

Fig.: BKA-U with B10 actuator and smoke detection system RMS

BKA-Ü

Fire-resistant damper
of special design and application

USABILITY CERTIFICATE

- General type approval (aBG)
Z-6.50-2012

PERFORMANCE DATA

- To close the openings in fire-resistant walls and ceilings

CONSTRUCTION PRODUCTS TO BE USED IN COMPLIANCE WITH GENERAL TYPE APPROVAL

- Fire damper model BKA-EN according to DIN EN 15650
- Smoke detection system type RMS in compliance with general building supervisory approval (abZ) no. Z-78.6-58

SPECIAL FEATURES

- Extensive uses and applications
- Large free cross-sections

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DESCRIPTION

Fire-resistant dampers of special design and application are used if, as part of ventilation planning, openings are required in fire-resistant inner walls or ceilings for the air intake, they must be closed in the event of a fire.

The competent building supervisory authority will decide whether the opening is admissible, for example because it differs or in connection with the approval of the fire protection concept.

The required dampers are fire-resistant dampers which are closed in case of fire driven by a suitable smoke detecting triggering device in the event of a fire, thus, preventing the propagation of fire and smoke through the component opening. Dampers of this type may not be connected to ventilation ducts in connection with RLT systems in buildings.

The general type approval (aBG) Z-6.50-2012 in its currently valid form, the installation, mounting and operating instructions and the relevant national standards and directives must be observed in connection with this technical documentation.

The standard fire-resistant damper BKA-Ü consists of the following components (fitted or wired ex works):

- SCHAKO Fire damper BKA-EN with CE marking and Declaration of Performance (DoP) in accordance with the Construction Products Ordinance, housing made of galvanised sheet steel with spring return actuator 24 V.
- SCHAKO Mounting part type EBT, galvanised sheet steel model (painted black matt on the inside).
- SCHAKO Finishing protective grating type ASG on both sides, galvanised sheet steel model (operator side: painted black matt).
- SCHAKO Extension piece type VT, galvanised sheet steel model, required for $H \geq 400$.
- SCHAKO Smoke detection system type RMS, in compliance with general building supervisory approval (abZ)/general type approval (aBG) no. Z-78.6-58

Installation is performed in interior walls (horizontal position of the damper blade axle) and ceilings. In doing so, the general building supervisory approval (aBG) no. Z-6.50-2012, the Declaration of performance (DoP) of BKA-EN and the general building supervisory approval (abZ) / general type approval (aBG) no. Z-78.6-58 and the associated technical documentation must be observed. For the installation in solid ceilings, the dimensions of BKA-Ü are limited to W and $H = 500$ mm. For wall installation, the smoke detector (type RMSII-L) must always be installed above (W side) in the assembly part type EBT.

For functional tests, servicing, etc., it is mandatory to provide on-site inspection openings in suspended ceilings, shaft walls etc. They must be built in sufficient numbers and size and must not impair the functioning of the fire-resistant damper(s).

Attention

Building systems have to be arranged, installed, changed and maintained in such a way that they prevent fire and propagation of fire and smoke (fire propagation) and allow evacuation of people and animals as well as efficient fire extinguishing work.

MODELS AND DIMENSIONS

Dimensions

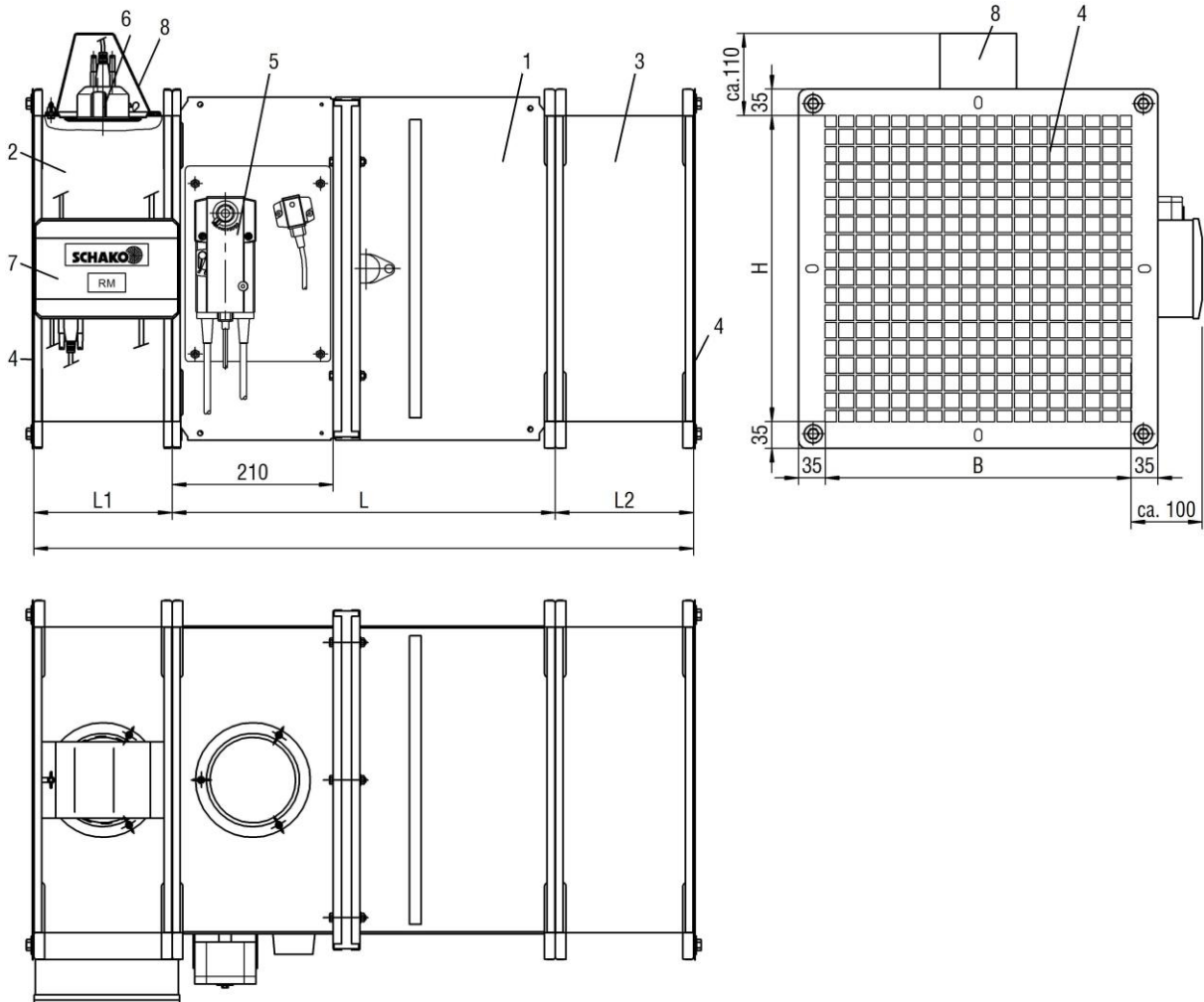


Figure 1: Dimensions BKA-Ü

- 1 Fire-Resistant Damper Model BKA-Ü
- 2 Assembly part type EBT (painted black matt on the inside)
- 3 Extension piece type VT (required for $H \geq 400$)
- 4 Finishing protective grating type ASG (operator side: painted black matt)
- 5 Spring return actuator 24 V
- 6 Smoke detector RMSII-L
- 7 Relay module RM
- 8 Protective cover

Legend

B	[mm]	= Width
H	[mm]	= Height
L	[mm]	= Length
ρ	[kg/m ³]	= Density
min.		= at least
max.		= maximum
bzw.		= or
approx.		= approximately

Available sizes [mm]

Width (B)	Height (H)
200	200
225	225
250	250
275	275
300	300
325	325
350	350
375	375
400	400
450	450
500	500
550	550
600	600
650	650
700	700
750	750
800	800
900	
1000	
1100	
1200	
1300	
1400	
1500	

Table 1: Available sizes

- All heights and widths which can be combined are available!
- Drive unit always on the H side of the fire-resistant dampers.
- Inspection openings always on the W side of the fire-resistant dampers.
- On request, the width and height dimensions are available in steps of 10 mm.
- For wall installation, the smoke detector (type RMSII-L) must always be installed above (B side) in the assembly part type EBT.

H [mm]	L1 [mm]	L [mm]	L2 [mm]	Total length [mm]
200	180	500	-	680
225				
250				
275				
300				
325				
350				
375				
400			180	860
450				
500				
550				
600				
650				
700				
750				
800	210	920		

Table 2: Length specifications
Available at an extra charge

- Stainless steel model with material no. 1.4301 (V2A) or 1.4571 (V4A - All replaceable, non-coated parts are made of stainless steel material no. 1.4301 (V2A)).
Note: EBT painted in black matt on the inside, ASG painted in black matt on operator side.
- Model with DD coating (solvent-containing two-component top coat based on polyurethane varnish - RAL 7035 /light grey) inside and outside (replaceable, non-coated parts and the U-profile of the damper blade are made of stainless steel material no. 1.4301).
Note: EBT painted in black matt on the inside, ASG painted in black matt on operator side.

Table 3: Overview of housing designs

Use

BKA-Ü can be fitted as shown in the following table.

Use	Installation	Material/Model	Minimum thickness [mm]	Minimum distance [mm]	Fire resistance class BKA-EN	Notes Page °		
WALL ³⁾	solid; apparent density $\geq 450 \text{ kg/m}^3$	in	Wet installation in, for example, concrete; masonry according to EN 1996 or DIN 1053; solid plaster wall boards according to EN 12859	100	next to each other: 70 ^{1) 2)}	EI 90 (v _e , i \leftrightarrow o) S	8	
			Dry installation <u>with</u> Hilti soft seal system in, for example, concrete; masonry according to EN 1996 or DIN 1053; solid plaster wall boards according to EN 12859 ⁶⁾	100	next to each other: 200 ²⁾	EI 90 (v _e , i \leftrightarrow o) S	9	
	Lightweight partition wall; classification according to EN 13501-2 or similar national standards	in		Wet or dry installation in lightweight partition walls with metal posts and panelling on both sides ⁶⁾	100	next to each other: 200 ²⁾	EI 90 (v _e , i \leftrightarrow o) S	14
				Dry installation <u>with</u> additional installation frame type ER-A1 in lightweight partition walls with metal posts and panelling on both sides ⁶⁾	100	next to each other: 200 ²⁾	EI 90 (v _e , i \leftrightarrow o) S	17
				Dry installation <u>with</u> Hilti soft seal system in lightweight partition walls with metal posts and panelling on both sides ⁶⁾	100	next to each other: 200 ²⁾	EI 90 (v _e , i \leftrightarrow o) S	20
				Dry installation in lightweight partition walls with metal posts and panelling on both sides ⁶⁾	75	next to each other: 200 ²⁾	EI 30 (v _e , i \leftrightarrow o) S EI 60 (v _e , i \leftrightarrow o) S	22
				Wet installation in lightweight partition walls with metal posts and panelling on one side ⁶⁾	125	next to each other: 200 ²⁾	EI 90 (v _e , i \leftrightarrow o) S	23
	CEILING ⁴⁾	solid; apparent density $\geq 500 \text{ kg/m}^3$	in	Wet installation in, for example, concrete; aerated concrete	125	from one another: 70 ²⁾	EI 90 (h _o , i \leftrightarrow o) S	11
				Wet installation with concrete base in, for example, concrete; aerated concrete ⁵⁾	125	from one another: 70 ²⁾	EI 90 (h _o , i \leftrightarrow o) S	12

Table 4: Usability

Additional note:

It may also be installed in walls or ceilings of a lower fire resistance class. In this case, however, the fire resistance class of the fire dampers is reduced accordingly. The conditions listed above must be taken into account.

¹⁾ If mineral wool is used between the fire-resistant dampers, the distance between them is 80 mm.

²⁾ Distances to the wall or ceiling see Figure 2 on page 7

³⁾ For wall installation, the smoke detector must always be installed above in the assembly part type EBT with the damper blade axle in the horizontal position.

⁴⁾ When installing in solid ceilings, the dimensions of the fire-resistant dampers BKA-Ü are limited to W and H = 500 mm.

⁵⁾ Installation only in combination with a concrete base still to be made on site.

⁶⁾ For each fire-resistant damper, a separate installation opening must be provided.

General information

- During mounting or installation, there is a risk of injuries. To avoid any possible injuries, personal protective equipment (PPE) must be worn.
- Fire-resistant dampers must be installed such that external forces do not impair their continuous functioning.
- During mounting it may be required to provide reinforcements for the housing or the like.
- The requirement of statically load-bearing lintels may have to be taken into consideration.
- If a fire-resistant damper is not filled with mortar on all four sides, installation and mounting aids on site must be removed.
- Improper transport/handling may result in damage/functional impairment. In addition to that, the film of the transport packaging must be removed and the delivery inspected for completeness.
- In storage, fire-resistant dampers must be protected from dust, dirt, moisture and the effects of temperature (e.g. direct sunlight, heat-emitting light source etc.). They must not be exposed to direct effects of the weather and must not be stored below -20 °C or above 50 °C .
- The fire-resistant dampers must be protected from soiling and damage. After installation is complete, any dirt must be removed immediately.
- Enough space must be provided for installation, mortar lining, etc.
- Perform a functional check of the fire-resistant dampers before and after mounting and ensure ready access.
- Electrical installation or work on electrical components may only be carried out by skilled electricians. The supply voltage must be switched off when performing this work and secured against being switched on again.
- We point out that only suitable cleaning materials may be used for cleaning the fire-resistant damper in stainless steel design!
- The construction company which has built the fire damper must provide a confirmation for each building project to verify its conformity with the general type approval (see § 16 a Section. 5, 21 Section 2 of model building regulation).

The confirmation must be executed in writing and must include at least the following information:

- Z-6.50-2012
- fire-resistant damper, type "BKA-Ü", of special design and application
- Name and address of the construction company
- Designation of the building
- Date of construction /date of completion
- Place and date of issue and signature of the person responsible

This declaration of compliance has to be handed over to the building owner for possible forwarding to the responsible building supervision authority.

Sample of a certificate of conformity see page 38

Minimum distances or projecting ends

The dimensions given must be considered an installation recommendation for the BKA-Ü and may differ, depending on the local situation. The installation must be performed according to the technical documentation, installation, mounting and operating instructions in combination with the currently valid aBG. Pay attention to the accessibility when installing 2 BKA-Üs next to each other or in the direct vicinity of adjacent components. For wall installation, the smoke detector must always be installed above in the assembly part type EBT with the damper blade axle in the horizontal position.

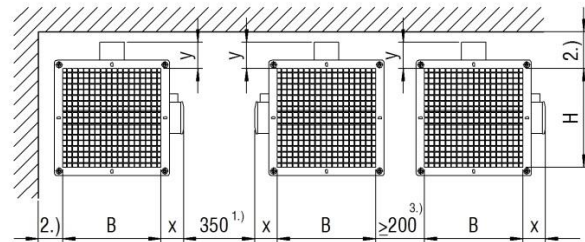


Figure 2: Minimum distances to walls, ceilings and to one another

- 1) Minimum distance recommended by SCHAKO for sufficient accessibility.
- 2) The distance between BKA-Ü and the adjacent component (wall/ceiling) must be determined according to the particular installation situation or adjusted to the dimensions of the projecting ends. The minimal dimension of 150 mm in the area of installed RMSII-L must be observed.
- 3) In solid walls and solid ceilings, installation of no more than 2 BKA-Ü can be effected at a reduced distance "flange-to-flange". This may lead to a situation in which the inspection openings are no longer freely accessible. In other installation situations, the distance may become larger as a result of construction. Sufficient distance between the mounted components must be guaranteed.

