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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

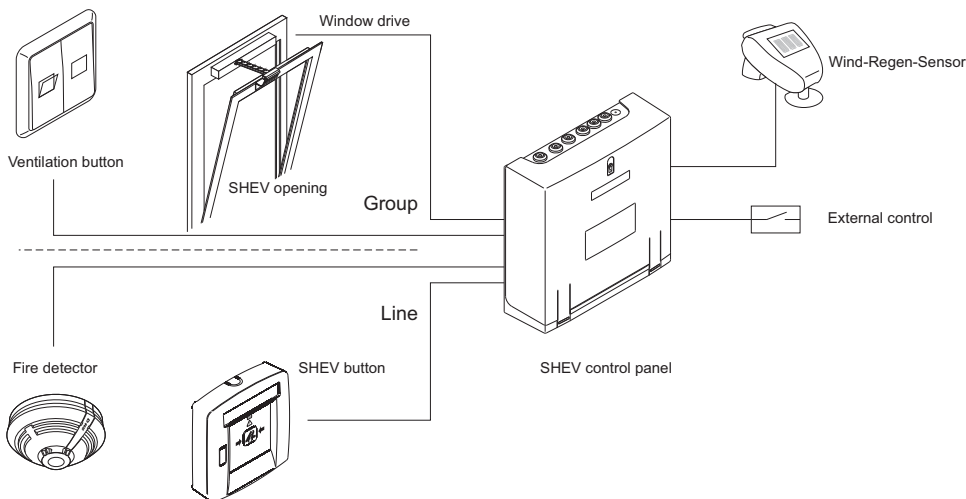
With the network of our own subsidiaries and exclusive partners, we are represented nearly all over the world.

Are you looking for your local D+H partner?

Simply visit our website:

www.dh-partner.com

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.

Intended use

- SHEV control panel in particular for staircases
- Microprocessor based control panel
- 1 line, 1 group
- 2,5A or 5A actuating current
- Comfort functions for daily ventilation
- Only for inside mounting

Safety notes

Operating voltage 230 VAC!

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

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 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.

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.

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, 2011/65/EU

Technical file at:

D+H MechatronicAG, D-22949 Ammersbek

Dirk Dingfelder
Member of the Board
05.05.2021

Maik Schmees
Authorized signatory, Technical Director

Technical data

Type	CPS-B1-2.5-0101	CPS-B1-5-0101
Power supply	195 ... 253 V AC, 50 Hz	195 ... 253 V AC, 50 Hz
Rated power	140 VA	145 VA
Stand-by operating	< 2 W	< 2 W
Output voltage	24 V DC	
Ripple	<0,5 Vpp; < 1%, load-dependent	
Monitoring:		
Output current	250 mA	
Mode of operation	Continuous duty	
Alarm / Ventilation:		
Output current	2,5 A	5 A
Mode of operation	Short-time duty, 30% ED	Short-time duty, 30% ED
Number of lines / groups*	1/1	
Fire detectors per line	max. 8 pcs.	
SHEV buttons per line	max. 8 pcs.	
Temperature range	-5 ... +40°C	
Ingress protection	IP 30	
Protection class	II, with functional ground	
Housing:		
Material	Plastic	
Colour	white	
Dimensions WxHxD	310 x 310 x 104 mm	
* D+H Highspeed (HS) drives will be supported.		

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.

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

Notes on drives

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:

(When DIP switch S1.5 = ON)

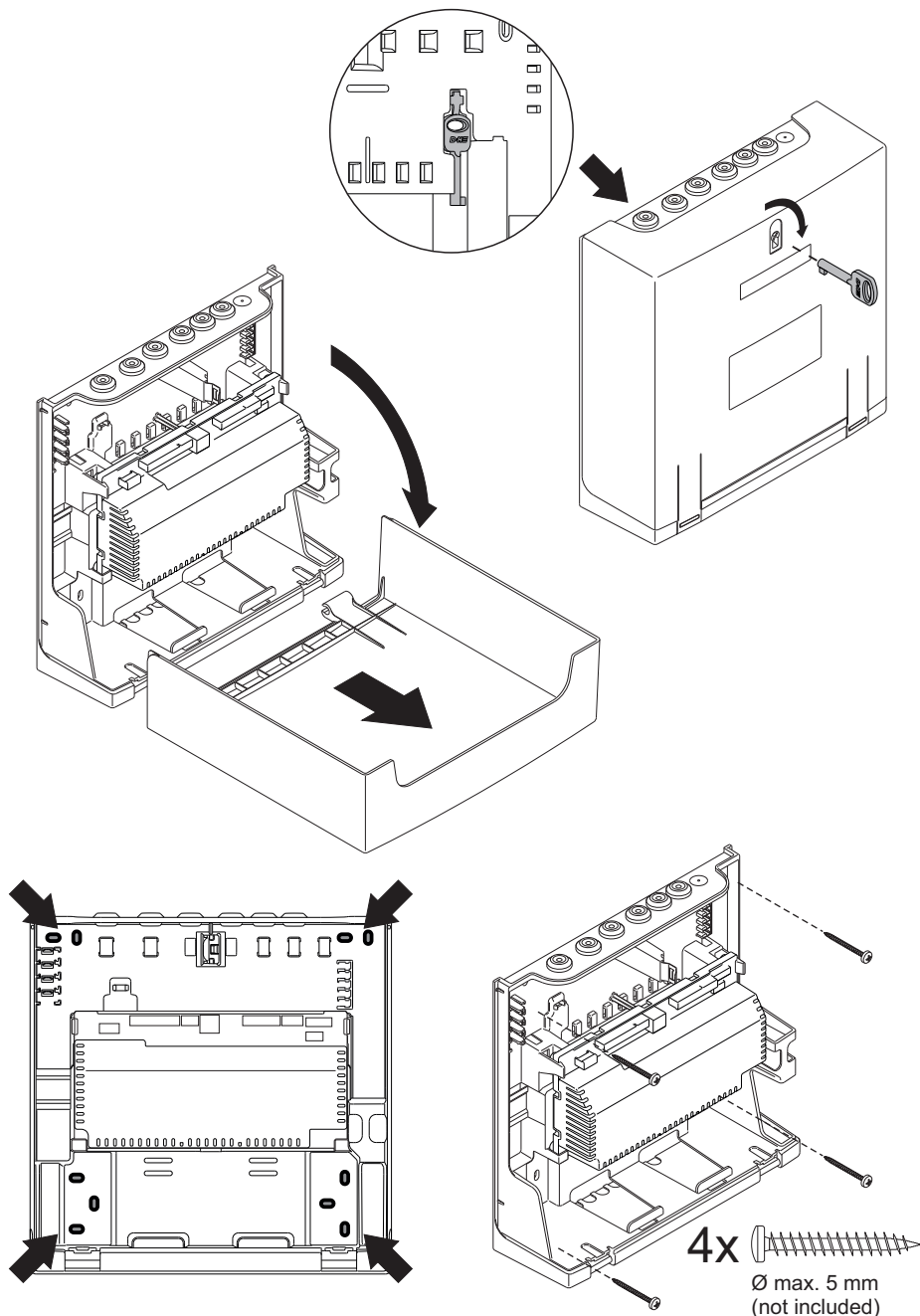
The smoke vents will be triggered with an OPEN-impulse every 2 minutes for a duration of 30 minutes. For this, the drives must be blockage safe. All D+H drives meet this precondition.

