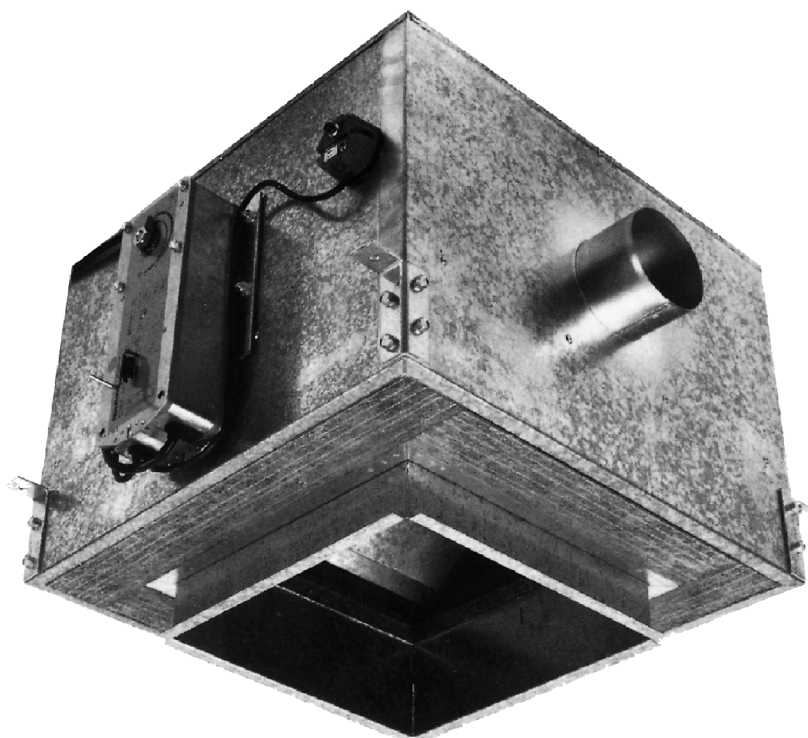




Fire Protection Unit

BAK-250



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Fire Protection Unit BAK-250

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Fire Protection Unit BAK-250

Description

Exposed ceiling constructions can lose their strength during a fire. To avoid this, ceiling constructions are protected with fire-resistant false ceilings. Opening the false ceiling, for example, for air diffusers, is only permitted when they can be closed again during a fire with suitable fire protection equipment, for example with the fire protection unit type BAK-250.

The fire protection unit type BAK-250 of **resistance class K90-U according to the building inspection approval certificate Z-41.3-542** is suitable for **installation in false ceilings** designed as panelled ceilings in screw-type and spatulated design that meet the requirements of an independent component of being fire-resistant for 90 minutes in the event of a fire from top or bottom and classified in fire resistance class F90-A. The use in supply or return air installations is possible.

The fire protection box is fitted **with two thermal trigger devices (72°C)**. One of them is a fusible link integrated inside the box, while the other fusible link is fitted outside. This double trigger device increases the safety of the fire protection box, as in case of fire the trigger and closing motion of the damper blade takes place independently of whether the temperature occurs first inside of the ventilation ducts or outside.

A sliding connection pipe allows them to be adapted to different ceiling strengths, the sliding connection piece being delivered loose.

The fire protection unit type BAK-250 must not be connected to return air ducts in commercial kitchens or to fume hoods. Nor must the fire protection box be used in ventilation ducts in which the function of the shut-off device is prevented because of heavy soiling, extreme humidity or chemical contamination.

The fire protection suitability test was carried out according to the construction and testing guidelines for shut-off devices used to control fire and smoke in ventilation ducts (fire dampers) to be installed in fire-resistant false ceilings.

For maintenance, servicing, retrofitting, etc., it may be necessary to provide on-site inspection openings in suspended ceilings, shaft walls, etc. They must be built in in sufficient numbers and size.

Classification:

| | |
|---------------|------------------------------------|
| False ceiling | Fire Protection Unit Model BAK-250 |
| F90 A | K90-U |
| F60 A | K60-U |
| F30 A | K30-U |

Ventilation fittings

When the air diffusers are fitted into the BAK-250, a minimum distance of 5 mm must be guaranteed between the fittings and the inner housing faces.