The projection length x is:

- approx. 90 mm with spring return actuators
- approx. 95 mm with relay module RM

The projection length y is:

- approx. 110 mm with smoke detector RMSII-L

Wet installation (mortar lining)

- If the installation of the fire-resistant damper is carried out by mortar lining, it must be completely filled with mortar of class M 10 to M 15 according to EN 998-2, or fire protection mortar of suitable grades, or with concrete or plaster mortar suitable for the wall or ceiling type.
- If the fire-resistant damper is installed during the assembly of the wall/ceiling, the annular gap dimensions can be smaller than specified.
- The mortar bed depth must be designed according to the minimum wall or ceiling thickness and may not be less than this thickness.
- The mortar lining must be executed such that it is permanent. The information given by the mortar manufacturer must be observed.

INSTALLATION IN SOLID WALLS

- Installation in solid walls (shaft walls, shafts, ducts and fire walls) made of, for example, concrete; masonry according to EN 1996 or DIN 1053; solid plaster board walls according to EN 12859; apparent density $\geq 450 \text{ kg/m}^3$ and wall thickness $W \geq 100 \text{ mm}$.

Wet installation of a fire damper, complete mortar lining

- The distance of the fire-resistant dampers from one another must be at least 70 mm.
- The minimum distance to adjacent components (wall/ceiling) is 40 mm.
- Further information to be considered: see page 7 Minimum distances or projecting ends.

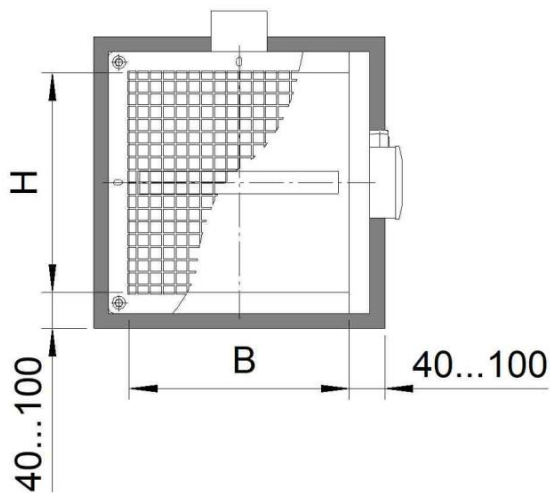


Figure 3: Annular gap dimensions for complete mortar lining in solid walls

Wet installation of two fire dampers at a reduced distance or "flange-to-flange"

Installation of max. two BKA-Üs next to each other in an installation opening in solid walls at a reduced distance or "flange-to-flange". All annular gaps have to be filled with mortar (version 1). Alternatively, at a distance of 80 mm from each other, mineral wool (2x40 mm; non-flammable (EN 13501-1), melting point $\geq 1000^\circ\text{C}$, $\rho \geq 150 \text{ kg/m}^3$) can be used as an annular gap seal between the two BKA-Ü (version 2). The mineral wool must be applied over the entire length.

- The minimum distance to adjacent components (wall/ceiling) is 40 mm.
- Further information to be considered: see page 7 Minimum distances or projecting ends.
- The minimum distance to other fire dampers is 200 mm.

Installation next to each other

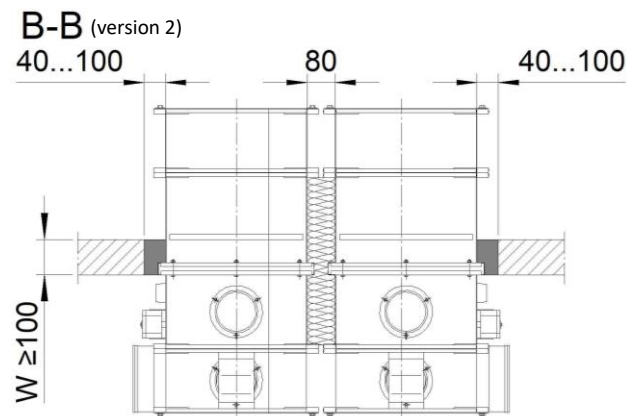
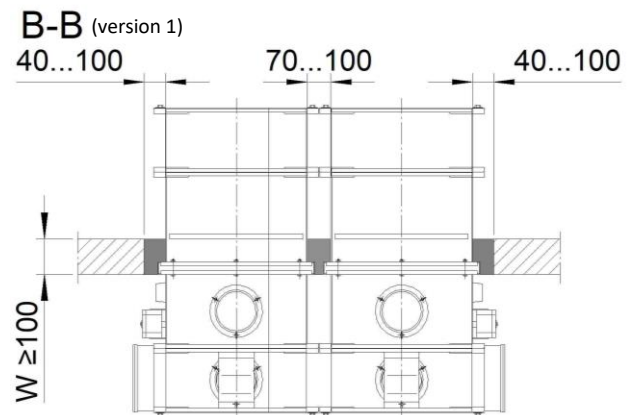
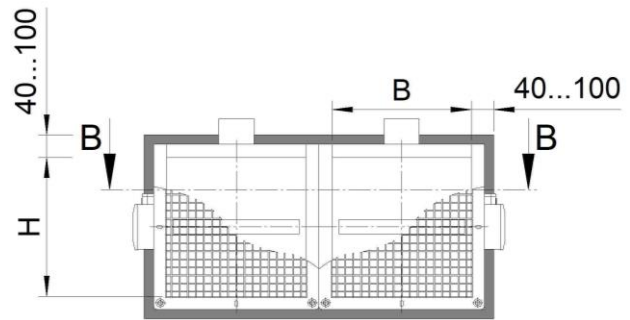


Figure 4: Installation in solid walls at a reduced distance or "flange-to-flange", next to each other

Wet installation with partial mortar lining

- Installation on adjacent walls with appropriate annular gap sizes ≤ 50 mm. The annular gap must be closed with non-flammable mineral wool (EN13501-1, apparent density ≥ 150 kg/m³, melting point ≥ 1000 °C) across the entire housing length of BKA-EN. Apply the mortar up to the adjacent wall.

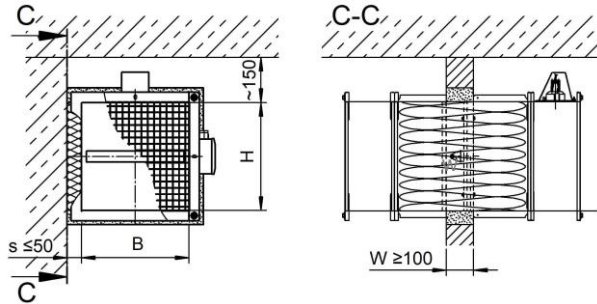


Figure 5: Installation of the damper (partial mortar lining) in solid walls

Dry installation with soft seal

- BKA-Ü must be permanently suspended from the solid ceiling on both sides of the wall (see page 24). Suspension angle (pos. 38) for BKA-Ü is available as accessory at an extra charge.
- With an annular gap of 50 - 100 mm, the BKA-Ü must be installed together with the firestop boards. Mounting of the firestop boards after installation of the BKA-Ü (installation dimension 210 mm) is possible starting with an annular gap of about 100 mm.
- For each BKA-Ü, a separate installation opening must be provided.
- The distance between the fire-resistant dampers installed next to each other must be at least 200 mm.
- The minimum distance to adjacent components (wall/ceiling) is 75 mm.
- Further information to be considered: see page 7 Minimum distances or projecting ends

Soft seal system

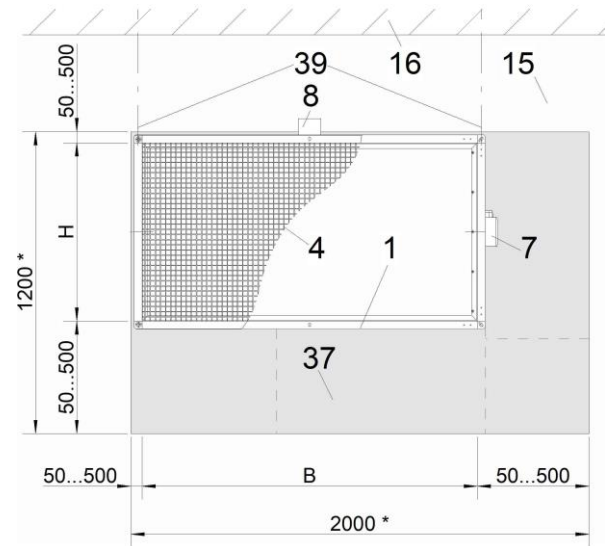
Permissible soft seal system (provided on site):

Manufacturer Hilti

- Firestop boards CFS-CT B 1S 140/50
- Firestop coating CFS-CT
- Firestop boards CP 673 PF
- Firestop coating CP 673
- Firestop sealant CFS-S ACR

In general, the specifications and processing guidelines of the soft seal manufacturer (in particular the maximum seal dimensions) must be observed.

Dimensions of the min./max. annular gap



*) \triangleq max. seal dimensions according to the manufacturer's specifications Hilti

Figure 6: Example of installation in soft seal system

Sectional view for wall thickness = 100 mm

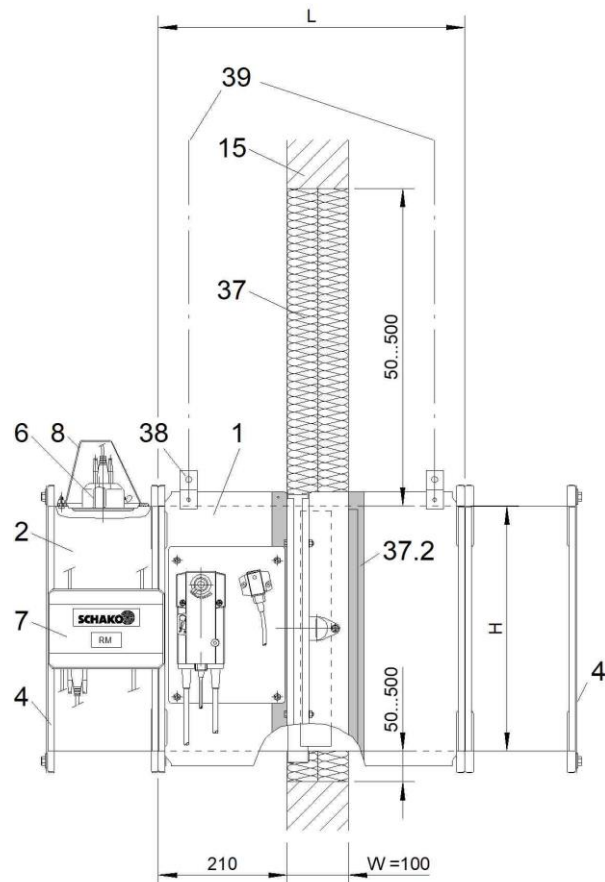


Figure 7: Installation in solid wall (wall thickness = 100 mm)

Sectional view for wall thickness > 100 mm

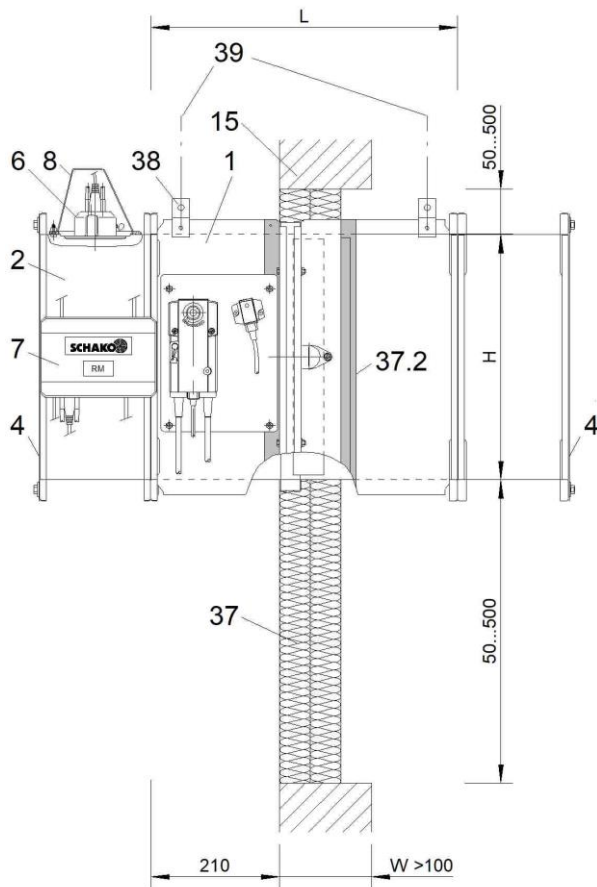


Figure 8: Installation in solid wall (wall thickness > 100 mm)

- 1 Fire-resistant damper model BKA-Ü
- 15 Solid wall
- 16 Solid ceiling
- 37 Hilti soft seal system (ETA-11/0429):
 - 37.1 Firestop boards CFS-CT B 1S 140/50 or CP 673 PF
 - 37.2 Firestop coating CFS-CT or CP 673
(circumferential width ≥ 25 mm, $t \geq 2.5$ mm)
 - 37.3 Firestop sealant CFS-S ACR
- 38 Suspension angle
(Accessories at an extra charge: 1 set = 4 units/BKA-Ü)
- 39 Suspension (provided on site)

Installation procedure

- The BKA-Ü (pos. 1) is installed in the intended installation opening after the construction of the wall.
- The annular gap between the BKA-Ü housing and the reveal of the installation opening must be min. 50 mm and max. 500 mm. BKA-Ü must be placed in the installation opening in accordance with the annular gap sizes mentioned above. The installation dimension of 210 mm on the operating side has to be complied with. The annular gap must be sealed with two layers of firestop boards (pos. 37.1) of the Hilti soft seal system (see p. 9, among others). With an annular gap of 50 - 100 mm, the BKA-Ü must be installed together with the firestop boards. The firestop boards have to be cut precisely with accurate contours so that they are positioned tightly over the entire surface. All gaps (between the firestop boards and the reveal of the installation opening, between the firestop boards and the BKA-Ü) as well as the face area and the cut surface of the boards themselves must be sealed with the firestop sealant (pos. 37.3) and sealed. In general, the specifications and processing guidelines of the soft seal manufacturer must be observed.
- BKA-Ü is suspended from the operating and non-operating side by means of four angles (pos. 38). The angles are available as accessories (at an extra charge) and are mounted on site. For further information on the suspension, see page 24.
- Once the mounting of the soft seal system is completed, the firestop coating (pos. 37.2) must be applied circumferentially with a width of ≥ 25 mm and a thickness of ≥ 2.5 mm on the operating and non-operating side of the BKA-Ü housing.

INSTALLATION IN SOLID CEILINGS

- Installation in solid ceilings made, for example, of concrete, aerated concrete, apparent density $\geq 500 \text{ kg/m}^3$ and ceiling thickness $D \geq 125 \text{ mm}$.

Wet installation of a fire damper, complete mortar lining

- The distance of the fire dampers from one another must be at least 70 mm.
- The minimum distance from adjacent components (wall) is at least 40 mm.
- Further information to be considered: see page 7 Minimum distances or projecting ends.