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.

Mounting of SHEV control panel

Mount control panel sheltered and easily accessible for maintenance in proximity of drive.



Overview

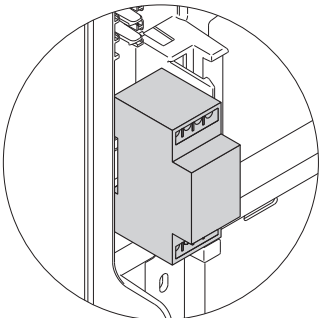
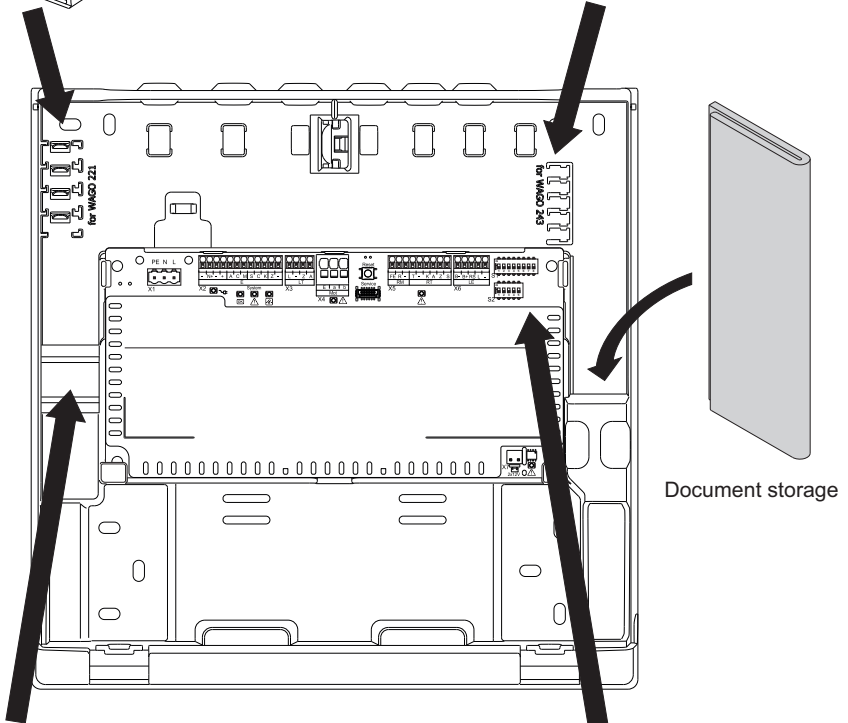
Jumper clamp holder
WAGO clamp 221
(not included)

4x



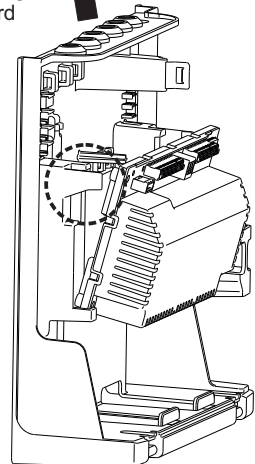
Jumper clamp holder
WAGO clamp 243
(not included)

5x

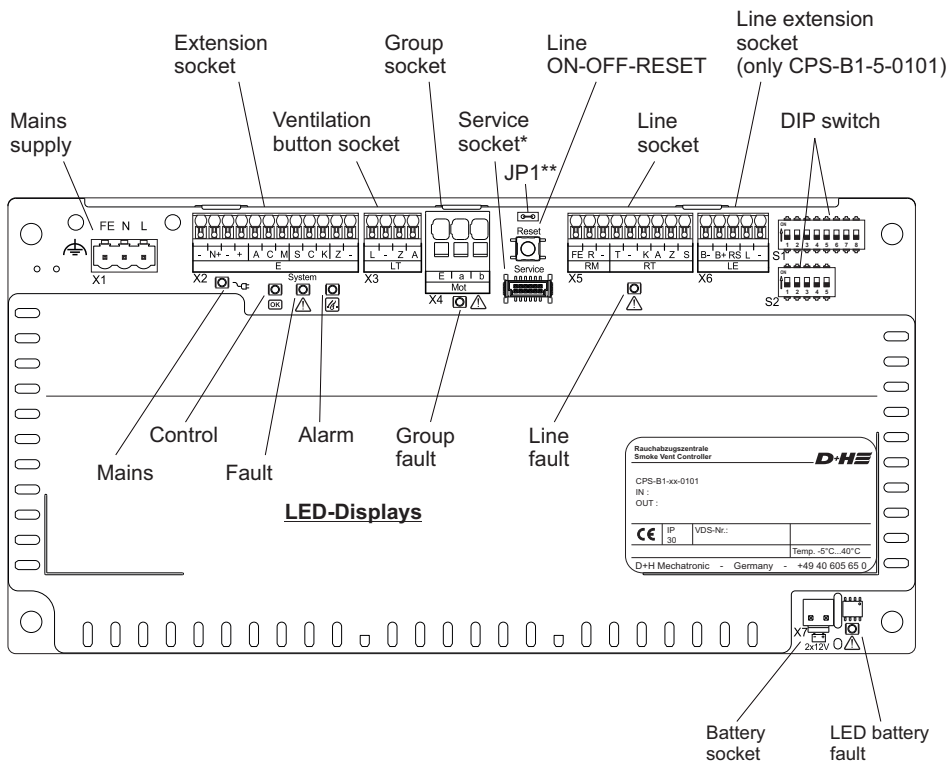


35 mm top hat rail
for extension modules
up to 29 mm width

Screwless mounting
of the motherboard



View motherboard



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.

* Service socket

For programming various parameters (Ventilation time, stroke limitation, invert FAS triggering) via the SCS software and for resetting the service timer.