The following air diffusers, produced with non-flammable material, can be fitted into the fire protection unit:

The fittings in the fire protection unit increase the sound volume of the air diffusers compared with the value in the diagram by +4 dB(a).

| | |
|-------------|-------------|
| Supply air: | Return air: |
| DQJA-SR-Z | DQJA-SR-A |
| DQJA-SQ-Z, | DQJA-SQ-A |
| 4-DE-Z | 4-DE-A |
| DQD-L | DQD-L |
| 4-DF | 4-DF |
| DO-SR-F | DO-SR-F |
| DQF | DQF |

Attention: As only air diffusers made of non-flammable material must be fitted, only blades in sheet steel or aluminium design must be used!

Weight of the fire protection unit

| Size | kg |
|---------|----|
| 300 | 29 |
| 400 | 42 |
| 500 | 55 |
| 600/625 | 67 |

Dimensions of the tension rod

| Size | Allowed load F (N) per piece |
|------|------------------------------|
| M8 | 220 |
| M10 | 348 |

Accessories - Description

To increase the protection, the fire protection unit type BAK-250 can have the following parts fitted at an extra charge: Magnet HA, electric spring return actuator ELD, limit switch.

When a spring return actuator or a magnet is fitted, a maintenance opening must be provided in the false ceiling, to allow regular maintenance of the parts mounted outside the BAK-250. These accessories allow the unit to be connected also to a smoke detector so that the fire protection unit will also close when smoke is spreading and at temperatures < 72°C, thus preventing the building from becoming filled with smoke.

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Connection of ventilation ducts

The fire protection unit box type BAK-250 must only be connected to ventilation ducts made of non-flammable building materials (building material class A to DIN 4102). The ventilation ducts used must not exert considerable forces on the fire protection unit or the false ceiling. To compensate for elongated stretching use, flexible connection pieces made of non-flammable material (building material class A to DIN 4102) must be used on site. The connection pieces must allow an expansion of at least 10 cm when installed. Flexible ventilation ducts made of steel or aluminium can be used instead of the flexible connection pieces.

Maintenance

The fire protection unit must be subjected to maintenance according to the maintenance instructions before commissioning or delivery. After commissioning of the ventilation installation, all shut-off devices must be subjected to maintenance twice a year. If two consecutive maintenances do not show any malfunctions, the maintenance interval of the smoke extraction dampers can be reduced to once a year. It is advisable to keep a maintenance log.

The fire protection unit must be fitted in a way that inner viewing, maintenance and cleaning is possible in fitted condition. For maintenance purposes, the air diffuser can be disassembled from the room side, so that additional maintenance openings in the false ceiling, if no motor or magnet is installed, are not necessary.

Note

The valid test certificates, which we shall forward on request, are legally binding.

Construction

Fire protection unit

- Galvanised sheet steel

Damper leaf

- Metal housing with Promatect-H filling

Blades

- Aluminium painted to the RAL colour of the face plate.
- Sheet steel painted to RAL 9010 (white)

Air diffuser

- Sheet steel painted to RAL 9010 (white) with blades

Sliding connection pipe

- Galvanised sheet steel

Accessories

electric spring return actuator (-ELD)

- 24 V AC / 24 V DC / 230 V AC

Limit switch (-ES)

- electric, protection type IP 66

Magnet (-HA)

- electric trigger device

Fastening

Screw mounting (-SM)

- Standard, with 4 countersunk screws (on-site)

Concealed mounting (-VM)

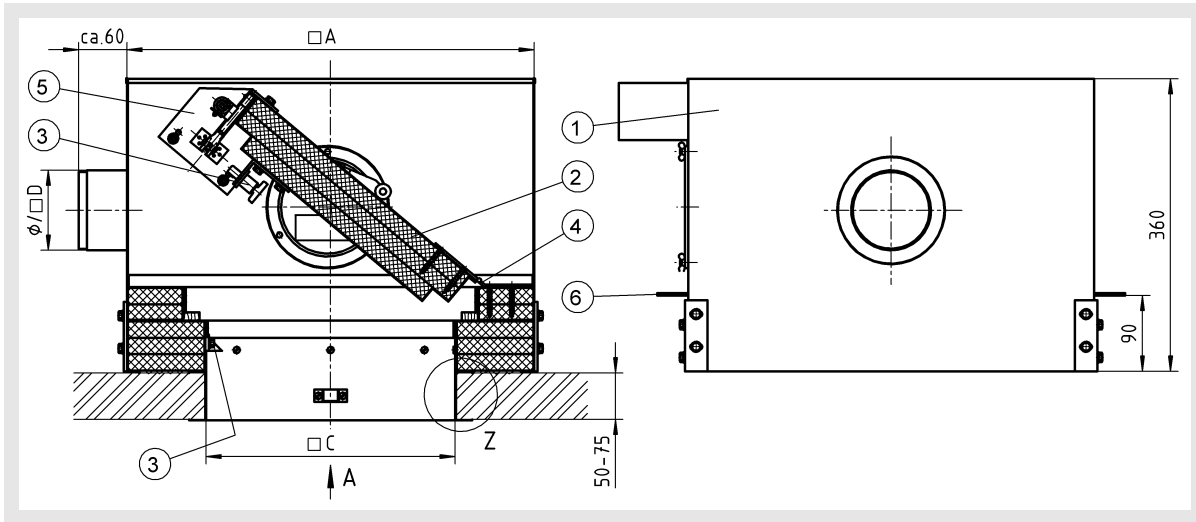
- not possible!