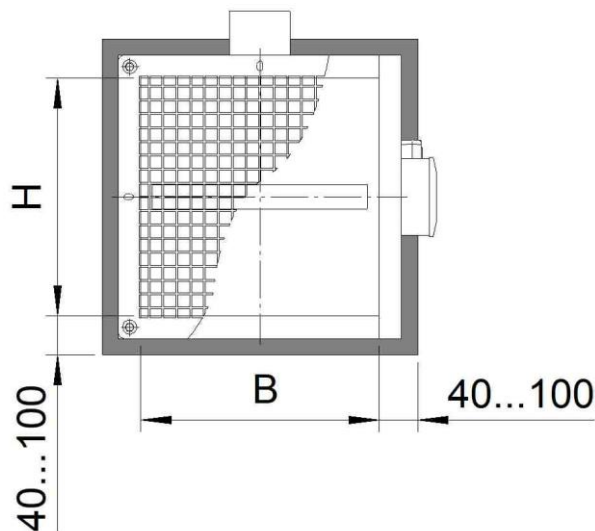


Figure 9: Annular gap dimensions for complete mortar lining in solid ceilings

Installation at a reduced distance "flange to flange"

Installation of max. 2 BKA-Üs next to each other in an installation opening in solid ceilings at a reduced distance "flange-to-flange". All annular gaps have to be filled with mortar.

- The minimum distance to adjacent components (wall/ceiling) is 40 mm.
- Further information to be considered: see page 7 Minimum distances or projecting ends.

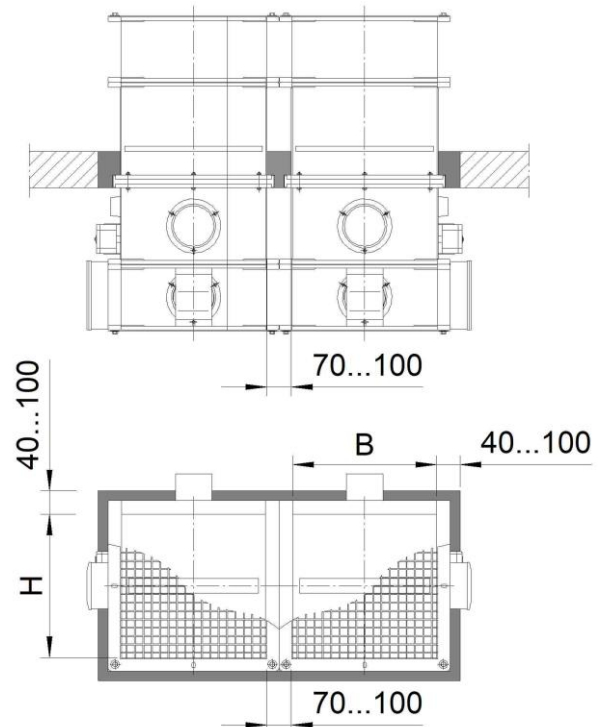


Figure 10: Installation in solid ceilings at a reduced distance "flange-to-flange"

Wet installation with concrete base

- Construction of a circumferential, straight reinforced concrete base (concrete grade: C20/25; concrete cover ≥ 35 mm; reinforcement: concrete steel BSt500S or concrete steel mats B500A). The base must be constructed circumferentially with a wall thickness of at least 100 mm, measured from the housing of BKA-Ü. The height of the base must be maintained up to the prescribed installation dimension (210 mm). The maximum base height is ≤ 550 mm.

The damper blade clearance of the installed BKA-Ü must be guaranteed. Make sure that there is nothing left that may affect the function of the new fire damper.

During the formation of the concrete base in solid ceilings, in addition to the constructive anti-crack reinforcement, it must be ensured that the concrete base is applied directly to the reinforced concrete ceiling or connected to the raw ceiling.

Any separating layers (floor coverings, seals, insulations, floating screeds, etc.) must be removed or must not be present in this area.

During the construction of the concrete base, make sure that the housing of BKA-Ü is not pressed inwards (reinforcement).

- The clearance between individual BKA-Üs (max. 2) must be at least 70 mm.
- If an adjacent solid component (wall) is closer than 100 mm to the housing of BKA-Ü, the existing gap to this component must be filled as described above. This option becomes available if the adjacent component has F90 characteristics.

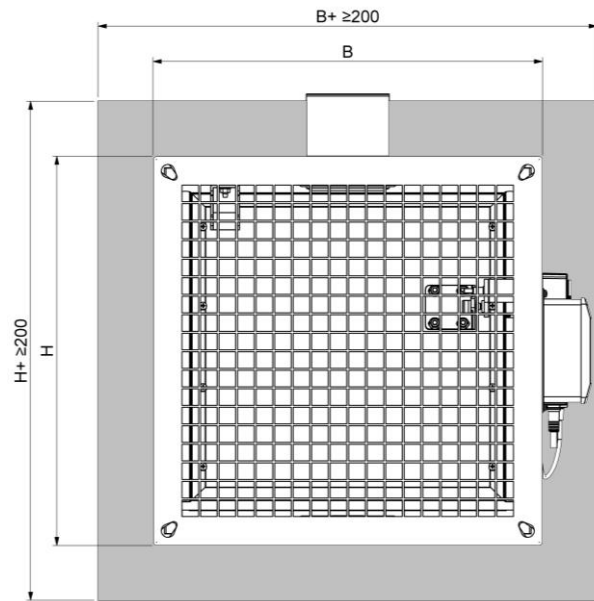


Figure 11: Installation in solid ceilings with concrete base, top view

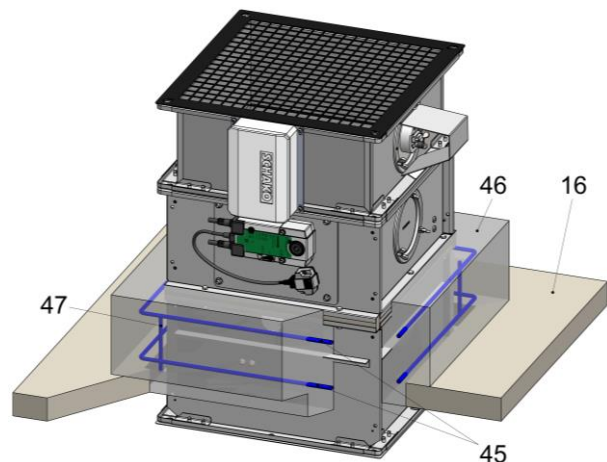


Figure 12: Installation in solid ceilings with concrete base

45 Horizontal reinforcement e.g. bracket ($\varnothing 8$; $e \leq 150$ mm)

46 Concrete base (concrete C20/25)

47 Splice bars ($\varnothing 8$; $e \leq 500$ mm; at least 4 pieces/base)

16 Solid ceiling (ceiling thickness $D \geq 125$ mm; $\rho \geq 500$ kg/m³)

**Reinforcement of the reinforced concrete upstand
(Concrete cover ≥ 35 mm; Note: Mounting reinforcement not drawn):**

- Horizontal reinforcement (pos. 45):
closed bracket $\varnothing 8$, $e \leq 150$ mm or steel bar with appropriate overlap lengths or equivalent mesh reinforcement (Q335A); arranged in centre of base (pos. 46).

- Connecting reinforcement to the reinforced concrete ceiling, if **an** annular gap is present in the immediate ceiling opening area, it must be sealed with concrete in the appropriate grade:

$\varnothing 8$, $e \leq 500$ mm (splice bar in ceiling, pos. 47) centre of base (=/=), but at least 4 pieces/base (arranged in the corner areas of the base).

- Connecting reinforcement to the reinforced concrete ceiling, if **no** annular gap is present in the immediate ceiling opening area.

$\varnothing 8$, $e \leq 500$ mm (splice bar in ceiling, pos. 47) centre of base (=/=), but at least 4 pieces/base (arranged in the corner areas of the base); to be glued into ceiling using, for example, Hilti HIT HY 200.

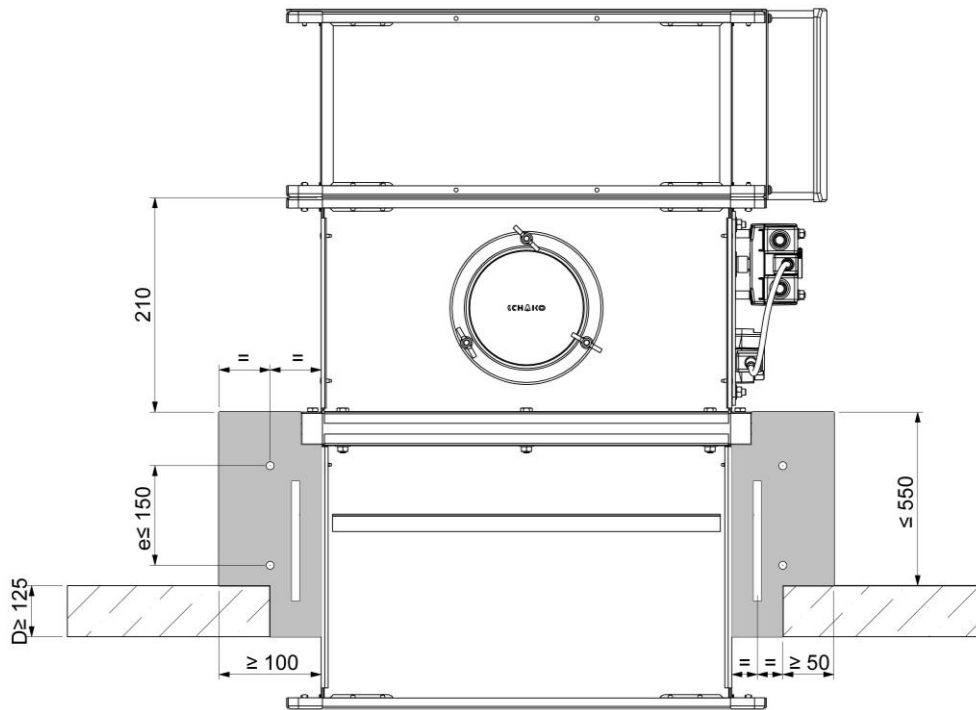


Figure 13: Installation in solid ceilings with concrete base, section

INSTALLATION IN LIGHTWEIGHT PARTITION WALLS WITH METAL POSTS

LIGHTWEIGHT PARTITION WALLS WITH PANNELLING ON BOTH SIDES AND WALL THICKNESS $W \geq 100$ MM

- Installation in lightweight partition walls with metal posts and panelling on both sides (gypsum-bonded wall boards; wall thickness ≥ 100 mm) according to classification to EN 13501-2 or comparable national standards.
- Installation and mounting aids on site must be removed.

Wet installation of a fire damper, complete mortar lining

- The minimum distance of BKA-Ü from one another must be at least 200 mm.
- The minimum distance to adjacent components must be (due to the design) at least 90 mm from the wall and at least 80 mm from the ceiling. The actual minimum distance may slightly differ from the distances mentioned therein and must be executed and adapted as a function of the wall connection type.
- Further information to be considered: see page 7 Minimum distances or projecting ends.

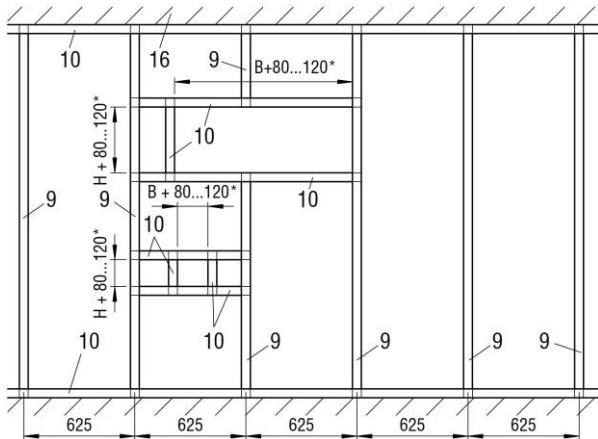


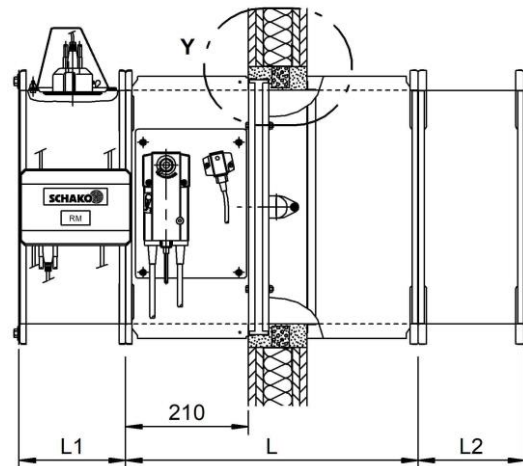
Figure 14: Metal posts with required exchange parts for wet installation (dimensions without reveal)

*When using a reveal (pos. 20; circumferential 12.5 mm), the opening dimensions (see Figure 14) must be increased by 25 mm.

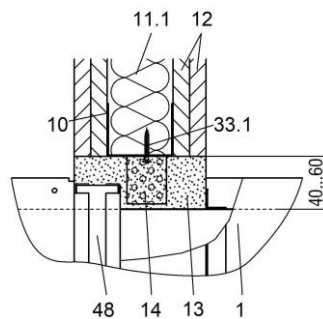
Mounting information:

In the overlap area of the exchangeable profiles, they must be riveted, crimped or screwed once on both sides. These connections are only for fastening the individual metal profiles during mounting.

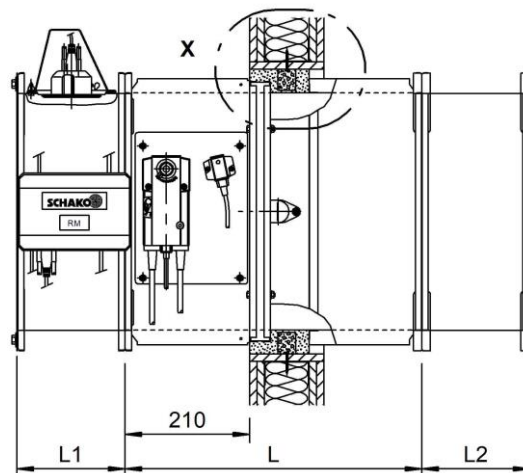
Sectional view of lightweight partition wall without reveal



Detail Y



Sectional view of lightweight partition wall with reveal



Detail X

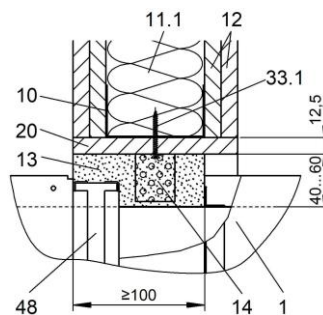


Figure 15: Wet installation in lightweight partition wall

Installation procedure

- Mount the metal posts and the wall in accordance with the specifications of the wall manufacturer and the required exchange parts as shown on Figure 14.
 - Provide a recess for the wet installation of BKA-Ü (pos. 1)
 - From B > 800 mm (with horizontal damper blade axle), on both B sides of the exchange profiles, 2 bent perforated plates each (t ≥ 0.5 mm; width x length = 40 x 70 mm), must be fastened as mortar anchor (pos. 14). They must be screwed to the metal profiles at the wall centre, using one dry-wall screw for each plate.
 - Insert the BKA-Ü into the wall recess (operating side - observe the installation dimension of 210 mm). Average out the circumferential annular gap evenly between the wall and BKA-Ü. Mounting of BKA-Ü with the help of mounting suspensions etc.
 - Insert mortar (pos. 13) into the circumferential gap of 40 mm between the BKA-Ü housing and the circumferential metal profiles (pos. 10). If reveals (pos. 20) are used, a mortar bed depth of 100 mm is sufficient. When using reveals, the exchange parts must be adjusted to the recess dimensions.
- 1 Fire-resistant damper model BKA-Ü
 - 9 Profile CW 50/50/06 (with wall thickness = 100 mm, for larger wall thicknesses, the profiles must be adapted accordingly)
 - 10 Profile UW 50/40/06 (with wall thickness = 100 mm, for larger wall thicknesses, the profiles must be adapted accordingly)
 - 11.1 Mineral wool (according to the wall manufacturer's specifications)
 - 12 Panelling of the metal post wall made of gypsum-bonded wall boards
 - 13 Mortar
 - 14 From B>800 mm, 2 mortar anchors for each B side are required, for installation with horizontal damper blade axle (perforated plate t ≥ 0.5 mm; width x length = 40 x 70 mm; accessories at an extra charge).
 - 16 Solid ceiling
 - 20 Reveal, optional
 - 33.1 Dry-wall screws (-on site- e.g. ø 3.5 x 25 mm) same quantity as mortar anchors (pos. 14)
 - 48 Thermal insulation

Dry installation of the damper

- The dry installation must be carried out during the assembly of the wall.
- The minimum distance of BKA-Ü from one another must be at least 200 mm.
- The minimum distance to adjacent components must be (due to the design) at least 90 mm from the wall and at least 80 mm from the ceiling. The actual minimum distance may slightly differ from the distances mentioned therein and must be executed and adapted as a function of the wall connection type.
- Further information to be considered: see page 7 Minimum distances or projecting ends.