** JP1

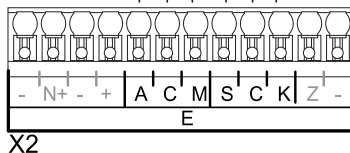
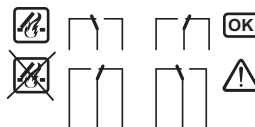
Jumper for voltage interruption of the group.
When the jumper is removed, the group is switched off, e.g. to allow maintenance work to be carried out safely.

Pictogram explanation

	SHEV alarm
	Fault
	Control panel O.K.
	D+H window drive
	Mains existing

Signalling relays

max. 30 V / 0,5 A



Terminal assignment

No.	Name	Description
Mains supply X1		
X1.1	FE	Functional ground
X1.2	N	Neutral conductor
X1.3	L	Phase
Extension socket X2		
X2.1	–	Reference potential
X2.2	N+	Output not emergency-supplied potential + (max. 250 mA)
X2.3	–	Reference potential
X2.4	+	Output emergency-supplied potential *
X2.5	A	Isolated output alarm - normally open contact
X2.6	C	Isolated output - COM
X2.7	M	Isolated output no alarm / magnet - normally closed contact
X2.8	S	Isolated output fault - normally closed contact
X2.9	C	Isolated output - COM
X2.10	K	Isolated output Control - normally open contact
X2.11	Z	Input, central function, closing of group
X2.12	–	Reference potential
Ventilation button socket X3		
X3.1	L	Not closed signal output
X3.2	–	Reference potential
X3.3	Z	Ventilation CLOSE input
X3.4	A	Ventilation OPEN input
Group socket X4		
X4.1	E	Monitoring
X4.2	a	Drive output Mot. a
X4.3	b	Drive output Mot. b
Line socket X5		
X5.1	FE	Shield connection for fire detector cable
X5.2	R	Input fire detector triggering/monitoring
X5.3	–	Reference potential
X5.4	T	Input smoke vent button triggering/monitoring
X5.5	–	Reference potential
X5.6	K	Output smoke vent button control display
X5.7	A	Output smoke vent button alarm display
X5.8	Z	Input smoke vent button reset line / close group
X5.9	S	Output smoke vent button fault display
Line extension socket X6 (only CPS-B1-5-0101)		
X6.1	B–	FAS reference potential input
X6.2	B+	FAS alarm input +24V/+48V
X6.3	RS	Additional reset input with pulse function
X6.4	L	Input/output mutual alarm interlock
X6.5	–	Reference potential
Battery socket X7		
X7.1	AKKU–	Negative lead from battery
X7.2	AKKU+	+24V lead from battery

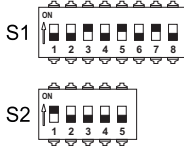
* If additional loads are connected to the emergency-supplied potential of the CPS-B (X2.4, terminal +), their average quiescent current consumption in the event of a power failure over 72 hours must not be higher than the value specified below.

The maximum load capacity of the emergency potential is 250 mA.

Type	2,2 Ah (Battery-Type 2)	3,4 Ah (Battery-Type 8)
CPS-B1-2.5-0101	16 mA	–
CPS-B1-5-0101	–	22 mA

DIP switch settings

Delivery state



DIP switch S1		
S1.1	Line fault = alarm	
	ON	In case of a line fault (e.g. at an interrupted detector line or short circuit) the control panel will be switched on alarm, that means the smoke vent opens.
S1.2	Group fault = alarm	
	ON	In case of a group fault (e.g. in case of an interrupted monitoring line) the control panel will be switched on alarm, that means the smoke vent opens. DIP switch must be on ON in conjunction with a ground in thermal maximal detector (e.g. THE4).
S1.3	Deactivate remote reset detector line	
	ON	Smoke detector alarm can not be reset by single pressing on the button "close SHEV" in the smoke vent button.
	OFF	Smoke detector alarm will be reset by pressing on the button "close SHEV" in the smoke vent button.
S1.4	Closing group in case of alarm	
	ON	In case of power failure the drives will close.
S1.5	SHEV retriggering	
	ON	The smoke vent is triggered for a duration of 30 minutes in intervals of 2 minutes according to VdS 2581.
S1.6	Power failure "CLOSE"	
	ON	In case of power failure the drives will close automatically. Caution: Danger of crushing! The drives close automatically.
S1.7	Extended line monitoring of the group	
	ON	All wires to the drives are monitored in all states.
S1.8	Operation without battery	
	ON	The charging and monitoring of the batteries is deactivated.
DIP switch S2		
S2.1	Storage operation OPEN	
	ON	Drives OPEN up to final position by single pressing on vent button.
	OFF	Drives are opening only so long as the vent button is pressed.
S2.2	Storage operation CLOSE	
	ON	Drives CLOSE up to final position by single pressing on vent button
	OFF	Drives are closing only so long as the vent button or the button "close SHEV" in the smoke vent button is pressed.
S2.3	Ventilation time limitation	
	ON	The drives will automatically close again after the ventilation time set (Factory setting: 10 min., adjustable via SCS software) Caution: Danger of crushing! The drives close automatically.
S2.4	Reset with alarm pending	
	ON	A permanently present alarm on the RM line or the FAS input can be suppressed by a reset. If such an alarm is still present after a reset, the red LED in the smoke vent button flashes to indicate that it is being suppressed.
S2.5	Lamp test	
	ON - OFF	Actuate the DIP switch (ON/ OFF). All LEDs on the motherboard are switched on continuously for 10 seconds (except for the mains OK LED, which is lit as long as the mains voltage is present).

Cables for D+H smoke an 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 8 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 S1.1 is ON, the group will in case of a fault automatically triggered and opens.