Fire Protection Unit BAK-250

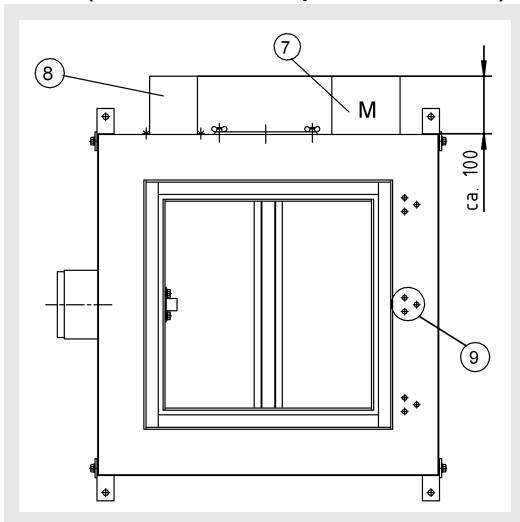
Models and dimensions

Dimensions

BAK-250



View A (drawn without damper leaf and cover)

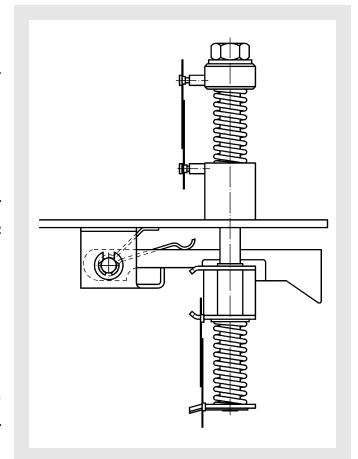


Trigger device

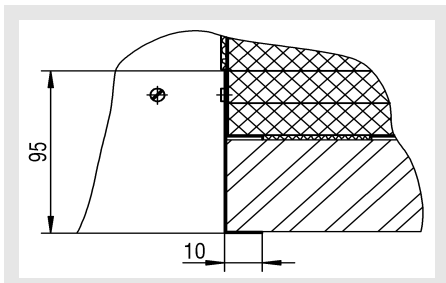
The fire protection unit is supplied as standard with an inside and an outside trigger device (fusible link with 72°C trigger temperature)! Thus, during a fire, the trigger and closing motion of the damper blade occur independently of whether the temperature > 72°C first arises on the inside or the outside of the duct system.

The breakage of one of the fusible links closes the damper leaf and locks it into place.

The damper leaf can no longer be locked in the OPEN position, before the fusible link is replaced.



Detail Z



Available sizes

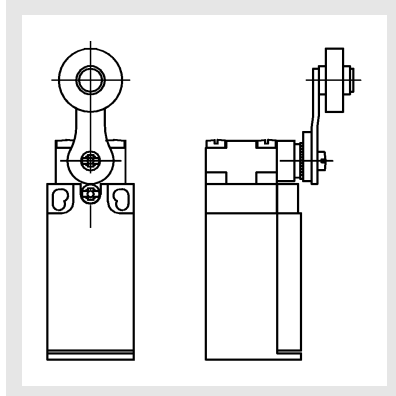
| Size | □A | □C | □D / øD |
|---------|-----|-----|---------|
| 310 | 490 | 290 | 158 |
| 400 | 570 | 370 | 158 |
| 500 | 670 | 470 | 198 |
| 600/625 | 770 | 570 | 198 |

- 1 Housing
 - 2 Shut-off damper
 - 3 Snap-in locking device
 - 4 Shut-off damper housing
 - 5 Trigger device
 - 6 Mounting brackets
 - 7 Motor
 - 8 Fusible link cover
 - 9 available from size 500
- NW = Nominal value

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Dimensions of accessories

Limit switch (-ES)



