



Salva

Smoke alarm

as replacement element for Salva KNX (70405, 70406) or for installation without KNX

Technical specifications and installation instructions

Item number 70409





When using the device as replacement element, please see chapter *Use as replacement element for KNX smoke alarms*, page 13.

1. Description

Salva can be used as an independent smoke alarm or as replacement element for the KNX smoke alarms Salva KNX TH and Salva KNX basic.

The smoke alarm features an automatic evaluation sensor system for early and accurate fire alarms. Alarms are output as a local acoustic signal.

If **Salva** is used as replacement element for a KNX smoke alarm, the board of the KNX sensor is inserted into the replacement unit.

Functions:

- **Smoke alarm sensors** with optical detection based on the scattered light principle, certified according to EN 14604:2005/AC:2008 and 1172-CPR-150013. Local acoustic alarm signal output (warning sound at least 85 dB). Local alarm acknowledgement
- Signalling of **smoke alarm**
- Smoke chamber pollution measurement and pollution display according to UL directive
- Power supply via battery (9 V). Lack of battery capacity is signalled optically and acoustically for 30 days
- High operative safety due to elaborate automatic self-testing of the entire electronics and separate energy measurement
- Faults signalled locally
- High deceptive alarm immunity due to powerful measuring chamber and consideration of temperature fluctuations (though no temperature smoke alarm)

1.0.1. Deliverables

- Sensor (housing with skirting)
- 9 V battery
- 2 screws and dowels for assembly (always use fastening material that is suitable for the material underneath)
- 2 short slotted screws for mounting the PCB (when used as a replacement element)

1.1. Technical specifications

Housing	ABS, glass
Colour	White / Translucent
Assembly	Surface mount
Protection category	IP 30

Dimensions	Ø approx. 113 mm, height approx. 58 mm
Weight	approx. 280 g
Ambient temperature	Operation -10...+60°C, storage -10°C ... +60°C
Surrounding air humidity	max. 93% RH, avoid condensation
Operating voltage	9 V (battery)
Smoke alarm:	
Detection principle	Tyndall effect (optical)
Alarm display	optically (LED red) and acoustically (signal tone >85 dB(A) / 3 m)
Complies with	EN 14604:2005
Max. monitoring area	60 m ² to 6 m height
Air velocity	max. 20 m/s
Response sensitivity	0.15 dB/m typical
Shelf life for the alarm	max. 2 years

The product conforms with the provisions of EU directives.

2. Installation as separate unit

2.1. Installation notes



Installation, testing, operational start-up and troubleshooting should only be performed by an electrician.



CAUTION! **Live voltage!**

There are unprotected live components inside the device.

- National legal regulations are to be followed.
- Ensure that all lines to be assembled are free of voltage and take precautions against accidental switching on.
- Do not use the device if it is damaged.
- Take the device or system out of service and secure it against unintentional use, if it can be assumed, that risk-free operation is no longer guaranteed.

The device is only to be used for its intended purpose. Any improper modification or failure to follow the operating instructions voids any and all warranty and guarantee claims.

After unpacking the device, check it immediately for possible mechanical damage. If it has been damaged in transport, inform the supplier immediately.

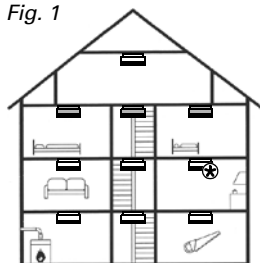
The device may only be used as a fixed-site installation; that means only when assembled and after conclusion of all installation and operational start-up tasks and only in the surroundings designated for it.




Elsner Elektronik is not liable for any changes in norms and standards which may occur after publication of these operating instructions.

2.2. Installation location

2.2.1. Equipping the building with smoke alarms

Fig. 1



-  *Minimum equipment*
-  *Ideal equipment*
-  *Equipment with limitations*

The minimum protection is the installation of smoke alarms in the bedrooms and halls and/or corridors to ensure that you are woken up during the night in case of a smoke alarm. If the building has several floors, at least one smoke alarm should be installed in the hall on every floor. Please refer to DIN 14676 for further installation guidelines.