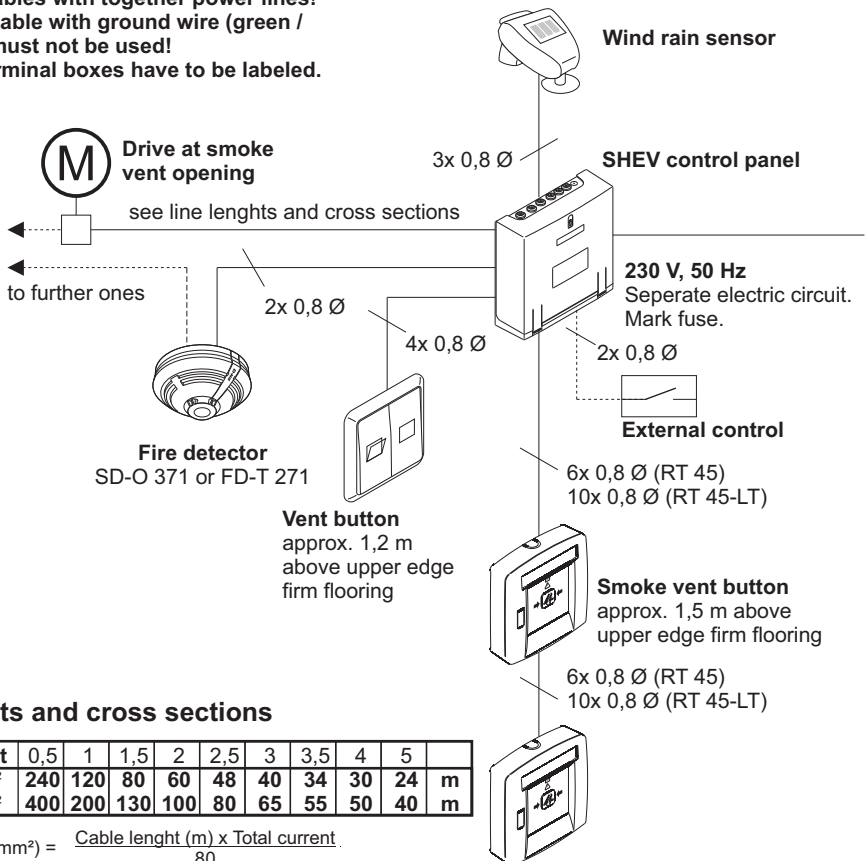
Wiring plan (Paragon)

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	3,5	4	5	
3 x 1,5 mm ²	240	120	80	60	48	40	34	30	24	m
3 x 2,5 mm ²	400	200	130	100	80	65	55	50	40	m

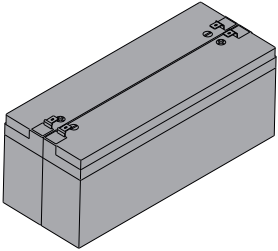
$$\text{Cross section (mm}^2\text{)} = \frac{\text{Cable length (m)} \times \text{Total current}}{80}$$

24 V - Emergency supply

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

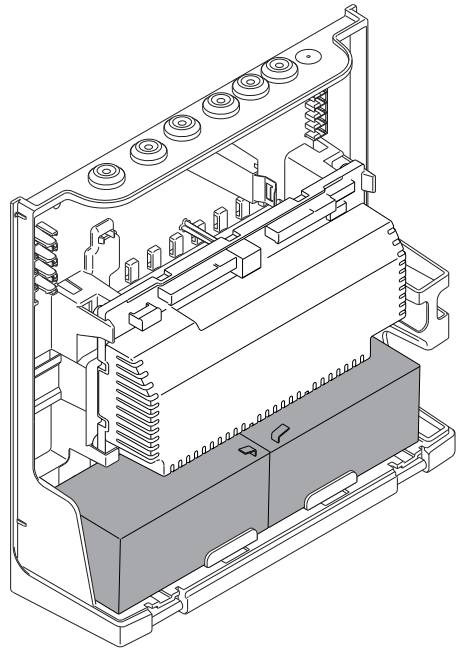
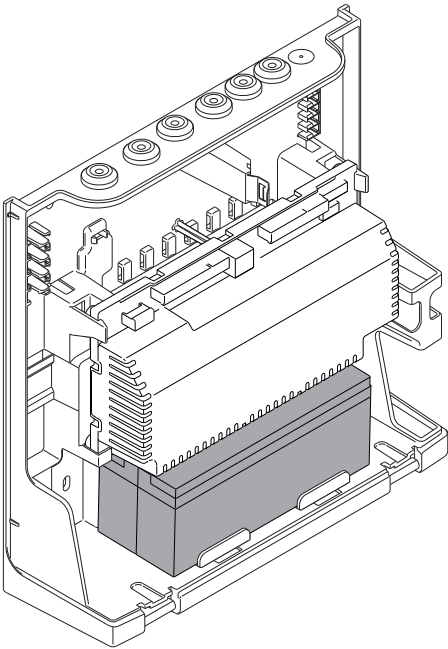
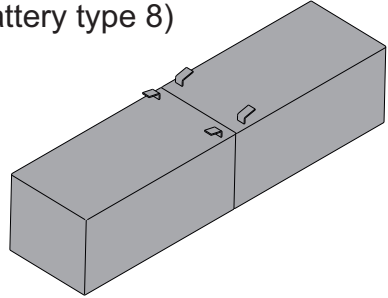
CPS-B1-2.5-0101:

2x 12V / 2,2 Ah \pm 0,3Ah
(Battery type 2)

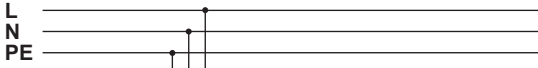


CPS-B1-5-0101:

2x 12V / 3,4 Ah \pm 0,3Ah
(Battery type 8)

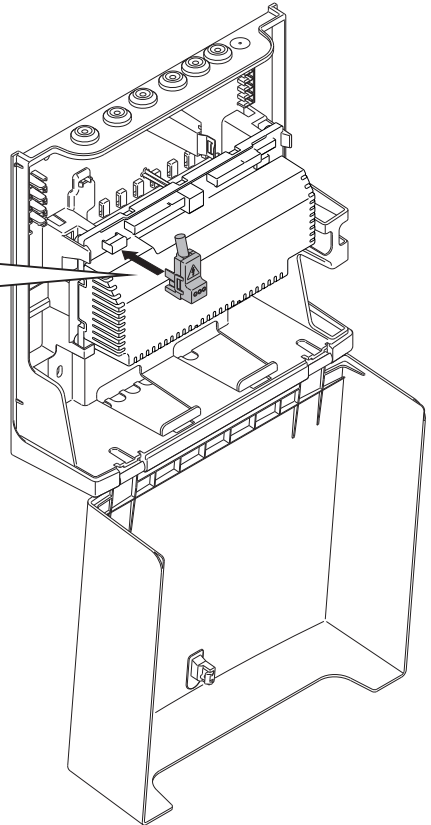
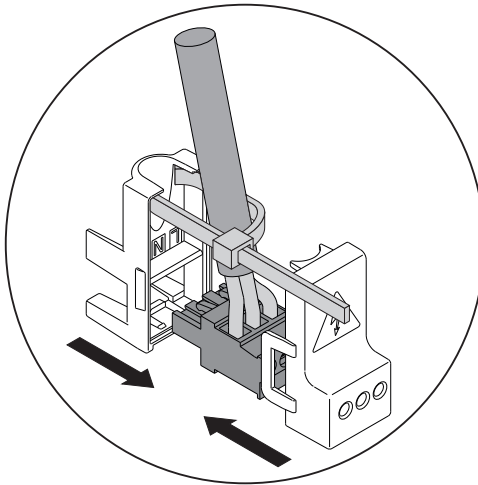
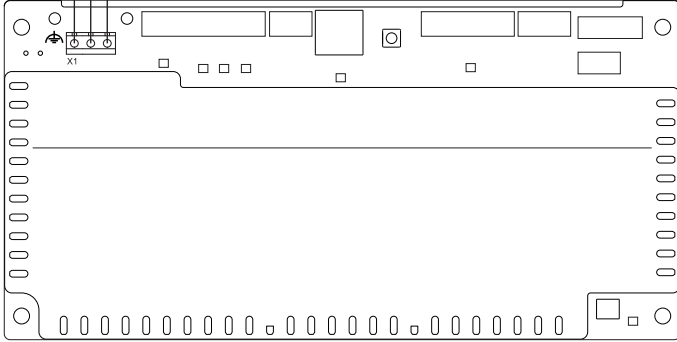