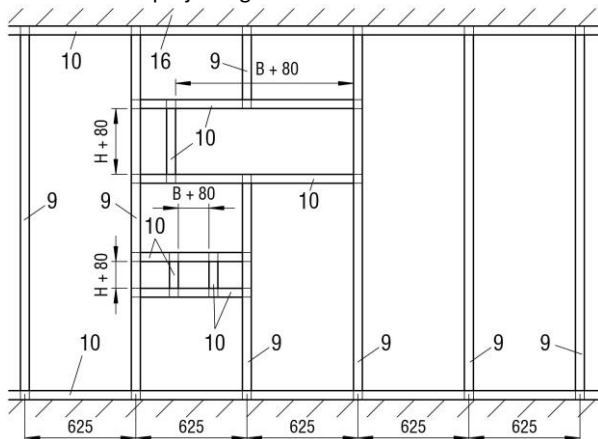
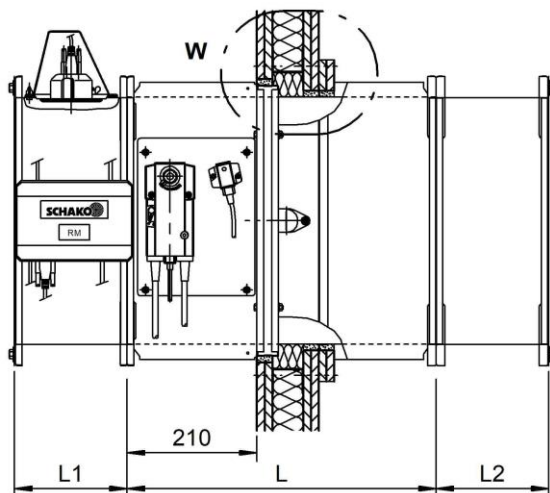


Figure 16: Metal stud frame with required replacement parts for dry installation

Sectional view of LPW



Detail W

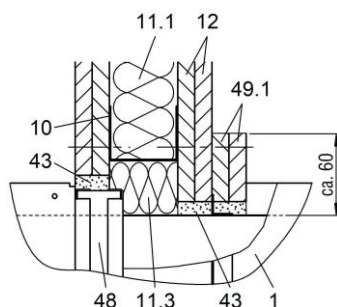


Figure 17: Dry installation in lightweight partition wall

Installation procedure

- Mount the metal posts and the wall in accordance with the specifications of the wall manufacturer and the required exchange parts as shown on Figure 14.
- Insert BKA-Ü (pos. 1) into the wall recess (operating side - observe the installation dimension of 210 mm). Average out the circumferential annular gap evenly between the wall and BKA-Ü. Mounting of BKA-Ü with the help of mounting suspensions etc.
- Insert mineral wool (pos. 11.3) (non-flammable according to EN 13501-1, packing density 80 kg/m³, melting point ≥ 1000 °C) into the circumferential gap 40 mm in width between the housing of BKA-Ü and the circumferential metal profiles (pos. 10).
- Mount the wall panellings on both sides (pos. 12) and the doublings on the non-operating side (pos. 49.1). The connection and butt joints must be filled with the jointing material of the wall (pos. 43; max. gap width 5 mm, perform jointing operation as part of assembly).

- 1 Fire-resistant damper model BKA-Ü
- 9 Profile CW 50/50/06 (with wall thickness = 100 mm, for larger wall thicknesses, the profiles must be adapted accordingly)
- 10 Profile UW 50/40/06 (with wall thickness = 100 mm, for larger wall thicknesses, the profiles must be adapted accordingly)
- 11.1 Mineral wool (according to the wall manufacturer's specifications)
- 11.3 Mineral wool, (non-flammable according to EN13501-1, apparent density approx. 80 kg/m³, melting point ≥ 1000 °C, thickness 40 mm)
- 12 Panelling of the metal post wall made of gypsum-bonded wall boards
- 16 Solid ceiling
- 43 Joint filling with jointing material of the wall
- 48 Thermal insulation
- 49.1 Doubling (plaster boards GKF, 2 x d=12.5 mm)
 - First doubling, fastening: Dry-wall screws e.g. TN 3.5x55, a ≤ 250 mm, but at least 2 screws per side; connection and butt joints of the doublings must be filled with the wall material.
 - Second doubling, fastening: Dry-wall screws e.g. TN 4.5x70, a ≤ 250 mm, but at least 2 screws per side; connection and butt joints of the doublings must be filled with the wall material.

Dry installation with installation frame type ER-A1

- The clearance between individual BKA-Üs must be at least 200 mm. The installation must be carried out in separate installation openings. Fixing lugs (W=30 mm) may have to be offset by at least 15 mm.
- The minimum distance to adjacent components must be (due to the construction) at least 110 mm (wall/ceiling). The actual minimum distance may slightly differ from the distances mentioned therein and must be executed and adapted as a function of the wall connection type.
- Further information to be considered: see page 7 Minimum distances or projecting ends.
- The ER-A1 installation frame is to be ordered as an accessory (extra charge) – supplied loose or factory-mounted.

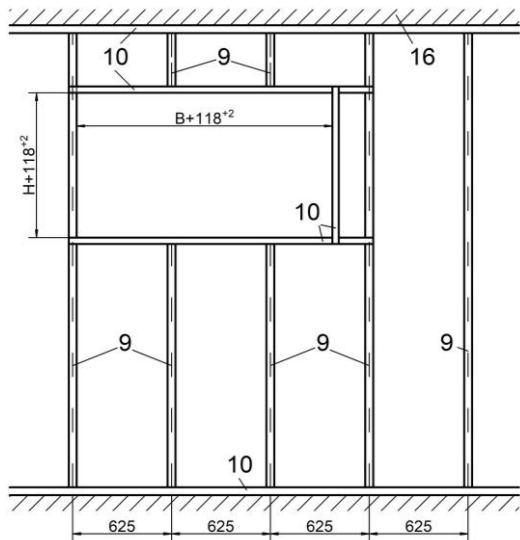


Figure 18: Metal stud frame with required replacement parts at $W \leq 125$ mm and 1 layer of circumferential reveal (12.5 mm) for BKA-Ü with ER-A1 installation frame

Mounting information:

In the overlap area of the exchangeable profiles, they must be riveted, crimped or screwed once on both sides. These connections are only for fastening the individual metal profiles during mounting.

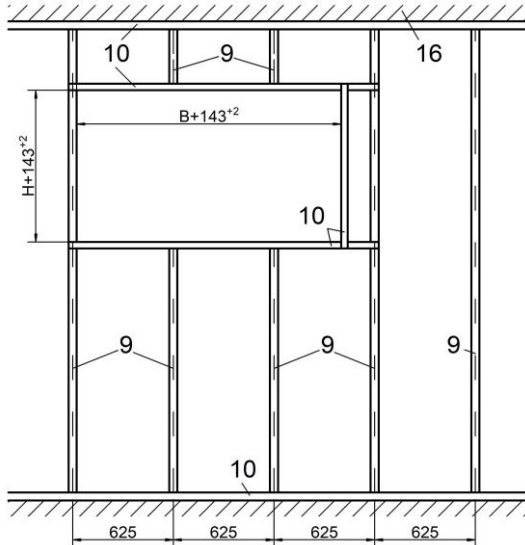


Figure 19: Metal stud frame with required replacement parts at $W > 125$ mm and 2 layers of circumferential reveal (2x12.5 mm) for BKA-Ü with ER-A1 installation frame

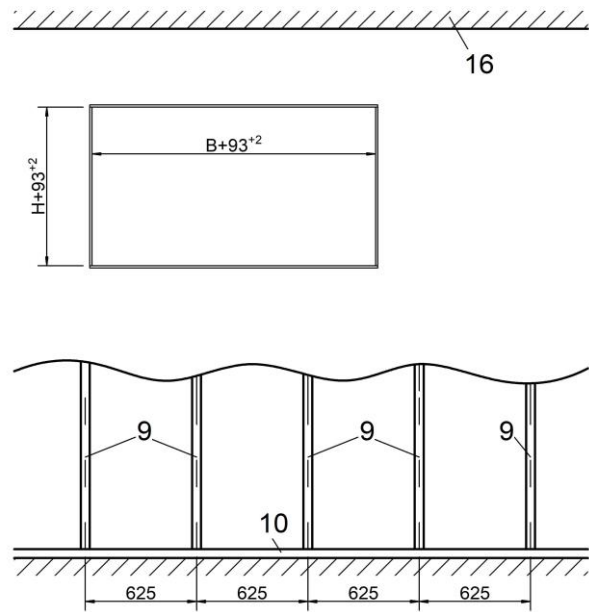


Figure 20: Representation of the internal dimension for installation of the BKA-Ü with ER-A1 installation frame

Dry installation (with installation frame type ER-A1)

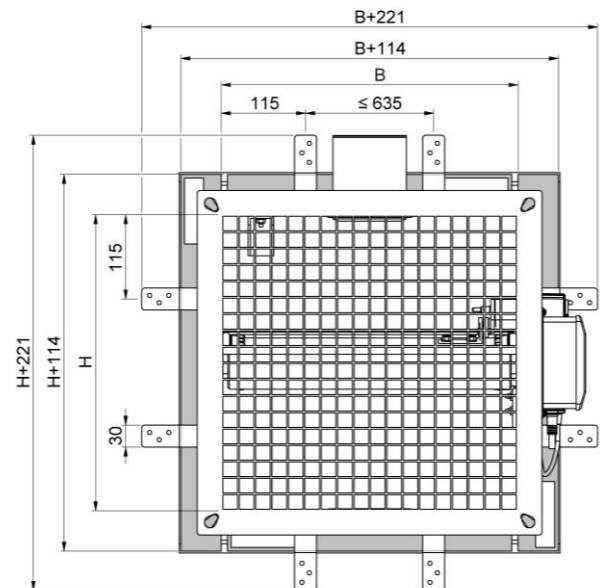


Figure 21: BKA-Ü with installation frame type ER-A1 and shown fixing lugs (in the figure: width (B) x height (H) 400 x 400 mm)

Examples of number and positioning:

Number of fixing lugs per side dimension [mm]	
1 fixing lug/side	< 400
2 fixing lugs/side	≥ 400 to ≤ 865
3 fixing lugs/side	> 865

Table 5: Number of fixing lugs per side for ER-A1

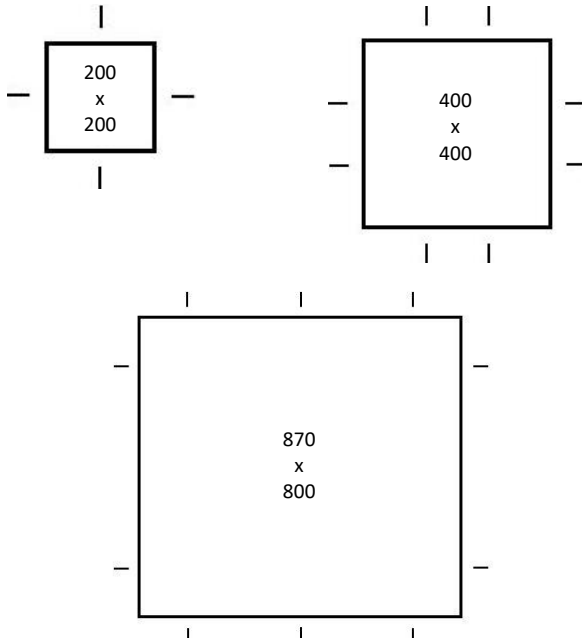


Figure 22: Examples of fixing lug number and positioning for installation frame type ER-A1

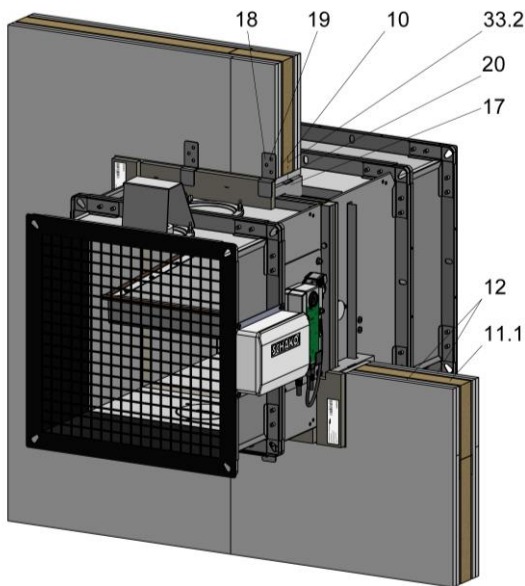


Figure 23: BKA-Ü with installation frame type ER-A1 in lightweight partition wall

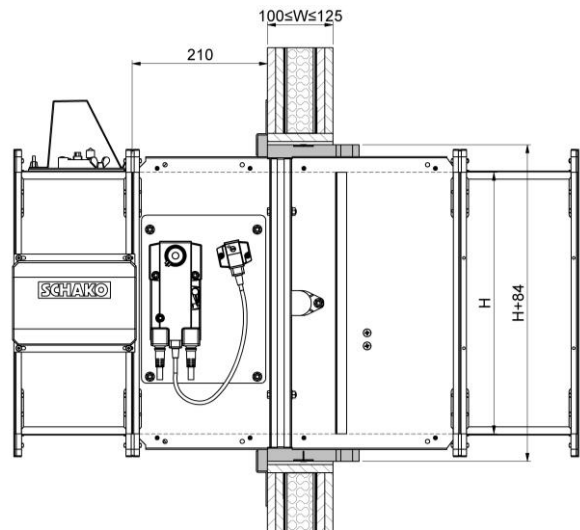


Figure 24: Dry installation in lightweight partition wall (F90) $W \leq 125$, with ER-A1 installation frame