Switching elements in-- 1 NC contact and clude

with jump feed - 1 NO contact each
- 4 connections

Screw terminal M3.5 for max. 2 mm²

Working temperature -20 °C ... +70 °C

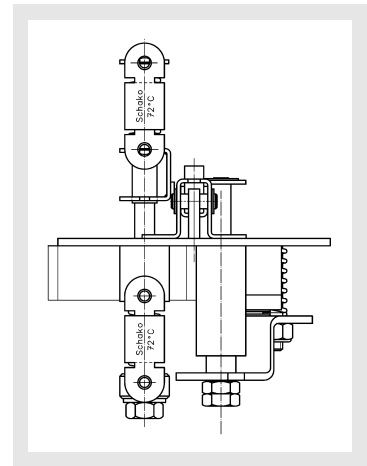
Protection type IP 66 when using suitable cable screws.

le 6 A 230 V ~ (wiring on-site).

Trigger device with magnet type HA (at an extra charge)

The shut-off damper is triggered and closed by interrupting the voltage. The OPEN position is achieved manually.

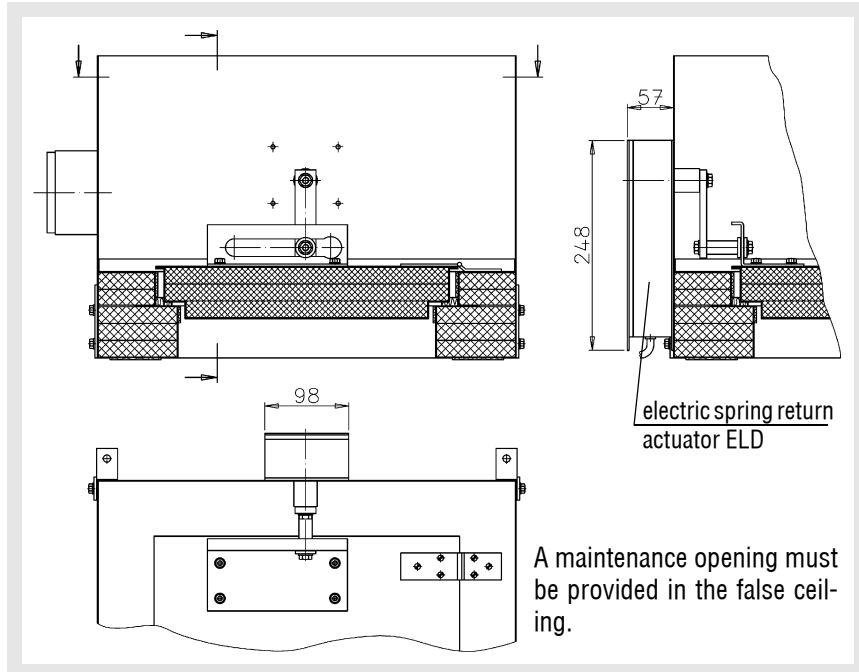
With the circuit closed, the plunger is pressed toward the magnet at the release lever. The locking damper is opened via the actuator lever and snaps into the OPEN position. The fire damper is now operational. Push-buttons (NC contacts), smoke detector devices, etc. can be installed on-site. The trigger device HA is supplied loose. Assembly on site. A maintenance opening must be provided in the false ceiling.



Supplied voltage:

24 V DC 100 % duty cycle 0.06 A 1.5 Watt type HA

BAK-250 with electric spring return actuator ELD (at an extra charge)



A maintenance opening must be provided in the false ceiling.