230 V - Power supply

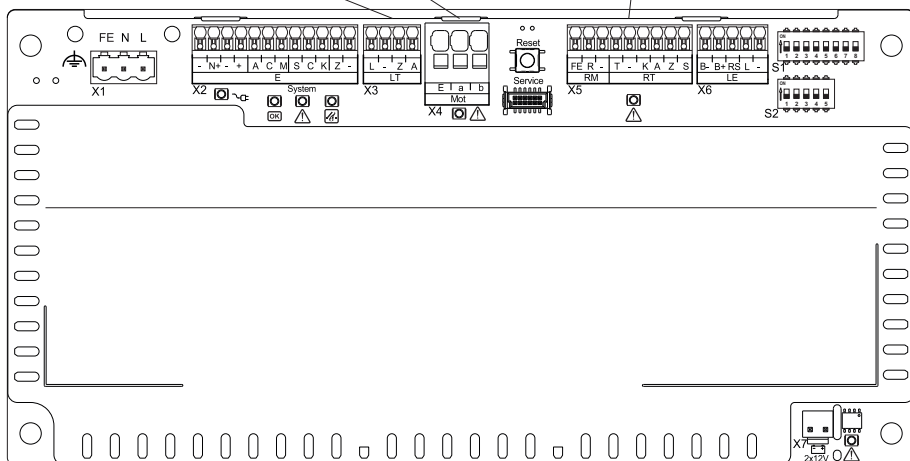
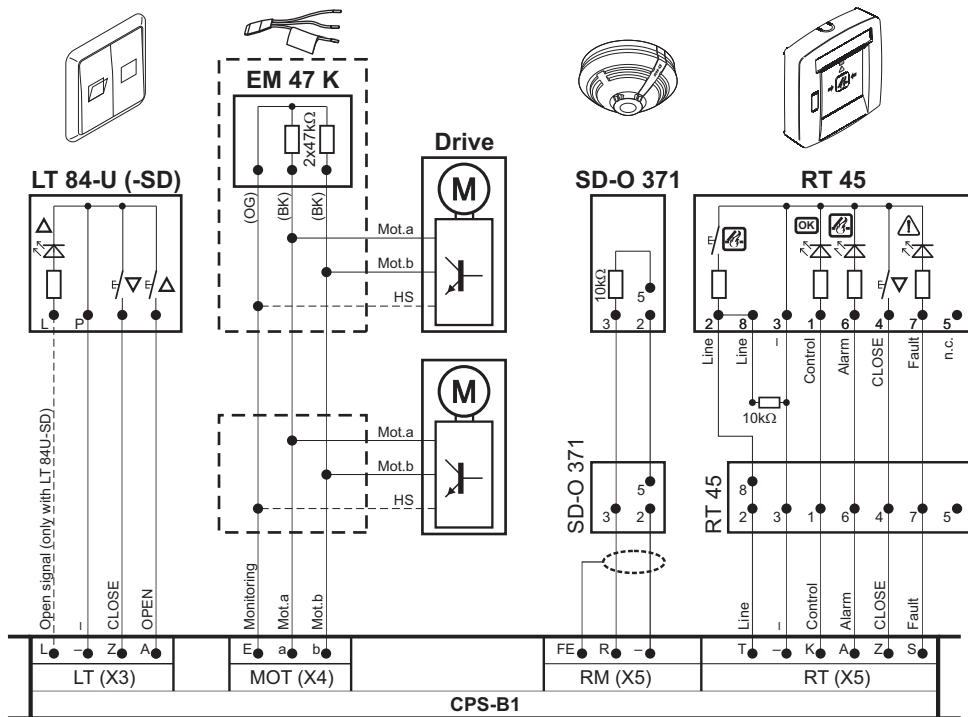


Functional earth (FE)