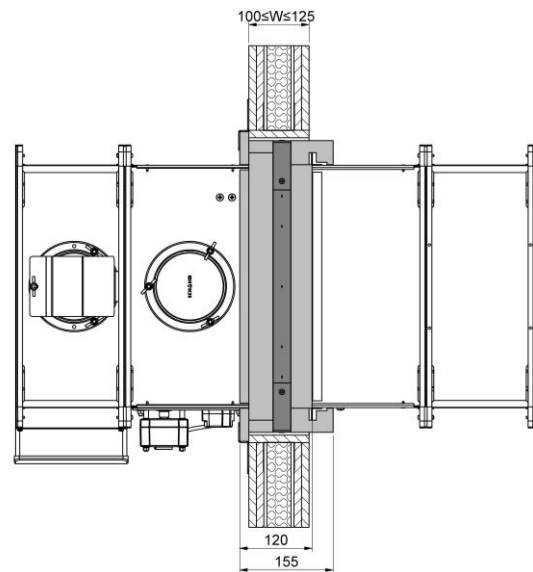
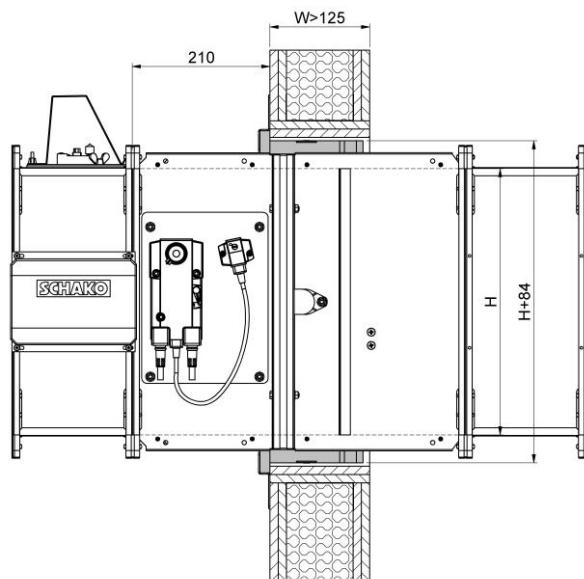
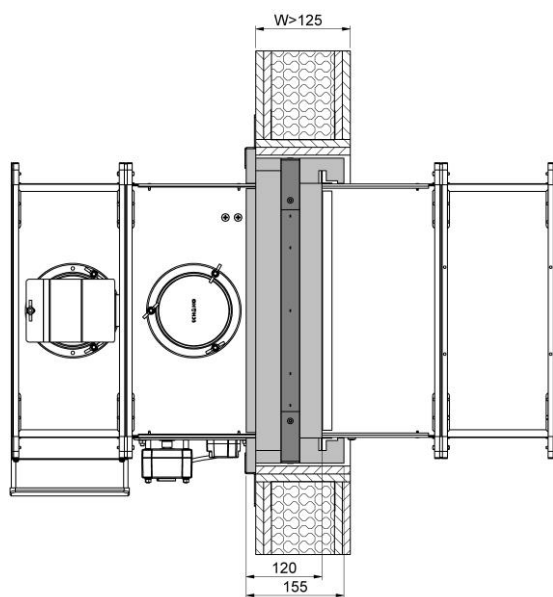


Figure 25: Dry installation in lightweight partition wall (F90) $W \leq 125$, with ER-A1 installation frame



**Figure 26: Dry installation in lightweight partition wall (F90)
W > 125, with ER-A1 installation frame**



**Figure 27: Dry installation in lightweight partition wall (F90)
W > 125, with ER-A1 installation frame**

Installation procedure

- Prepare the metal posts and the wall in accordance with the specifications of the wall manufacturer and the required exchange parts as shown on Figure 18 or Figure 19, page 17. Leave a recess for installing the BKA-Ü with installation frame type ER-A1 (pos. 17).
 - Construct a circumferential reveal (pos. 20) with 12.5 mm or 2 x 12.5 mm plasterboards and screw them centrally to the circumferential metal profile frame (pos. 33.2 - fastening: e.g. drywall screws \varnothing 3.5 x 25 mm or \varnothing 3.5 x 45 mm; screw distance \leq 250 mm, but at least 2 screws per side).
 - Insert the BKA-Ü into the wall recess (dimensions: B+93⁺² mm x H+93⁺² mm), so that the stop of the installation frame type ER-A1 contacts the wall (operating side – observe the installation dimensions of 210 mm up to the front edge of the wall, see Figure 24). Average out the circumferential annular gap evenly between the wall recess and the installation frame type ER-A1. Mounting of BKA-Ü with the help of mounting suspensions etc.
 - BKA-Ü is fastened on all sides to the supporting structure (exchange profiles – pos. 10) using the appropriate number of fixing lugs (pos. 18; see table 5). The fixing lugs are fastened to the supporting structure using 2 drywall screws each (pos. 19 e.g. \varnothing 3.5x35 mm; adjust screw length to panelling thickness).
- 9 Profile CW 50/50/06 (with wall thickness = 100 mm, for larger wall thicknesses, the profiles must be adapted accordingly)
 - 10 Profile UW 50/40/06 (with wall thickness = 100 mm, for larger wall thicknesses, the profiles must be adapted accordingly)
 - 11.1 Mineral wool (according to the wall manufacturer's specifications)
 - 12 Panelling (on both sides) of the metal stud wall made of gypsum-bonded wall boards
 - 16 Solid ceiling
 - 17 ER-A1 installation frame (as accessory at an extra charge: supplied loose as a mounting kit or factory-assembled).
 - 17.1 + 17.3 B side Parts 1 and 2
 - 17.2 + 17.4 H side parts 1 and 2
 - 17.5 Countersunk head screw 4.5 x 20 mm (8 pieces)
 - 17.6 Corner angle ER-A1 (4 pieces)
 - 18 Fixing lugs (included in the scope of delivery of installation frame type ER-A1)
 - 19 Drywall screws (-on site- 2 x / fixing lug; e.g. \varnothing 3.5 x 35mm)
 - 20 Circumferential reveal (on site) screwed to metal stud profiles, depending on the wall thickness (12.5 mm GRP panels for wall thickness $W \leq 125$ mm / for $W > 125$ mm two layers of reveal (2 x 12.5 mm) are required)
 - 33.2 Drywall screws (-on site- for example, \varnothing 3.5 x 25mm; screw distance \leq 250 mm but at least 2 screws per side)

Dry installation with soft seal

- BKA-Ü must be permanently suspended from the solid ceiling on both sides of the wall (see page 24). Suspension angle (pos. 38) for BKA-Ü is available as accessory at an extra charge.
- With an annular gap of 50 - 100 mm, the BKA-Ü must be installed together with the firestop boards. Mounting of the firestop boards after installation of the BKA-Ü (installation dimension 210 mm) is possible starting with an annular gap of about 100 mm.
- For each BKA-Ü, a separate installation opening must be provided.
- The distance from one BKA-Ü to another must be at least 200 mm.
- Depending on the wall thickness, the minimal distance to adjacent components is, due to the design, at least approx. 103/115 mm from the ceiling and approx. 113/125 mm from the wall. The actual minimum distance may slightly differ from the distances mentioned therein and must be executed and adapted as a function of the wall connection type.
- Further information to be considered: see page 7 Minimum distances or projecting ends.

Soft seal system

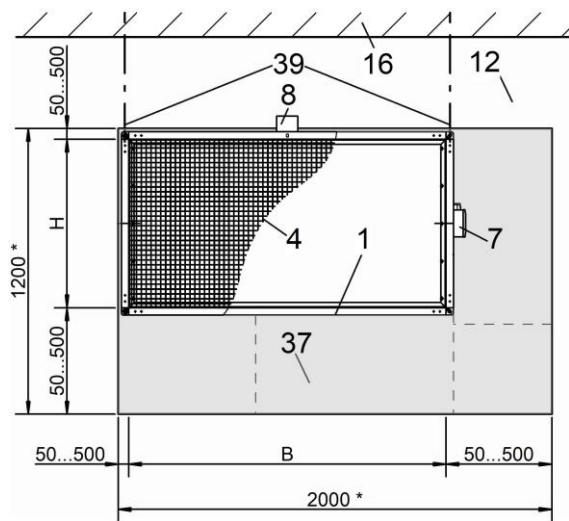
Permissible soft seal system (provided on site):

Manufacturer Hilti

- Firestop boards CFS-CT B 1S 140/50
- Firestop coating CFS-CT
- Firestop boards CP 673 PF
- Firestop coating CP 673
- Firestop sealant CFS-S ACR

In general, the specifications and processing guidelines of the soft seal manufacturer (in particular the maximum seal dimensions) must be observed.

Dimensions of the min./max. annular gap

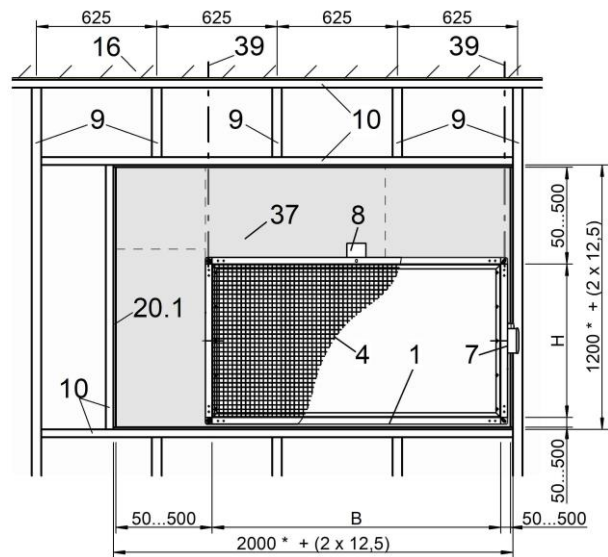


*) \triangleq max. seal dimensions according to the manufacturer's specifications Hilti

Figure 28: Example of installation in soft seal system

Construction subject to change
No return possible

Wall thickness = 100 mm



*) \triangleq max. seal dimensions according to the manufacturer's specifications Hilti

Figure 29: Metal stud frame plus required replacement parts (for wall thickness = 100 mm)

Mounting information:

In the overlap area of the exchangeable profiles, they must be riveted, crimped or screwed once on both sides. These connections are only for fastening the individual metal profiles during mounting.

Sectional view for wall thickness = 100 mm

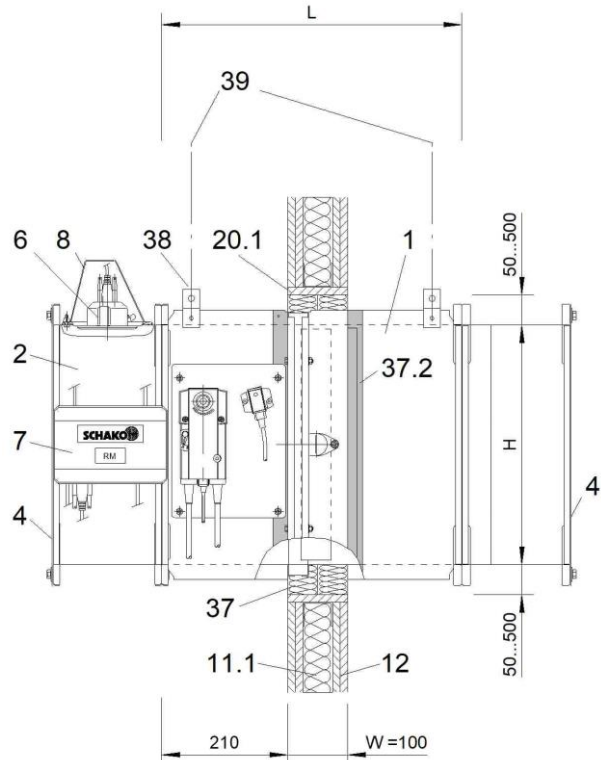
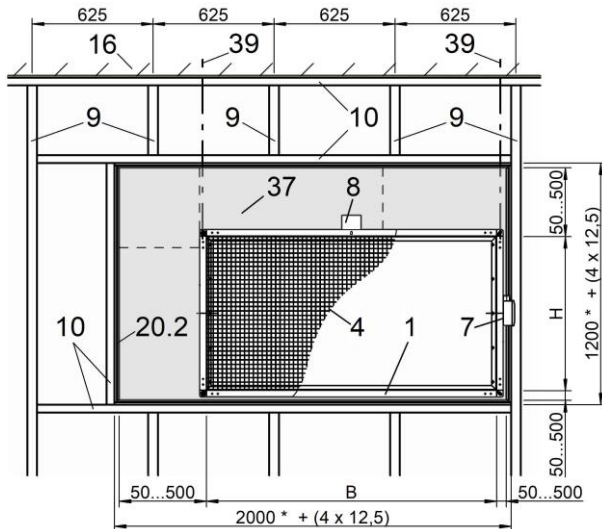


Figure 30: Installation in metal stud wall (wall thickness = 100 mm)

Wall thickness > 100 mm


*) \triangleq max. seal dimensions according to the manufacturer's specifications Hilti

Figure 31: Metal stud frame plus required replacement parts (for wall thickness > 100 mm)

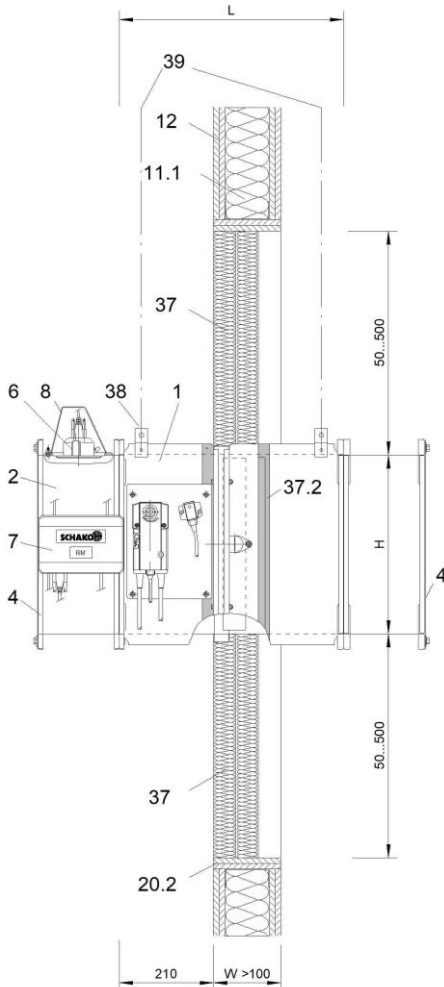
Sectional view for wall thickness > 100 mm


Figure 32: Installation in metal stud wall (wall thickness > 100 mm)

Installation procedure

- The BKA-Ü (pos. 1) is installed in the intended installation opening after the construction of the wall.
- The annular gap between the BKA-Ü housing and the reveal of the installation opening must be min. 50 mm and max. 500 mm. BKA-Ü must be placed in the installation opening in accordance with the annular gap sizes mentioned above. The installation dimension of 210 mm on the operating side has to be complied with. The annular gap must be sealed with two layers of firestop boards (pos. 37.1) of the Hilti soft seal system (see p. 20, among others). With an annular gap of 50 - 100 mm, the BKA-Ü must be installed together with the firestop boards. The firestop boards have to be cut precisely with accurate contours so that they are positioned tightly over the entire surface. All gaps (between the firestop boards and the reveal of the installation opening, between the firestop boards and the BKA-Ü) as well as the face area and the cut surface of the boards themselves must be covered with the firestop sealant (pos. 37.3) and sealed. In general, the specifications and processing guidelines of the soft seal manufacturer must be observed.
- BKA-Ü is suspended from the operating and non-operating side by means of four angles (pos. 38). The angles are available as accessories (at an extra charge) and are mounted on site. For further information on the suspension, see page 24.
- Once the mounting of the soft seal system is completed, the firestop coating (pos. 37.2) must be applied circumferentially with a width of ≥ 25 mm and a thickness of ≥ 2.5 mm on the operating and non-operating side of the BKA-Ü housing.

