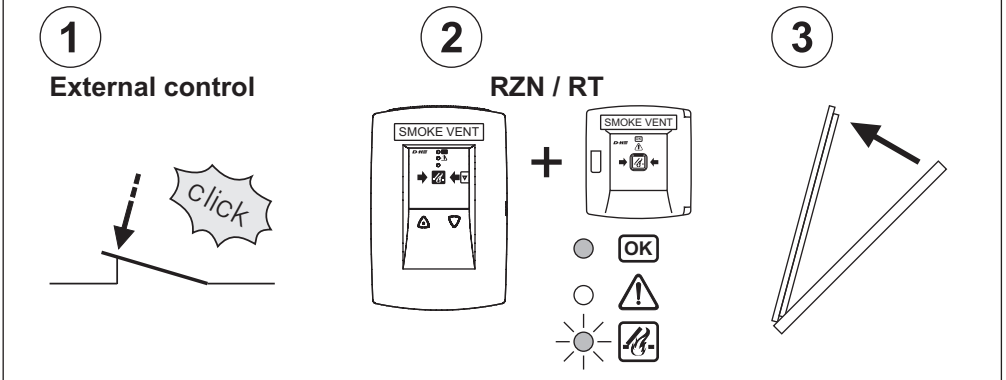
## Manual opening by smoke vent button:



## Automatic opening by fire detector:



## Automatic opening by external control (e.g. fire alarm system):

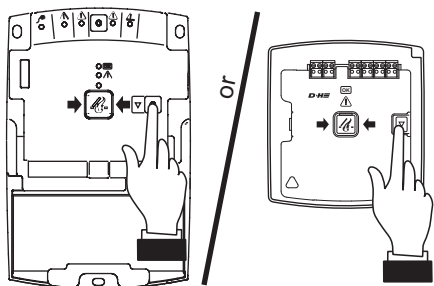


## Operation - Closing after alarm

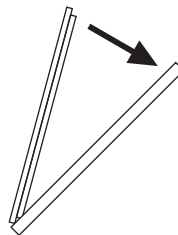
Open the housings (control panel and buttons) using the enclosed keys.

### With manual release:

1

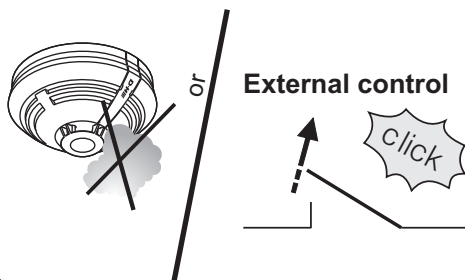


2



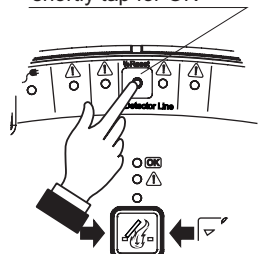
### In case of automatic release by fire detector or external control:

1

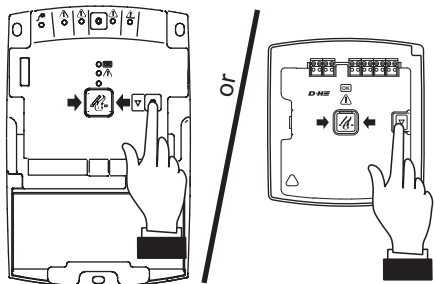


2

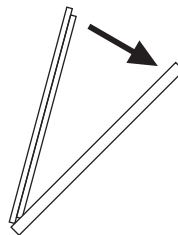
Reset =  
hold approx. 3 s for OFF /  
shortly tap for ON