230 V, 50 Hz
Separate electric circuit.
Mark fuse.



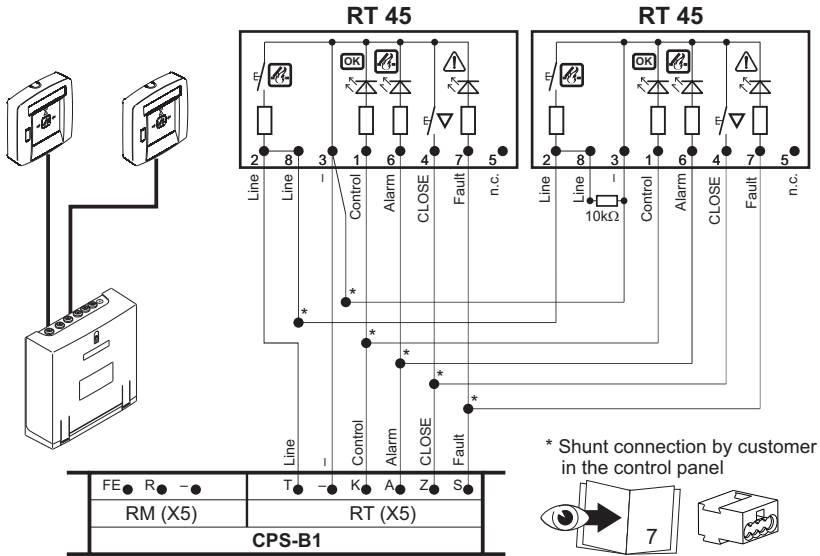
Connection overview



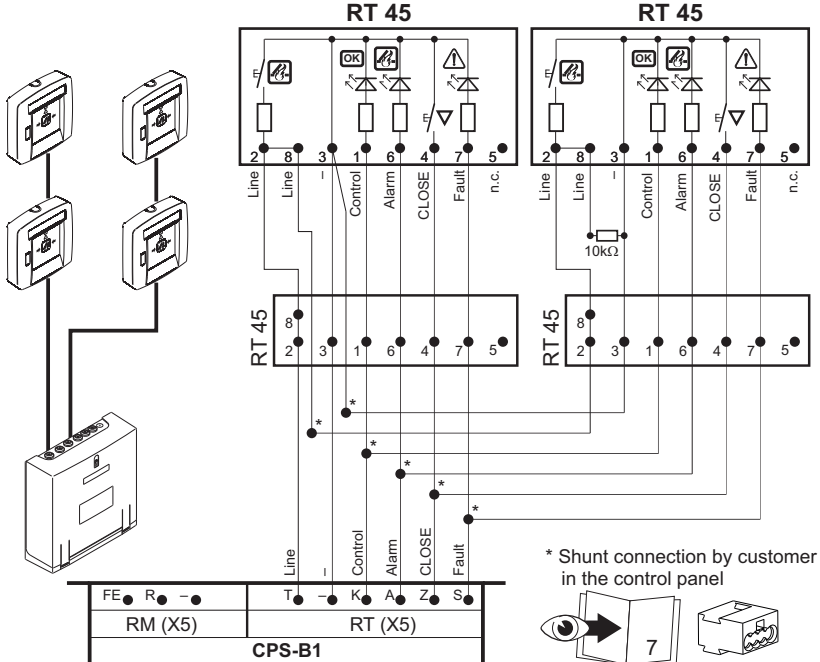
Connection of smoke vent buttons

Max. 8 buttons per line connectable.

Parallel connection

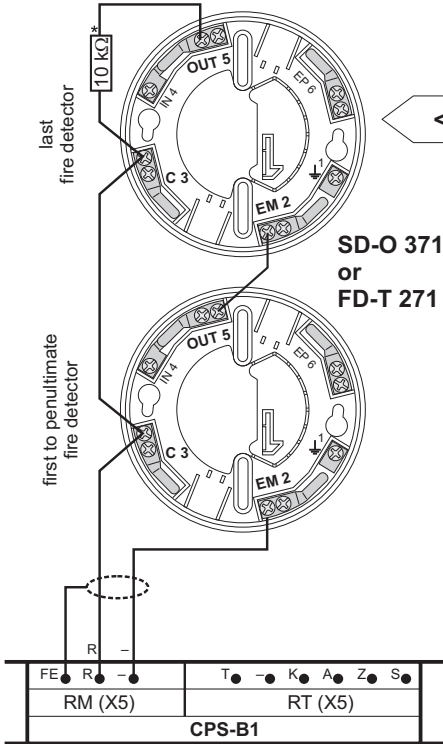


Parallel connection of 2x 2 buttons



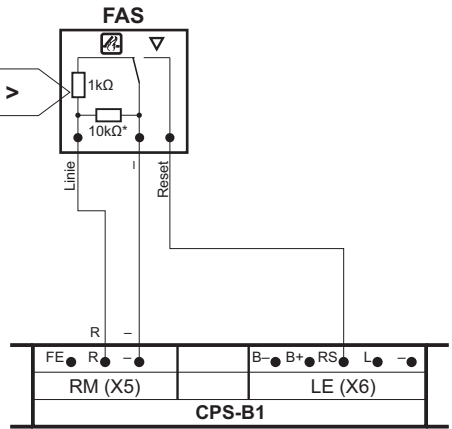
Connection of fire detector

Max. 8 fire detectors connectable.
Only D+H approved detectors must be used.



Connection of fire alarm system

Connection via line socket.
Triggering via switching contact.

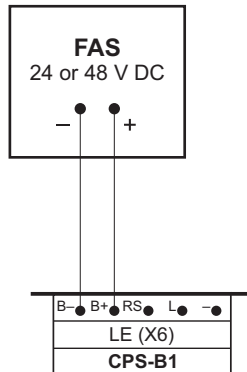


* Terminal resistors for line monitoring

Terminal resistor must be connected at terminal RM 1,2, when no fire detector or external control exists!

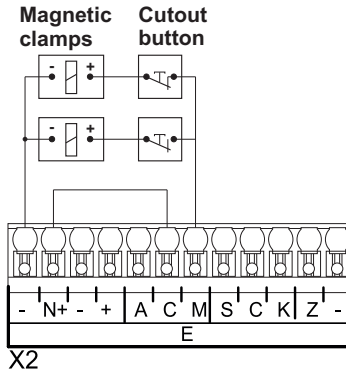
Connection of fire alarm system

Connection via line extension socket.
Triggering via voltage input.



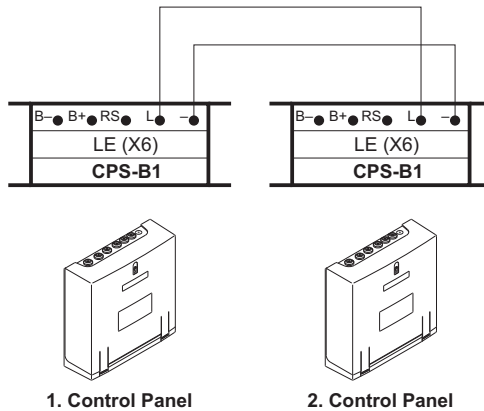
Connection of magnetic clamps

Magnetic clamps 24V (max. 250 mA overall power)
 No output voltage during power failure!