1 Fire-resistant damper model BKA-Ü

9 Profile CW 50/50/06 (for wall thickness = 100 mm; for larger wall thicknesses, the profiles must be adapted accordingly)

10 Profile UW 50/40/06 (for wall thickness = 100 mm; for larger wall thicknesses, the profiles must be adapted accordingly)

11.1 Mineral wool (according to the wall manufacturer's specifications)

12 Panelling of the metal post wall (on both sides) made of gypsum-bonded wall boards

16 Solid ceiling

20 Circumferential reveal (-on site-) screwed to metal stud profiles, depending on the wall thickness,

20.1 Reveal 1 x 12.5 mm (wall thickness = 100 mm)

20.2 Reveal according to the number of boards and to the wall the wall (wall thickness > 100 mm)

37 Hilti soft seal system (ETA-11/0429)

37.1 Firestop boards CFS-CT B 1S 140/50 or CP 673 PF

37.2 Firestop coating CFS-CT or CP 673

(circumferential width ≥ 25 mm, $t \geq 2.5$ mm)

37.3 Firestop sealant CFS-S ACR

38 Suspension angle

(Accessories at an extra charge: 1 set = 4 units/BKA-Ü)

39 Suspension (provided on site)

LIGHTWEIGHT PARTITION WALLS (F30/F60) WITH PANELLING ON BOTH SIDES AND WALL THICKNESS $W \geq 75$ MM

- Installation in lightweight partition walls with metal posts and panelling on both sides (gypsum-bonded wall boards; wall thickness ≥ 75 mm) according to classification to EN 13501-2 or comparable national standards.
- Installation and mounting aids on site must be removed.

Dry installation of the damper

- The dry installation must be carried out during the assembly of the wall.
- The minimum distance of BKA-Ü from one another must be at least 200 mm.
- The minimum distance to adjacent components is at least 80 mm from the ceiling and at least 90 mm from the wall. The actual minimum distance may slightly differ from the distances mentioned therein and must be executed and adapted as a function of the wall connection type.
- Further information to be considered: see page 7 Minimum distances or projecting ends.

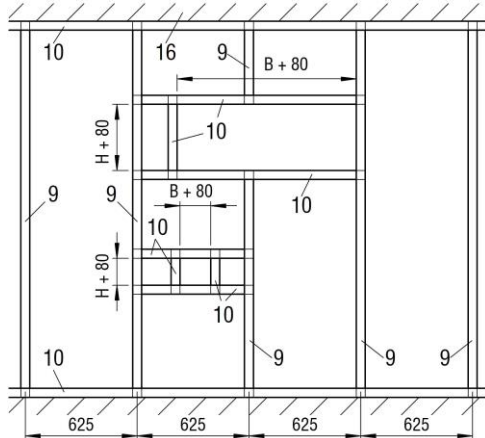


Figure 33: Metal post with required exchange parts for dry installation (F30/F60)

Mounting information:

In the overlap area of the exchangeable profiles, they must be riveted, crimped or screwed once on both sides. These connections are only for fastening the individual metal profiles during mounting.

Installation procedure

- Mount the metal posts and the wall in accordance with the specifications of the wall manufacturer and the required exchange parts as shown on Figure 33.
- Insert BKA-Ü (pos. 1) into the wall recess (operating side - observe the installation dimension of 210 mm). Average out the circumferential annular gap evenly between the wall and BKA-Ü. Mounting of BKA-Ü with the help of mounting suspensions etc.
- Insert mineral wool (pos. 11.4) into the circumferential gap 40 mm in width between the BKA-Ü housing and the circumferential metal profiles (pos. 10).
- Mount the wall panellings on both sides (pos. 12) and the doublings on the non-operating side (pos. 49.4). The connection and butt joints must be filled with the jointing material of the wall (pos. 43; max. gap width 5 mm, perform jointing operation as part of assembly).

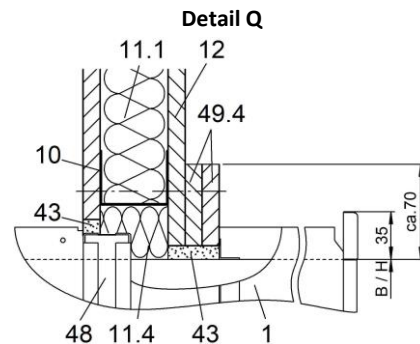
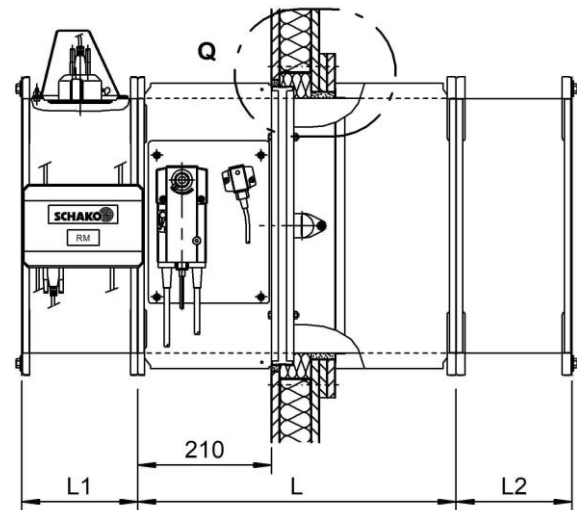


Figure 34: Wall panelling and double-board layers (lightweight partition wall)

- 1 Fire-resistant damper model BKA-Ü
- 9 Profile CW 50/50/06
- 10 Profile UW 50/40/06
- 11.1 Mineral wool, according to the wall manufacturer's specifications
- 11.4 Mineral wool, (non-flammable according to EN 13501-1, apparent density approx. 30 kg/m^3 , melting point ≥ 1000 °C, thickness 40 mm)
- 12 Panelling (on both sides) of the metal stud wall made of gypsum-bonded wall boards
- 16 Solid ceiling
- 43 Joint filling with jointing material of the wall
- 48 Thermal insulation
- 49.4 Doubling (plaster boards GKF, $2 \times d=12.5$ mm)
 - First doubling, fastening: Dry-wall screws, for example, TN 3.5x55, $a \leq 250$ mm, or at least 2 screws per side, connection or butt joints of the doubling must be filled with the jointing material of the wall.
 - Second doubling, fastening: dry-wall screws e.g. $\varnothing 3.9 \times 55$, $a \leq 250$ mm, but at least 2 screws per side, connection and butt joints of the doublings must be filled with the jointing material of the wall.

LIGHTWEIGHT PARTITION WALLS WITH PANELLING ON ONE SIDE AND WALL THICKNESS $W \geq 125$ MM

- Installation in lightweight partition walls (shaft walls) with metal stud frame and panelling on one side (gypsum-bonded wall boards; wall thickness ≥ 125 mm) as classified according to EN 13501-2 or comparable national standards.
- The specifications of the wall manufacturers regarding wall heights, widths and thicknesses must be taken into account.
- Installation and mounting aids on site must be removed.

Wet installation of the damper

- The minimum distance of BKA-Ü from one another must be at least 200 mm.
- The minimum distance to adjacent components (wall/ceiling) must be 90 mm (due to the design). The actual minimum distance may slightly differ from the distances mentioned therein and must be executed and adapted according to the wall connection type.
- Further information to be considered: see page 7 Minimum distances or projecting ends.

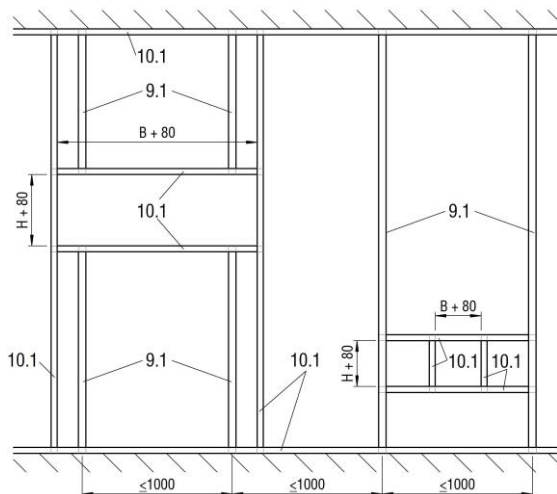


Figure 35: Metal posts with required exchange parts for wet installation (shaft wall)

Mounting information:

In the overlap area of the exchangeable profiles, they must be riveted, crimped or screwed once on both sides. These connections are purely for fastening the individual metal profiles during mounting.

- 1 Fire-resistant damper model BKA-Ü
- 9.1 Profile CW 75/50/06 - 150 profiles
- 10.1 Profile UW 75/40/06 - 150 profiles
- 12.1 Panelling (on one side 2x25) of the shaft wall made of gypsum-bonded wall boards. The specifications of the wall manufacturer must be observed.
- 16 Solid ceiling
- 43 Joint filling with jointing material of the wall
- 48 Thermal insulation
- 49.5 Doubling (gypsum-bonded wall boards, $d=25$ mm)
 - Fastening: Dry-wall screws e.g. $\varnothing 4.2 \times 90$, $a \leq 300$ mm, but at least 2 screws per side,
 -

connection and butt joints of the doubling must be filled with the wall material.

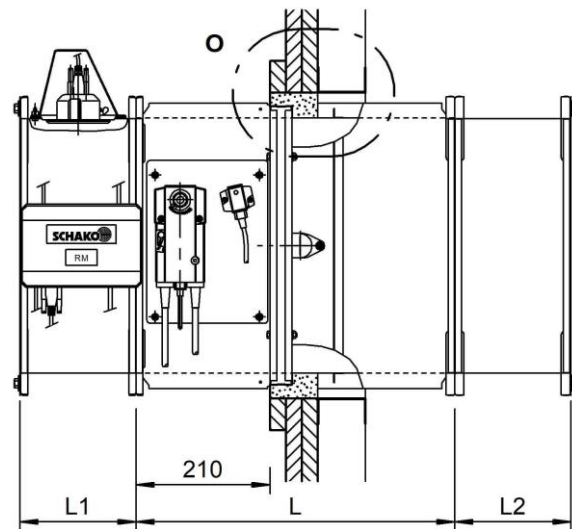


Figure 36: Wall panelling and double-board layers (shaft wall)

Installation procedure

- Mount the metal posts and the wall in accordance with the specifications of the wall manufacturer and the required spare parts as shown in Figure 35.
- Prepare the wall panelling (pos. 12.1) and doubling (pos. 49.5) as well as the installation opening for the installation of the BKA-Ü.
- If required, mount a filling stop on the non-operating side of BKA-Ü (pos. 1) (must not be screwed to the housing of BKA-Ü!). The filling stop is not required by fire protection regulations).
- Mounting of BKA-Ü with the help of mounting suspensions etc.
- Insert the BKA-Ü into the wall recess (operating side - observe the installation dimension of 210 mm for the doubling). Average out the annular gap evenly between the circumferential metal profiles of the wall and the housing of the BKA-Ü.
- Carry out the joint filling with the jointing material of the wall (pos. 43, gap completely filled with plaster). The connection and butt joints of the doubling must also be filled with the jointing material of the wall.

INSTALLATION INFORMATION

Connection of ventilation ducts

Fire-resistant dampers must not be connected to ventilation ducts in connection with ventilation systems in buildings. See section 1.2. of the general type approval (aBG) no. Z-6.50-2012. Fire-resistant dampers of special design and application can be used if, as part of ventilation planning, openings are required in fire-resistant inner walls or ceilings for air intake, they must be closed in the event of a fire.

SUSPENSION OF BKA-Ü

General

Dry installation with soft seal requires the fire-resistant dampers to be suspended on site. 4 threaded rods M10 shall be provided for each BKA-Ü. Threaded rods from a length of 1500 mm must be coated, for example according to the current version of the Promat® Manual, Design 478.

For static design of the suspension systems, the calculated tensile stress must be limited to 6 N/mm² and shear stress to 10 N/mm².

Suspension systems must be fastened to solid ceilings. For this purpose, fastening systems such as dowels, anchor rods, injection systems, etc., with proven fire resistance duration must be used and matched to the ceiling designs. Push-through mounting with fasteners above the solid ceilings is also possible, see Figure 37.

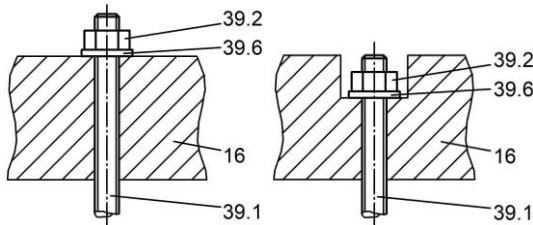


Figure 37: Push-through mounting (Detail A)

Suspension of BKA-Ü in case of dry installation with soft seal

The fire resistant damper must be permanently suspended from the solid ceiling on both sides of the wall. Suspension angle (pos. 38) for fire-resistant damper is available as accessory at an extra charge.

For both dowel mounting and push-through mounting, the threaded rods must be hinged to the solid ceiling.

To do so, components with fire protection certificate are required (e.g. sliding hangers, pendulum hangers).

In general, building regulations can differ from country to country; these are mandatory.

Angle fastening to the fire-resistant damper

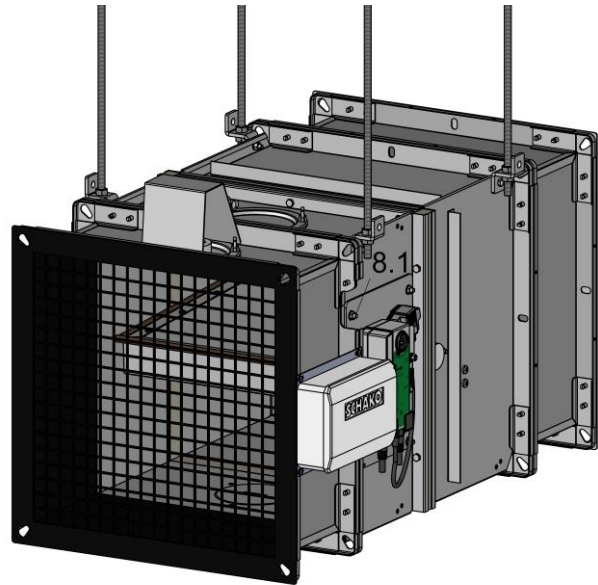


Figure 38: Fastening to the fire-resistant damper

With a height $H \leq 250$, the suspension angle must be fastened on the operating side to the threaded bolt of the actuator unit (pos. 8.1).