2.2.2. Positioning and distances

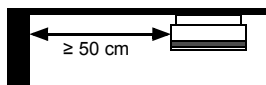
Install the smoke alarm on the room ceiling. If the smoke alarm is installed in the middle of the room, it has its best detection characteristics.



WARNING!

Mains voltage for in-wall concealed cables!

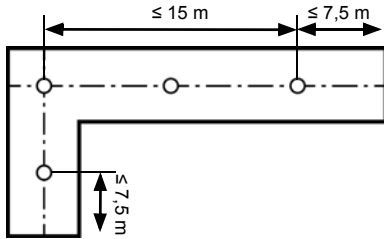
- If the device is attached by means of screws, first ensure that there is no power line installed under the assembly point!



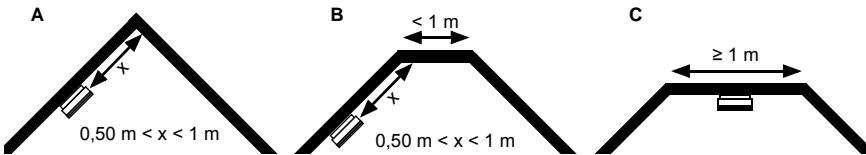
Maintain a minimum distance of 50 cm to:

- walls
- lamps
- live wires

Small rooms: If the minimum distance to the wall cannot be maintained, install the alarm on the wall. Keep a distance of at least 0.50 m and maximum 1 m to the ceiling.

Halls and corridors:

Attach the first alarm at a maximum distance of 7.50 m to the end of the room in long structures. Distribute at least 3 alarms on 15 m of corridor. Attach alarms in the middle of corners and crossroads in the corridor.

Gables:

A + B: For pointed and flat gables with a ceiling area of less than 1 m width: Attach alarms at a minimum distance of 0.50 m and a maximum distance of 1 m to the top.

C: For flat gables with a ceiling area of more than 1 m width: Attach to the middle of the ceiling like in other rooms.

Rooms with a gallery: Attach an additional alarm underneath the gallery if said gallery is longer and wider than 2 m and has more than 16 m².

Segmented ceilings: If there are separate areas in the ceiling with a depth of more than 0.20 m and an area of more than 32 m² (e.g. due to beams separating the areas), install an alarm in each area (on the ceiling or on the beams).



The device is only approved for interior spaces. Do not install in rooms with temperatures of less than -10°C or more than +50°C! Avoid condensation.



Do not install in rooms in which a high degree of water vapour is produced under normal circumstances (e.g. kitchen, bathroom, toilet)!



Do not install near places of fire or open fireplaces!



Do not install near ventilation shafts (e.g. of air conditioning or circulating air systems)!



Do not paint the smoke alarms!

2.3. Device design

2.3.1. Exterior view

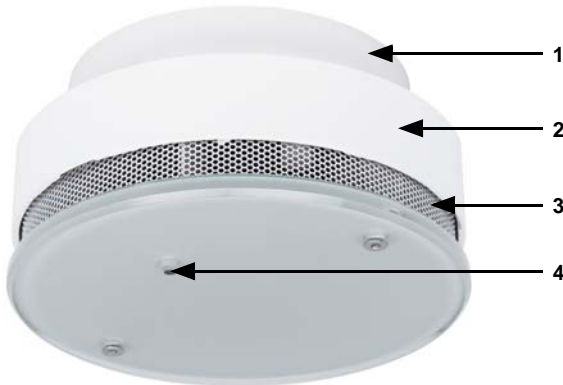


Fig. 2

- 1 Skirting
- 2 Housing with electronics and battery
- 3 Openings for air circulation
- 4 Light transmission bar: Red LED for Operating and alarm signals, page 12 and Push-button for Function test, page 10