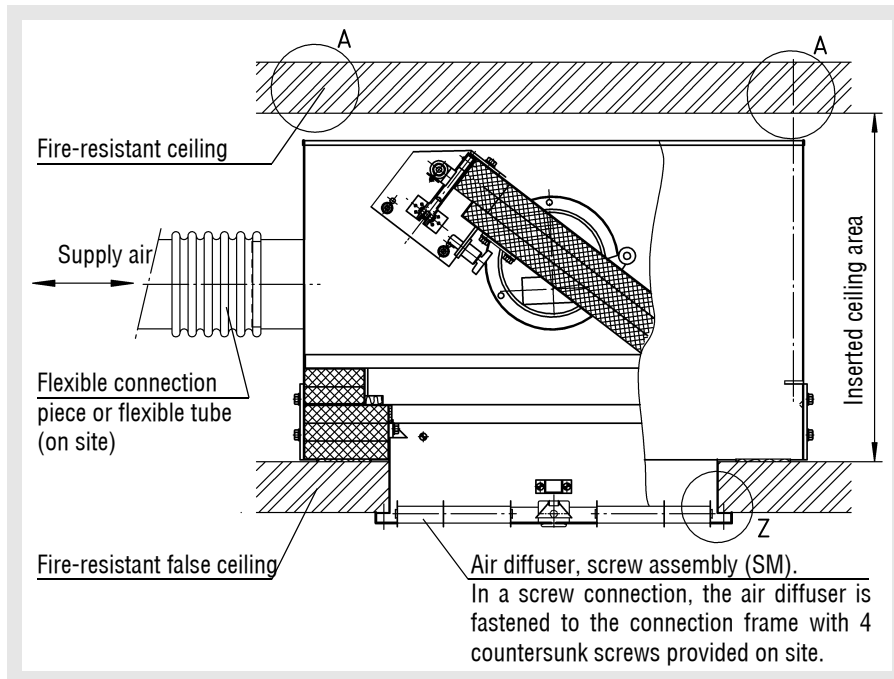
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Installation

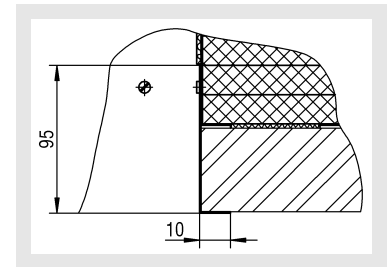
The fire protection unit type BAK-250 is connected with 4 suspensions from the ceiling. After that, the false ceiling is assembled. Then the air diffuser is connected to the false ceiling or to the plenum box with a screw connection (SM mounting).

The tension rod dimensions are calculated from the loads of their own weight, of the connected ducts and of the air diffuser.

Installation instructions

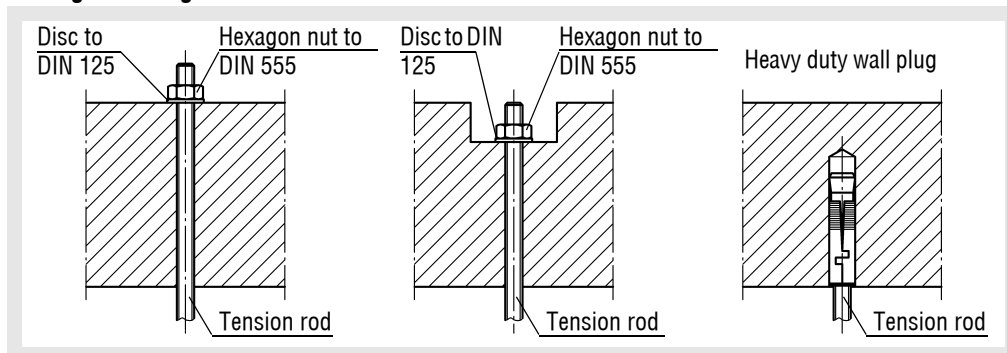


Detail Z



Detail A

Ceiling mounting alternative



Fire Protection Unit BAK-250

Specification texts

Fire protection unit of resistance class K 90 U according to the building inspection approval certificate Z-41.3-542, suitable for installation in false ceilings designed as panelled ceilings in screw-type and spatulated design that meet the requirements of an independent component of being fire-resistant for 90 minutes in the event of a fire from top or bottom and classified in fire resistance class F90-A. Metal-cased damper leaf and visible screw connection of the air diffuser. Damper leaf is triggered by an inside and outside thermal trigger device, trigger temperature 72°C.

A sliding connection pipe allows them to be adapted to different ceiling strengths.

Product: SCHAKO **type BAK-250**

- with supply air - swirl diffuser, painted aluminium blades
 - DQJA-SR-Z
 - DQJA-SQ-Z,
- with supply air - ceiling diffuser, painted sheet steel blades
 - DQD-L
 - 4-DF
 - DO-SR-F
 - DQF
- with supply air - ceiling diffuser, painted aluminium blades
 - 4-DE-Z
- with return air - swirl diffuser
 - DQJA-SR-A
 - DQJA-SQ-A
- with return air - ceiling diffuser
 - 4-DE-A
 - DQD-L
 - 4-DF
 - DO-SR-F
 - DQF

Accessories:

- Magnet type -HA
- electric spring return actuator ELD
 - 230 V AC
 - 24 V AC
 - 24 V DC
- with electric limit switch (-ES), humidity protection IP 66
 - Type ES 1 A, for "OPEN"
 - Type ES 1 Ex in Ex design