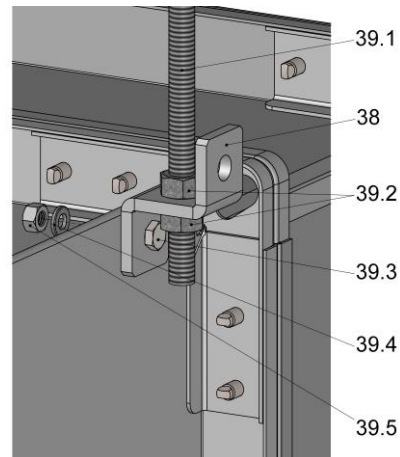


Figure 39: Fastening detail of suspension angle

8.1 Threaded bolt of actuator unit

38 Suspension angle

(Accessories at an extra charge: 1 set = 4 units/BKA-Ü)

39.1 M10 threaded rod

39.2 Hexagon nut e.g. ISO 4032 (suitable for pos. 39.1)

39.3 Hexagon head screw e.g. ISO 4017 - M6 x 20

39.4 Washer e.g. ISO 7090-6 (suitable for pos. 39.3)

39.5 Hexagon nut e.g. ISO 4032 - M6
(suitable for pos. 39.3)

TECHNICAL DATA

Free cross-section [m²]

		Width																							
		200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	900	1000	1100	1200	1300	1400	1500
Height	200	0.029	0.033	0.036	0.040	0.044	0.047	0.051	0.054	0.058	0.065	0.073	0.080	0.087	0.094	0.102	0.109	0.116	0.131	0.145	0.160	0.174	0.189	0.203	0.218
	225	0.034	0.038	0.043	0.047	0.051	0.055	0.060	0.064	0.068	0.077	0.085	0.094	0.102	0.111	0.119	0.128	0.136	0.153	0.170	0.187	0.204	0.221	0.238	0.255
	250	0.039	0.044	0.049	0.054	0.059	0.063	0.068	0.073	0.078	0.088	0.098	0.107	0.117	0.127	0.137	0.146	0.156	0.176	0.195	0.215	0.234	0.254	0.273	0.293
	275	0.044	0.050	0.055	0.061	0.066	0.072	0.077	0.083	0.088	0.099	0.110	0.121	0.132	0.143	0.154	0.165	0.176	0.198	0.220	0.242	0.264	0.286	0.308	0.330
	300	0.049	0.055	0.061	0.067	0.074	0.080	0.086	0.092	0.098	0.110	0.123	0.135	0.147	0.159	0.172	0.184	0.196	0.221	0.245	0.270	0.294	0.319	0.343	0.368
	325	0.054	0.061	0.068	0.074	0.081	0.088	0.095	0.101	0.108	0.122	0.135	0.149	0.162	0.176	0.189	0.203	0.216	0.243	0.270	0.297	0.324	0.351	0.378	0.405
	350	0.059	0.066	0.074	0.081	0.089	0.096	0.103	0.111	0.118	0.133	0.148	0.162	0.177	0.192	0.207	0.221	0.236	0.266	0.295	0.325	0.354	0.384	0.413	0.443
	375	0.064	0.072	0.080	0.088	0.096	0.104	0.112	0.120	0.128	0.144	0.160	0.176	0.192	0.208	0.224	0.240	0.256	0.288	0.320	0.352	0.384	0.416	0.448	0.480
	400	0.069	0.078	0.086	0.095	0.104	0.112	0.121	0.129	0.138	0.155	0.173	0.190	0.207	0.224	0.242	0.259	0.276	0.311	0.345	0.380	0.414	0.449	0.483	0.518
	450	0.079	0.089	0.099	0.109	0.119	0.128	0.138	0.148	0.158	0.178	0.198	0.217	0.237	0.257	0.277	0.296	0.316	0.356	0.395	0.435	0.474	0.514	0.553	0.593
	500	0.089	0.100	0.111	0.122	0.134	0.145	0.156	0.167	0.178	0.200	0.223	0.245	0.267	0.289	0.312	0.334	0.356	0.401	0.445	0.490	0.534	0.579	0.623	0.668
	550	0.099	0.111	0.124	0.136	0.149	0.161	0.173	0.186	0.198	0.223	0.248	0.272	0.297	0.322	0.347	0.371	0.396	0.446	0.495	0.545	0.594	0.644	0.693	0.743
	600	0.109	0.123	0.136	0.150	0.164	0.177	0.191	0.204	0.218	0.245	0.273	0.300	0.327	0.354	0.382	0.409	0.436	0.491	0.545	0.600	0.654	0.709	0.763	0.818
	650	0.119	0.134	0.149	0.164	0.179	0.193	0.208	0.223	0.238	0.268	0.298	0.327	0.357	0.387	0.417	0.446	0.476	0.536	0.595	0.655	0.714	0.774	0.833	0.893
	700	0.129	0.145	0.161	0.177	0.194	0.210	0.226	0.242	0.258	0.290	0.323	0.355	0.387	0.419	0.452	0.484	0.516	0.581	0.645	0.710	0.774	0.839	0.903	0.968
	750	0.139	0.156	0.174	0.191	0.209	0.226	0.243	0.261	0.278	0.313	0.348	0.382	0.417	0.452	0.487	0.521	0.556	0.626	0.695	0.765	0.834	0.904	0.973	1.043
800	0.149	0.168	0.186	0.205	0.224	0.242	0.261	0.279	0.298	0.335	0.373	0.410	0.447	0.484	0.522	0.559	0.596	0.671	0.745	0.820	0.894	0.969	1.043	1.118	

Table 6: Free cross-section [m²]

Weight table [kg]

		Width																							
		200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	900	1000	1100	1200	1300	1400	1500
Height	200	20	21	22	23	23	24	25	26	27	28	30	32	33	35	36	38	40	44	47	51	54	57	60	63
	225	21	22	23	24	24	25	26	27	28	29	31	33	34	36	38	40	41	46	49	53	56	59	63	66
	250	22	23	24	24	25	26	27	28	29	31	32	34	36	38	39	41	43	48	51	56	58	62	65	68
	275	23	24	24	25	26	27	28	29	30	32	34	35	37	39	41	43	44	49	53	56	60	64	67	71
	300	23	24	25	26	27	28	29	30	31	33	34	36	38	40	42	44	46	51	54	58	62	65	69	73
	325	24	25	26	27	28	29	30	31	32	34	36	38	39	41	43	45	47	52	56	60	64	68	71	75
	350	25	26	27	28	29	30	31	32	33	35	37	39	41	43	45	47	49	54	58	62	66	70	74	78
	375	26	27	28	29	30	31	32	33	34	36	38	40	42	44	46	48	50	56	60	64	68	72	76	80
	400	30	31	33	34	35	36	38	39	40	42	45	47	49	52	54	57	59	65	70	74	79	84	89	93
	450	34	35	36	38	39	40	42	43	44	47	49	52	54	57	59	62	64	69	74	79	84	89	94	99
	500	36	37	38	40	41	43	44	45	46	49	52	54	57	60	62	65	67	73	78	83	88	94	99	104
	550	37	39	40	42	43	45	46	47	49	52	54	57	60	63	65	68	71	76	82	87	93	98	104	109
	600	39	40	42	44	45	47	48	49	51	54	56	59	62	65	68	71	73	79	85	90	96	102	107	113
	650	41	42	44	46	47	49	50	52	53	56	59	62	65	68	71	74	77	82	88	94	100	106	112	118
	700	43	44	46	48	49	51	52	54	55	58	62	65	68	71	74	77	80	86	92	98	104	110	117	123
	750	45	46	48	50	51	53	55	56	58	61	64	67	70	74	77	80	83	90	96	102	109	115	121	128
800	48	49	51	53	55	57	58	60	62	65	68	72	75	79	82	85	89	95	102	109	116	122	129	136	


Table 7: Weight table [kg]


SPRING RETURN ACTUATORS

Classification of spring return actuators B10/B20/B32/S00/S10/S20

Assignment of the actuator types according to the dimensions

Height	Width																							
	200	225	250	275	300	325	350	375	400	450	500	550	600	650	700	750	800	900	1000	1100	1200	1300	1400	1500
200	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal							
225	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal							
250	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal							
275	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal							
300	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal							
325	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal							
350	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal							
375	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal							
400	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal							
440	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal							
450																								
500																								
550																								
600																								
650																		Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal
700																		Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal
750																		Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal
800																		Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal	Diagonal

 **B10** (BFL24-T-ST SO)
 or
S00 (GRA126.1E/SO3)

 **B20** (BFN24-T-ST SO)
 or
S10 (GNA126.1E/SO3)


 **B32** (BF24-TN-ST SO)
 or
S20 (GGA126.1E/SO3)

Table 8: Assignment of the actuator types

Technical data of spring return actuators
24 V actuators (B10/B20/B32)

Actuator type	B10 (BFL24-T-ST SO)	B20 (BFN24-T-ST SO)	B32 (BF24-TN-ST SO)
Rated voltage [V]	AC/DC 24		
Rated voltage frequency [Hz]	50/60		
Functional range [V]	AC 19.2...28.8 / DC 21.6...28.8		
Power consumption during operation [W]	2.5	4	7
Power consumption in idle position [W]	0.8	1.4	2
Power consumption/dimensioning	4 VA / I _{max} 8.3 A @ 5 ms	6 VA / I _{max} 8.3 A @ 5 ms	10 VA / I _{max} 8.3 A @ 5 ms
Auxiliary switch	2 x EPU		
Switching capacity of auxiliary switch	1 mA...3 (0.5 inductive) A, AC 250 V		1 mA...6 (3) A, DC 5 V...AC 250 V
Connection of supply / control	Cable 1 m, 2 x 0.75 mm ² (halogen-free), with 3-pin connector		
Auxiliary switch connection	Cable 1 m, 6 x 0.75 mm ² (halogen-free), with 6-pin connector		
Motor runtime	<60 s /90°		<120 s /90°
Spring return runtime	20 s @ -10...55°C / <60 s @ -30...-10°C		~16 s (t _{amb} = 20°C)
Protection class IEC/EN	Safety extra low voltage III		
Protection class auxiliary switch IEC/EN	II protective insulation		
Degree of protection IEC/EN	IP54		
Ambient temperature Normal operation	-30...55°C		-30...50°C
Storage temperature	-40...55°C		-40...50°C
Ambient humidity	95% r.H., non-condensing		

Table 9: Technical data of B10/B20/B32 (24 V spring return ac-
tuators) Ambient temperature safety incident: Reaching the safety position is guaranteed up to max. 75 °C.

Electric spring return actuators with thermoelectric release device BAT (assignment of the actuator types according to the BKA-Ü dimensions, as per Table 8 page 26).

- Release temperatures: ambient temperature 72 °C and internal duct temperature 72 °C
- Operating position (damper "OPEN") is approached automatically and return spring is tensioned by applying the supply voltage to the relay module RM. It supplies the spring return actuator with supply voltage (24 V).
! Thus, the safety function is ensured.
Safety position (damper "CLOSED") through spring force when supply voltage is interrupted by smoke detection system RMS or the temperature fuses (ambient temperature 72°C or internal duct temperature 72°C) of the spring return actuator respond. The response of the thermal fuses interrupts the supply voltage permanently and irrevocably.
- Display of the damper end positions is possible by means of integrated micro switches via potential-free changeover contacts (connected on-site) (S1 – S3 "CLOSED" indicates the "closed" position; S4 – S6 "OPEN" indicates the "opened" position).
- Manual actuation and fixing in any position is possible in the de-energised state. It is unlocked manually.
- On-site function control is possible by means of the control key of BAT.
- Spare parts: Temperature fuse for temperature inside the duct (ZBAT72). Exchange takes place by unscrewing the two screws of the thermoelectric release device. Remove the thermo-electrical trigger device from the actuator unit. Remove the internal duct temperature fuse (ZBAT72) from the thermoelectric release device and replace it with a new internal duct temperature fuse (ZBAT72). Screw the thermo-electrical trigger device back onto the actuator unit.
For any other damage etc., the entire "actuator/thermal release device" must be replaced completely.

24 V actuators (S00/S10/S20)

Actuator type	S00 (GRA126.1E/SO3)	S10 (GNA126.1E/SO3)	S20 (GGA126.1E/SO3)
Supply [V]	AC 24 / DC 24...48 (SELV/PELV)		
Operating voltage [V]	AC 24 ±20% / DC 24...48 ±20%		
Frequency [Hz]	50/60		
Power consumption during operation	AC: 5 VA / 3.5 W DC: 3.5 W		AC: 7 VA / 5 W DC: 4 W
Power consumption in idle position	AC/DC: 2 W		AC: 5 VA / 3 W DC: 3 W
Auxiliary switch *)	Integrated, fixed switching point at 5° or 80°		
Auxiliary switch switching voltage [V]	AC 24...230 / DC 12...30		
Auxiliary switch rated current [A]	AC: 6 (ohmic) or. 2 (inductive) / DC: 2		
Supply cable AC 24V: (wires 1-2)/ AC 230V: (wires 3-4)	Cable 0.9 m, 2 x 0.75 mm ² (halogen-free) + 3-pin connector		
Auxiliary switch cable (wires S1...S6)	Cable 0.9 m, 6 x 0.75 mm ² (halogen-free) + 6-pin connector		
Motor running time [s] (angle of rotation 90°)	90		
Spring return runtime [s]	15		
Protection class	III according to EN 60 730		
Degree of protection according to EN 60 529	IP54		
Ambient temperature Normal operation	-32...+50°C (actuator) -20...+50°C (temperature monitoring unit)		
Storage temperature	-32...+50°C (actuator) -20...+50°C (temperature monitoring unit)		
Ambient humidity	<95% r.h. / no dewing (actuator) CL D according to DIN 40040 (temperature monitoring unit)		

*) Either only mains voltage or only safety extra low voltage may be applied to the auxiliary switches. Mixed operation is not allowed. Operation with different phases is not allowed.

Table 10: Technical data of S00/S10/S20 (24 V spring return actuators)

Electric spring return actuators with temperature monitoring unit (assignment of the actuator types according to the BKA-Ü dimensions, as per Table 8 page 26).

- Release temperatures: ambient temperature 72 °C and internal duct temperature 72 °C
- Operating position (damper "OPEN") is approached automatically and return spring is tensioned by applying the supply voltage to the relay module RM. It supplies the spring return actuator with supply voltage.
! Thus, the safety function is ensured. Safety position (damper "CLOSED") through spring force when supply voltage is interrupted by the smoke detection system or the temperature monitoring unit (ambient temperature 72 °C or internal duct temperature 72 °C) of the spring return actuator responds. The response of the temperature monitoring unit interrupts the supply voltage permanently and irrevocably.
- Indication of damper end positions by integrated auxiliary switches via potential-free changeover contacts (S1 - S3 "CLOSED" indicates "CLOSED" position; S4 - S6 "OPEN" indicates "OPEN" position).

- Manual actuation and fixing in any position is possible in the de-energised state. It is unlocked manually.
- An on-site functional check is possible by means of a pushbutton or temperature monitoring unit permanently connected to the actuator.
- Spare parts: Duct tip for temperature monitoring unit with internal duct temperature of 72 °C (ASK79.4). The replacement takes place by unscrewing both screws at the temperature monitoring unit and removing the actuator unit. Pull the duct tip (internal duct temperature fuse) off the temperature monitoring unit and replace it with a new duct tip with internal duct temperature of 72 °C (ASK79.4). Reinsert temperature monitoring unit into actuator unit and screw it down.
For damage other than to the duct tip (internal duct temperature fuse), the entire actuator/temperature monitoring unit set must be completely replaced.