2.3.2. Skirting

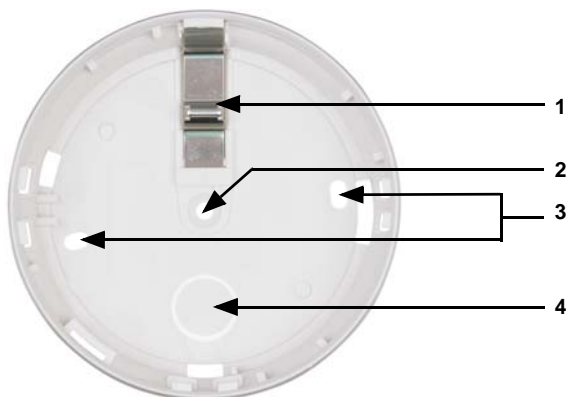


Fig. 3

- 1 Battery assembly lock (the housing cannot be closed without a battery)
- 2 Fastening opening with 1 screw
- 3 Openings for fastenings with 2 screws (distance 67 mm)
- 4 Opening for bus cable

2.3.3. Interior view of the housing



Fig. 4

- 1 Battery

2.4. Installing the device

2.4.1. Instructions for assembly and initial start-up

Never expose the device to water (e.g. rain) or dust (e.g. drilling dust). This can damage the electronics and the sensor system. A relative air humidity of 93% may not be exceeded. Avoid condensation.

2.4.2. Assembly preparation and skirting assembly

Determine the installation point on the room ceiling. Please observe the instructions in chapter *Installation location*, page 4 for this.



BEWARE!

Injury hazard in case of improper fastening!

The device may fall and injure people if it is not fastened properly.

- Observe, the carrying capacity of the wall/ceiling material when selecting the place of installation.
- Use fixing materials that are suitable for the material underneath.

If you are using the screws and dowels provided, use a 6mm drill to drill holes with a distance of 67 mm (if you are using two screws for installation). Use the skirting of the smoke alarm as a stencil. Insert the dowels into the drilling holes.



Fig. 5

The housing is removed from the skirting by turning it anti-clockwise.

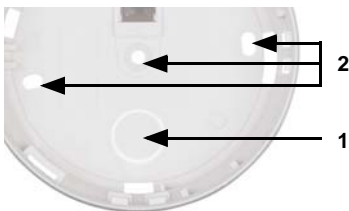


Fig. 6

In case of replacement: Remove the cover on the opening for the supply line (1) from the skirting and thread the cable through it.

Screw the smoke alarm skirting onto the ceiling (2, openings for screws).

As an alternative, the skirting of the alarm may be attached to the ceiling with double-sided adhesive pad (VdS approved). Carefully check the ceiling surface carefully for lasting carrying and adhesive capacity before using adhesive pads. If necessary, do a test glueing application. Optimum adhesive power can only be obtained on a clean surface.

Remove the protective foil from one side of the adhesive pad and attach the pad in the middle of the alarm skirting. Then remove the protective foil on the other side and attach the skirting by firmly pressing it to the ceiling.

2.4.3. Inserting the battery

The supply line of the smoke alarm occurs via a 9 V battery.



WARNING!

Danger of explosion in case of improper handling of the battery!
Property damage by battery leakage.

- Do not recharge batteries.
- Do not short-circuit batteries.
- Do not force batteries open or damage them
- Do not bring batteries in contact with fire, water or high temperatures.



ATTENTION!

Do not use rechargeable batteries or mains units for voltage supply!

- In case of mains voltage, the device would be out of order if the mains is out and could not signal any fire.
- The lower rechargeable battery voltage would trigger a low battery capacity alarm.



Fig. 7

Connect the battery (check for correct polarity!) and insert it into the battery compartment.

2.4.4. Completing the installation



Fig. 8

Place the housing onto the skirting and fasten it by turning it clockwise.

Check if the LED is flashing and conduct a function test.

> *Function test*, page 10

3. Maintenance

In some German federal states, the owner of houses and flats are responsible for the installation and functioning of smoke alarms according to LBO (State construction laws) (see www.rauchmelder-lebensretter.de). Maintenance has to be conducted at least annually and, according to DIN 14676 includes a visual inspection, a function test and, if required, a battery change. A function test also has to be conducted after any longer absence, at ,after 1 year at the latest.



The used battery and the device must be disposed of correctly so that valuable resources may be recycled. Neither the battery nor the device may be disposed of together with domestic or company waste.

3.1. Function test



BEWARE!

Danger of hearing damage!

During the function test (pressing on the light transmission bar), a loud, shrill tone is sounded (at least 85 dB).

- Keep a minimum distance of 50 cm between smoke alarm and ear.