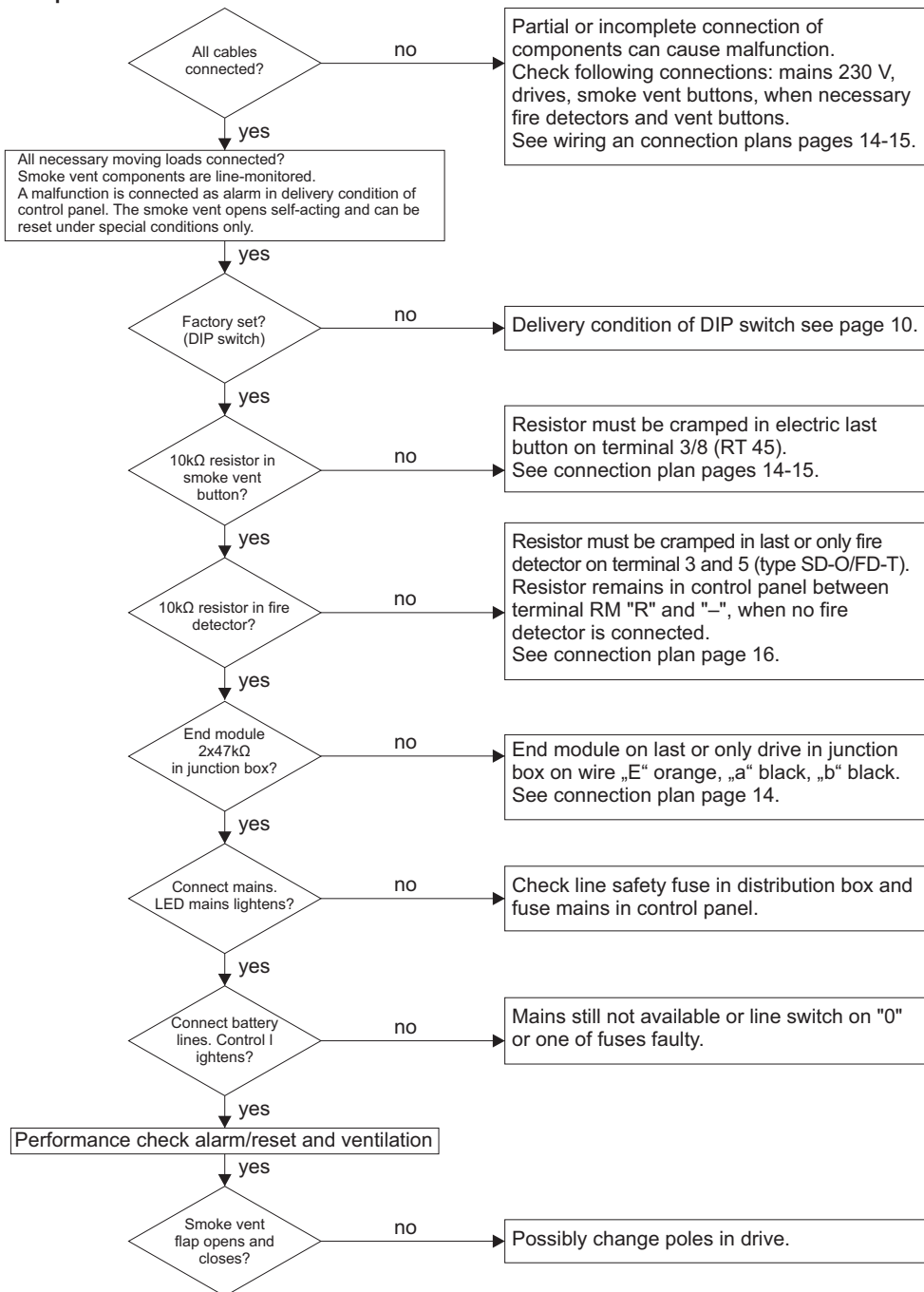
Connection of alarm interlock

Country specific function.



Informations for starting

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



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

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!

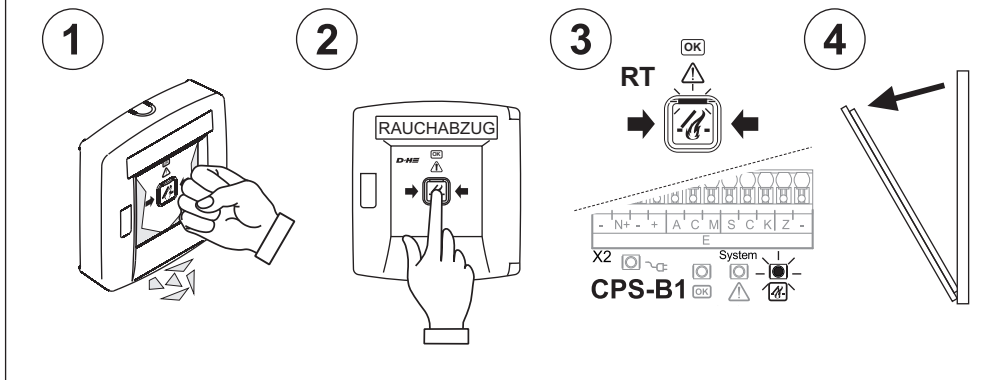
Only for EC countries:

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.

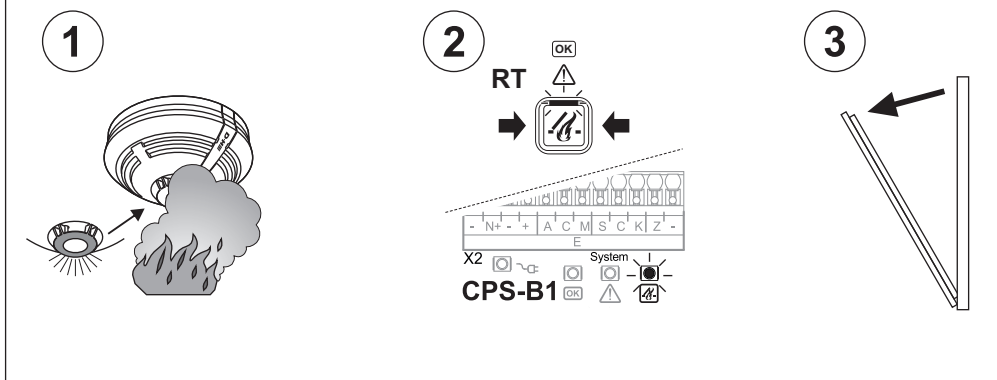


Operation - Release in case of alarm

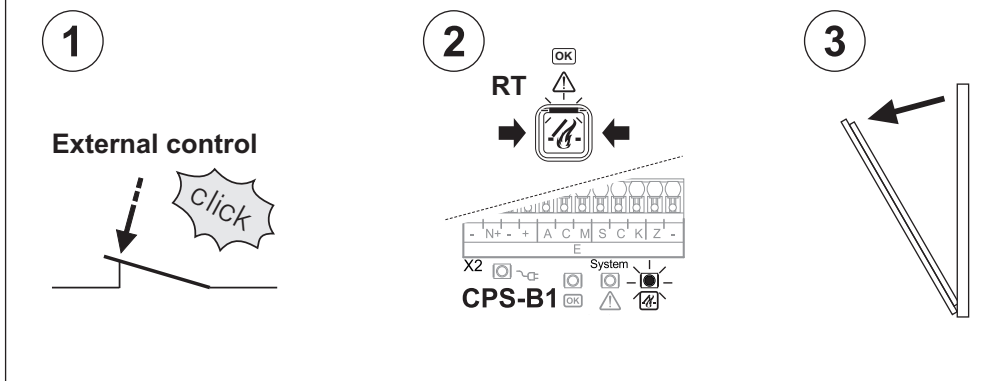
Manual opening by smoke vent button:



Automatic opening by fire detector:



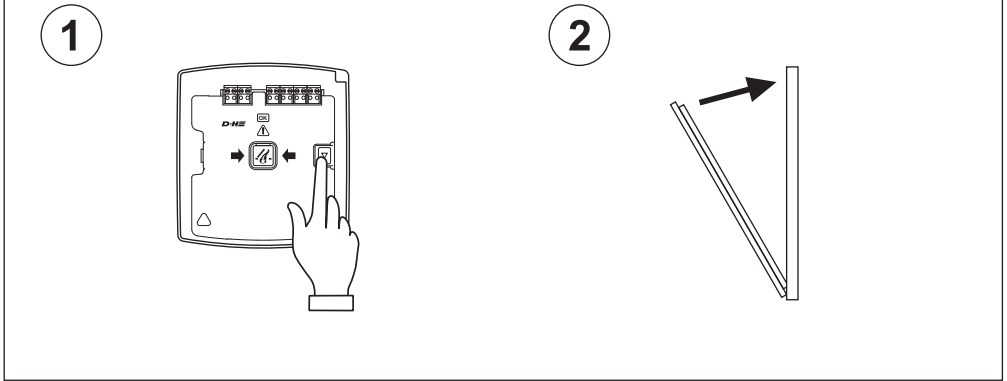
Automatic opening by external control (e.g. fire alarm system):



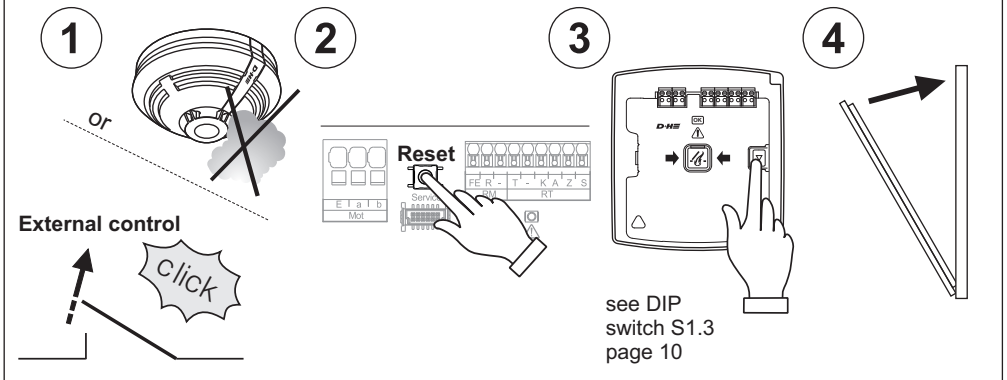
Operation - Closing after alarm

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

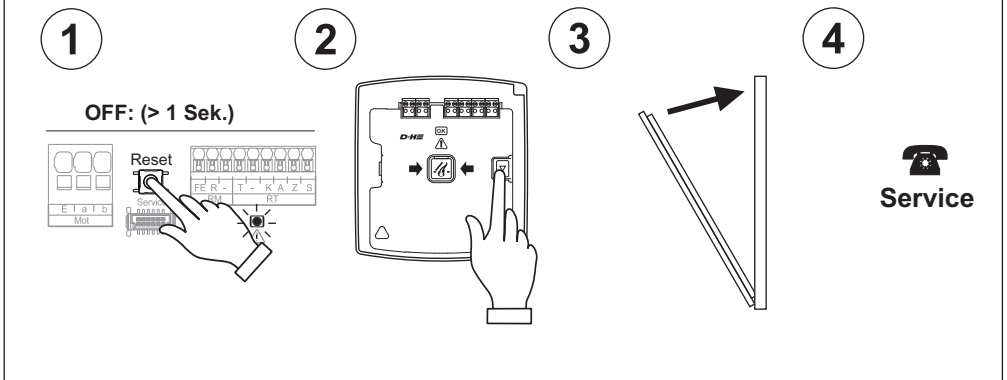
With manual release:



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

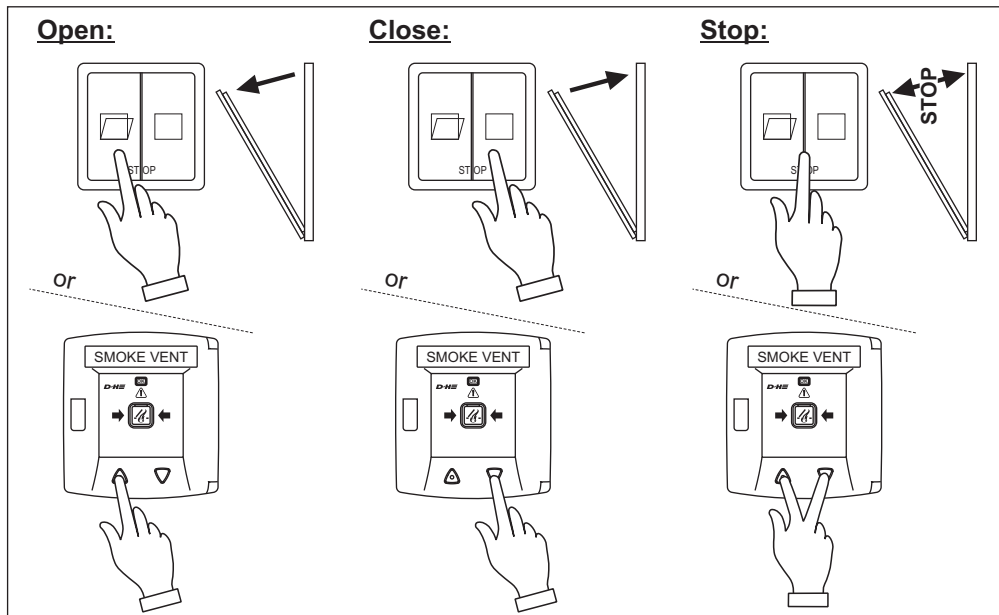


Emergency closing in case of non-resettable alarm:



Operation - Day-to-day ventilation

Ventilation button or SHEV button with ventilation function RT 45-LT required.



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.

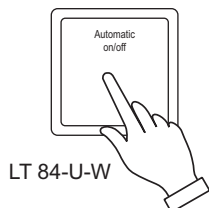
The weather automatic can be switched-off via an **optional automatic switch**, if gap ventilation is required in case of bad weather.

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.





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