3



4

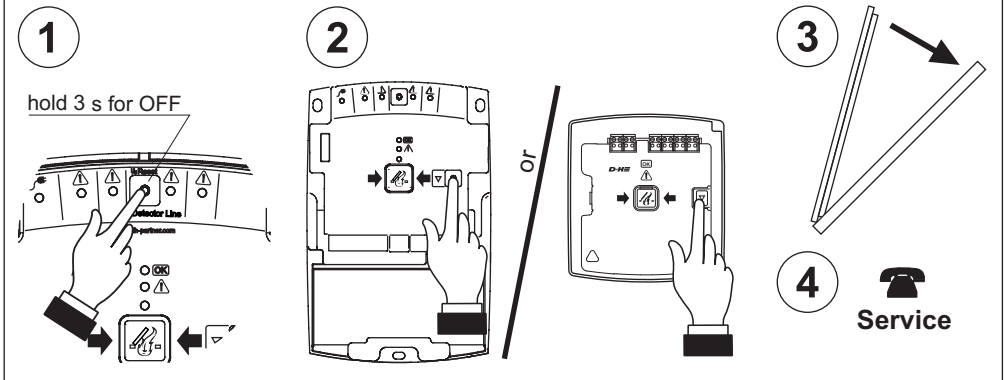


The ventilation function is only 3 minutes after pressing the "Alarm reset button" available again!

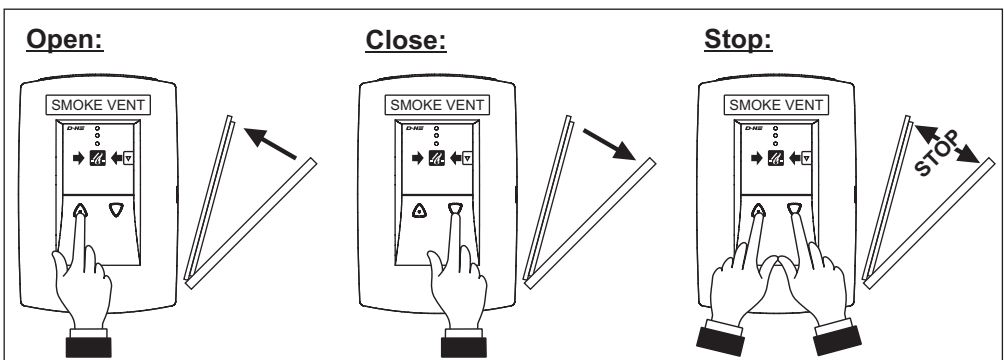


## Operation - Closing after alarm

### Emergency closing in case of non-resettable alarm:



## Operation - Day-to-day ventilation



## Operation - Weather automatic

**Only if wind detector or rain detector available.**

Upon triggering of the corresponding sensor, the group of the control panel is closed.

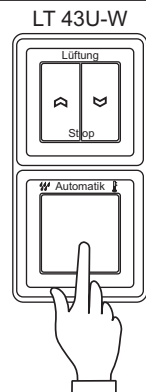
If alarm is released by a smoke and heat vent system, the system will open also in case of wind and rain.

**Do not ventilate via smoke vent button, because otherwise there would be a danger of damage by wind or water.**

The weather automatic can be switched-off via an **optional automatic switch**, if gap ventilation is required in case of bad weather.

**Gap ventilation is not possible in case of bad weather, if no automatic switch available.**

If the weather automatic is switched on, the system will automatically close in case of wind or rain. The system will not automatically open again, if wind or rain has stopped. Opening of the system for ventilation via vent button.



## Inspection

**Regular visual inspection between maintenance by the operator or a trained person.  
Immediately correct any defects.**

### Indicators:

- **Green LEDs** in the buttons must **illuminate**.
- **Yellow LEDs** in the buttons and the control panel are **not allowed to illuminate or flash** (fault).
- If the green LEDs do not illuminate or if the yellow LEDs illuminate or flash, contact After Sales service.

### Examination:

- Check all appliances and cable connections for outer damage and dirt accumulation.
- Fire detectors, smoke vent buttons, smoke vents and so on must not be impaired in their function by goods in storage or structural changings.

## Maintenance

**Once a year by a specialist company, who is authorized by the appliance manufacturer.**

Renew test badge, keep log book.

The respective current D+H maintenance instruction is decisive.

D+H authorized expert companies have been specially trained by D+H for carrying out expertly this maintenance, and they get automatically the latest maintenance instructions.

Following tests must be carried out in the course of maintenance:

- Outside examination / inspection of system components
- Checking of all relevant power supply units
- Functional testing of connected system components
- Record of competent carrying-out of maintenance, and designation according to directions



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