1. Conducting a visual inspection:

Check:

- Is the device found at the expected position?
- Are the smoke entry openings clean? - Remove dust if necessary. The device must not be painted over.
- Is the device free from mechanical damage? - Replace the device if it is damaged.

2. Conducting a function test:



Fig. 9

Press the light transmission bar for at least 1 second.

If the function test is successful, a signal tone sounds. The smoke alarm works properly. If there is no signal tone, the device is not functioning. In this case, replace the battery and conduct the function test again. If there is still no signal tone, the device is defect and must be replaced.



Smoke alarms must be replaced with new devices after a maximum period of 10 years according to DIN 14604.

3.2. Replace the battery

The device is supplied with 9 V voltage from a battery. Lack of battery capacity is signalled optically and acoustically for 30 days.



Fig. 10

Separate the smoke alarm from the skirting by turning it anti-clockwise.



Fig. 11

Connect the new battery to the smoke alarm (check for correct polarity!) and insert it into the battery compartment.



Fig. 12

Place the housing with the new battery onto the skirting and fasten it by turning it clockwise.

Check if the LED is flashing and conduct a function test.

> *Function test*, page 10

3.2.1. Types of batteries



WARNING!

Danger of explosion in case of improper handling of the battery!

- Only replace with a lithium battery type DFK CP-V9Ju.
- Do not use rechargeable batteries or mains units for voltage supply to ensure a sufficiently high voltage and supply even in case of a mains outage.
- Do not recharge batteries and do not short-circuit them.
- Do not force batteries open or damage them and do not bring them into contact with fire, water or high temperatures.

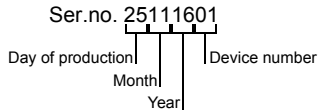
Approved battery type	FDK CP-V9Ju Only use lithium batteries
Average service life	approx. 10 years (typical), under normal conditions as per EN 14604



The used battery and the device must be disposed of properly so that valuable resources may be recycled. Neither the battery nor the device may be disposed of together with domestic or company waste.

3.2.2. Serial number

The serial number on the type plate inside the device contains the production data and device number:



4. Device alarm functions

4.1. Alarm mute (acknowledgement)



Fig. 13

The alarm can be muted by pressing the flashing light transmission bar.

In this case, only the LED continues to flash every 10 seconds. After about 10 minutes, the device switches back to normal operating mode.

4.2. Alarm memory

An alarm is saved in the device for 24 hours. During this time, the LED briefly flashes 3 times every 43 seconds. The alarm memory can be reset by pressing the light transmission bar (red LED) once.

4.3. Operating and alarm signals

Function / meaning	Signal tone	Red LED
Normal operating mode (automatic self-test)	No sound	Flashes every 40 seconds
Alarm status	Loud interval tone in 0.5 second rhythm	Flashing twice per second
Fault / dirt	Short signal tone 3 times every 40 seconds	LED off

Function / meaning	Signal tone	Red LED
Battery exchange display	1x Short signal tone every 40 seconds	Flashes every 40 seconds together with the signal tone
Alarm mute (acknowledgement)	No sound	Flashes every 10 seconds
Alarm memory active (i.e. there was an alarm state during the previous 24 hours)	No sound	Flashes 3 times every 43 seconds
Function test	Loud interval tone	Flashing twice per second while the light transmission bar is pressed

5. Use as replacement element for KNX smoke alarms



Fig. 14

1. The housing is removed from the skirting by turning it anti-clockwise.

2. Disconnect the device from the bus and remove the battery.



Fig. 15

3. Loosen the two slotted screws that hold the board.



Fig. 16

4. Pull the board out of the housing
Grasp the circuit board in the area of the connector so that the sensitive pins are not bent.



Fig. 17

5. Insert the board into the replacement element. The plug-in connection must be closed again.
Screw the board onto the spacers.

6. Connect the device to the bus again.
7. Insert the battery.



Fig. 18

8. Place the housing onto the skirting and fasten it by turning it clockwise.

9. Check if the LED is flashing and conduct a function test.
> *Function test*, page 10

Note:

After the bus voltage has been applied, the device will enter an initialisation phase lasting a few seconds. During this phase no information can be received or sent via the bus.