SMOKE DETECTION SYSTEM RMS

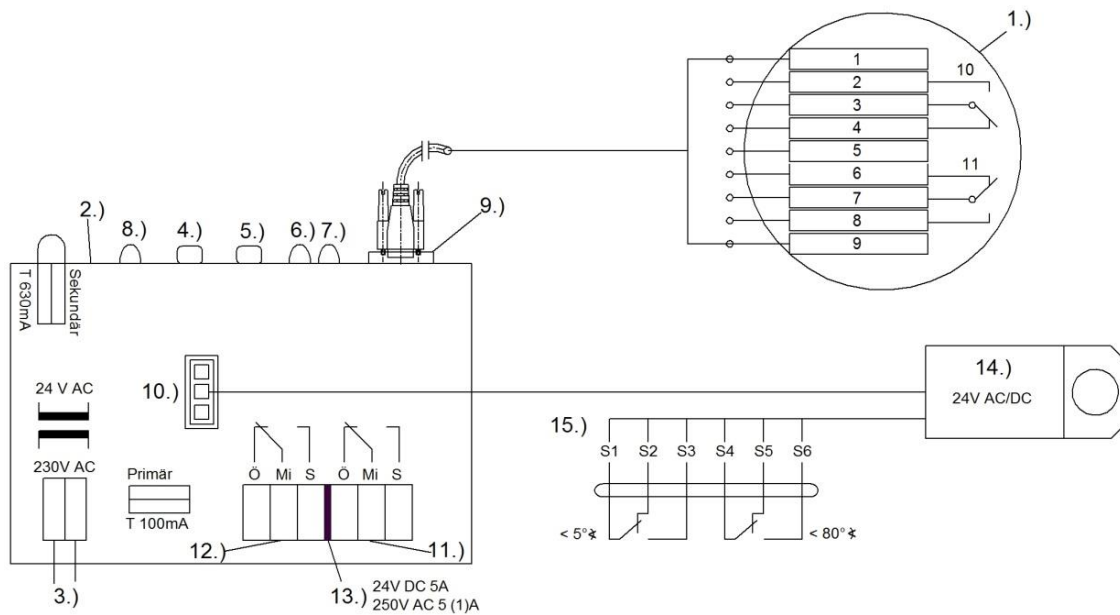


Figure 40: Circuit diagram of relay module RM

The de-energised state is shown. For relay module RM, also the alarm or fault condition.

- 1.) Smoke detector RMSII-L
- 2.) Relay module RM
- 3.) Mains connection - 230V AC 50Hz (on-site)
- 4.) Reset button
- 5.) Manual release
- 6.) LED fault
- 7.) LED alarm
- 8.) LED operation
- 9.) Connection RMSII-L
- 10.) AMP plug for 24V AC/DC spring return actuator
- 11.) Selector switch 1; potential-free contact (1) foot contact (24V / 230V)
- 12.) Selector switch 2; potential-free contact (2) foot contact (24V / 230V)
- 13.) Contact load of the selector switches
- 14.) Spring return actuator 24V AC/DC
- 15.) Limit switch spring return actuator (connection is fitted in a T-piece socket on-site)

Contact assignment Smoke detector RMSII-L:

- 1 GND
- 2 Work contact
- 3 Centre contact
- 4 Rest contact
- 5 Test switch / RST
- 6 Rest contact
- 7 Centre contact
- 8 Work contact
- 9 +24V
- 10 Fault
- 11 Alarm

- Ö = NC contact
Mi = Centre contact
S = NO contact

ADD-ON PARTS

Installation frame type ER-A1

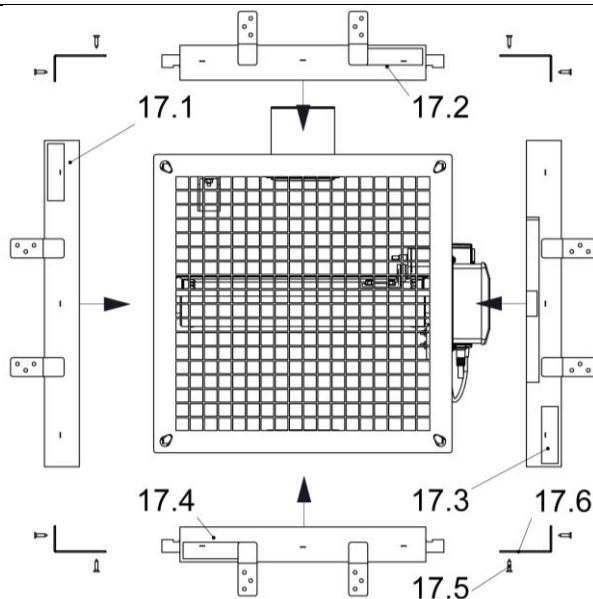


Figure 41: BKA-Ü with ER-A1 installation frame (loose)

- 1 Fire-resistant damper model BKA-Ü
- 17 Installation frame type ER-A1 (accessory, at an extra charge).
 - 17.1 H side part 1
 - 17.2 B side part 1
 - 17.3 H side part 2
 - 17.4 B side part 2
 - 17.5 Countersunk head screw 4.5 x 20 mm (8 pieces)
 - 17.6 Corner angle ER-A1 (4 pieces)
- 18 Fixing lugs (not shown; included in the scope of delivery of installation frame type ER-A1)

- Installation frame type ER-A1 consisting of silicate boards, incl. fastening material, with a circumferential intumescent seal located in its centre.
- Intended use:
For installation of the BKA-Ü in lightweight partition walls with metal posts and panelling on both sides according to classification to EN 13501-2 or comparable national standards.
The ER-A1 installation frame is to be ordered as an accessory (extra charge) – supplied loose or factory-mounted. If the installation frame type ER-A1 is already mounted ex works to the BKA-Ü, the installation in the wall can immediately take place.

If the ER-A1 installation frame has been ordered or delivered loose as a mounting kit, it must be mounted to the BKA-Ü (see Figure 41) following the instructions described below.

To avoid damage to the components when mounting the installation frame ER-A1, BKA-Ü must be placed on a suitable surface (e.g. cardboard, pallet etc.) during mounting.

All holes required for screw mounting have been predrilled ex works on the installation frame type ER-A1, no further holes must be drilled. The installation frame ER-A1 may not be screw-connected directly to the housing of BKA-Ü.

Mounting procedure

- Place the BKA-Ü on the flange of the operator side (BS).
- The two B side and H side parts (pos. 17.1 - 17.4) are positioned around the BKA-Ü housing (pos. 1), as shown in Figure 41.
- They are then screwed together with the supplied corner angles (pos. 17.6) and the corresponding countersunk screws (pos. 17.5) in the corner area.

Mortar anchor

- Perforated plate $t \geq 0.5$ mm; width x length = 40 x 70 mm (accessories at an extra charge: 1 set = 40 pieces). From a width > 800 mm (with horizontal damper blade axle) (article 3231690).
- Intended use: In case of wet installation in lightweight partition walls with metal posts and panelling on both sides according to classification to EN 13501-2 or comparable national standards.


Suspension angle

- 4 pieces (= 1 set, at an extra charge) per BKA-Ü damper are required. Select the angle material (SV; V2A; V4A) according to the housing material of the BKA-Ü.
SV = article 5007240;
V2A = article 5007242;
V4A = article 5007241;
- Intended use: For installation with Hilti soft seal system.

Legend

V_{zu}	[m ³ /h] [l/s]	=	Supply air volume
Δp	[Pa]	=	Static pressure difference
L_{WA}	[dB(A)]	=	A-weighted sound power level
V_{stirn}	[m/s]	=	Face velocity
ρ	[kg/m ³]	=	Density
B	[mm]	=	Width
H	[mm]	=	Height
min.		=	at least
or		=	or
approx		=	approximately

CE marking of BKA-EN

 0761	12
SCHAKO KG Weidenäcker 9 D-88605 Meßkirch 2021 DoP-BKA-EN-2021-06-01	
EN 15650:2010 Fire Damper Type/version BKA-EN	
Nominal conditions of activation / sensitivity: - Load bearing capacity of the temperature-sensitive measuring sensor passed - Response temperature of the temperature-sensitive measuring sensor	
Response delay (Response time): passed - Closing time	
Operational safety: passed - Cyclic testing (50 cycles)	
Fire resistance: - Cross-section maintained - Integrity E - Heat insulation I EI 90 - Smoke leakage S (v _e , h _o , i↔o) S - Mechanical strength (under E) - Cross-section (under E)	
Durability of the response delay: passed - temperature-sensitive measuring sensor Response temperature and load bearing capacity	
Durability of the operational safety: passed - Test of the opening and closing cycle	

ORDER CODE

01	02	03	04	05	06
Type	Width	Height	Length	Material (housing)	Coating (housing)
Example					
BKAUE	-1500	-800	-500	-SV	-0

07	08	09	10	11
Damper blade version	Release temperature	Actuator type	Accessories	Additional frame
-0	-72	-B32	-Z00	-R16

EXAMPLE
BKAUE-1500-800-500-SV-0-0-72-B32-Z00-R16

Type **BKAUE** = Fire-resistant damper BKA-Ü | Width = **1500** mm | Height = **800** mm | Length = **500** mm | Material (housing) **SV** = Galvanised sheet steel | Paint (housing) **0** = without paint | Damper leaf version **0** = without coating | Release temperature **72** = 72 °C | Type of drive **B32** = type BF24-TN-ST SO | Accessories **Z00** = without accessories | Additional frame **R16** = Installation frame type ER-A1

ORDER DETAILS
01 - TYPE

BKAUE = BKA-Ü

02 - WIDTH

0200 - 0225 - 0250 - 0275 - 0300 - 0325 - 0350 - 0375 - 0400 - 0450 - 0500 - 0550 - 0600 - 0650 - 0700 - 0750 - 0800 - 0900 - 1000 - 1100 - 1200 - 1300 - 1400 - 1500
in mm - always with 4 digits

03 - HEIGHT

200 - 225 - 250 - 275 - 300 - 325 - 350 - 375 - 400 - 450 - 500 - 550 - 600 - 650 - 700 - 750 - 800
in mm - always three digits

04 - LENGTH

500
in mm - always three digits

05 – MATERIAL (HOUSING) *)

SV = Galvanised sheet steel (standard)
V2 = Stainless steel material no. 1.4301 (V2A)
V4 = Stainless steel material no. 1.4571 (V4A)

06 – COATING (HOUSING) *)

0 = without paint (standard)
3 = DD coating inside and outside (RAL7035)

07 – DAMPER BLADE VERSION

0 = without coating (standard)
2 = DD coating
4 = covered with galvanised sheet steel
6 = covered with galvanised sheet steel + DD coating

*) For notes, see Table 3 page 5

08 – RELEASE TEMPERATURE

72 = 72°C

09 - ACTUATOR TYPE

B10 = BFL24-T-ST SO (suitable for see p.26 Table 8)
B20 = BFN24-T-ST SO (suitable for see p.26 Table 8)
B32 = BF24-TN-ST SO (suitable for see p.26 Table 8)
S00 = GRA126.1E/SO3 (suitable for see p.26 Table 8)
S10 = GNA126.1E/SO3 (suitable for see p.26 Table 8)
S20 = GGA126.1E/SO3 (suitable for see p.26 Table 8)

10 - ACCESSORIES

Z00 = without accessories (standard)

11 – ADDITIONAL FRAME

R00 = without additional frame (standard)
R16 = Installation frame type ER-A1 ¹⁾
R17 = Installation frame type ER-A1 ¹⁾

R66 = Installation frame type ER-A1 + DD coating ¹⁾
R67 = Installation frame type ER-A1 + DD coating ¹⁾

¹⁾ Additional frame supplied loose

¹⁾ Additional frame mounted ex works

SPECIFICATION TEXTS

Fire-resistant dampers of special design and application are used if, as part of ventilation planning, openings are required in fire-resistant inner walls or ceilings for the air intake, they must be closed in the event of a fire.

The competent building supervisory authority will decide whether the opening is admissible, for example because it differs or in connection with the approval of the fire protection concept.

The required dampers are fire-resistant dampers which are closed in case of fire driven by a suitable smoke detecting triggering device in the event of a fire, thus preventing the propagation of fire and smoke through the component opening. Dampers of this type must not be connected to ventilation ducts in connection with RLT systems in buildings.

The general type approval (aBG) Z-6.50-2012 in its currently valid form, the installation, mounting and operating instructions and the relevant national standards and directives must be observed.

The standard fire-resistant damper BKA-Ü consists of the following components (fitted or wired ex works):

- SCHAKO Fire damper BKA-EN, with CE marking and Declaration of Performance (DoP) in accordance with the Construction Products Ordinance, housing made of galvanised sheet steel with spring return actuator 24 V.
- SCHAKO Mounting part type EBT, galvanised sheet steel model (painted black matt on the inside).
- SCHAKO Finishing protective grating type ASG on both sides, galvanised sheet steel model (operator side: painted black matt).
- SCHAKO Extension piece type VT, galvanised sheet steel model, required for $H \geq 400$.
- SCHAKO Smoke detection system RMS, in compliance with abZ/aBG No. Z-78.6-58

Installation is performed in interior walls (horizontal position of the damper blade axle) and ceilings. In doing so, the general building supervisory approval (aBG) no. Z-6.50-2012, the Declaration of performance (DoP) of BKA-EN and the general building supervisory approval (abZ) / general type approval (aBG) no. Z-78.6-58 and the associated technical documentation must be observed. For the installation in solid ceilings, the dimensions of BKA-Ü are limited to W and $H = 500$ mm. For wall installation, the smoke detector (type RMSII-L) must always be installed above (B side) in the assembly part type EBT.

Product:

SCHAKO Type BKA-Ü

General type approval (aBG) no. Z-6.50-2012

Dimensions

Width (B): mm

Height (H): mm

Length (L): 500 mm (standard length refers to BKA-EN)

Alternative designs or accessories (at an extra charge) (select as desired)

- Model made of stainless steel material no. 1.4301 (V2A)
Note: EBT painted in black matt on the inside, ASG painted in black matt on operator side
- Model made of stainless steel material no. 1.4571 (V4A; replaceable, non-coated parts are made of stainless steel material no. 1.4301)
Note: EBT painted in black matt on the inside, ASG painted in black matt on operator side
- Housing with DD coating (solvent-containing two-component top coat based on polyurethane varnish - RAL 7035 / light-grey)
 - DD coating inside and outside (replaceable, non-coated parts and the U-profile of the damper blade are made of stainless steel material no. 1.4301)
Note: EBT painted in black matt on the inside, ASG painted in black matt on operator side.
- Spring return actuator with thermoelectric trigger mechanism BAT (B10/B20/B32) or temperature monitoring unit (S00/S10/S20)
- Releases at an ambient temperature of 72°C and an internal duct temperature of 72°C containing integrated micro switches for indication of damper end positions, assignment of the actuators according to Table 8 page 26:
 - Type B10 (BFL24-T-ST SO)
B20 (BFN24-T-ST SO)
B32 (BF24-TN-ST SO)
 - Type S00 (GRA126.1E/SO3)
S10 (GNA126.1E/SO3)
S20 (GGA126.1E/SO3)

Installation frame type ER-A1, consisting of silicate boards, with fastening material, for installation of the BKA-Ü in lightweight partition walls with metal posts and panelling on both sides as classified according to EN 13501-2 or comparable national standards. The ER-A1 installation frame is to be ordered as an accessory (extra charge) – supplied loose or factory-mounted. A circumferential intumescent seal is located in the centre of the installation frame type ER-A1. Fixing lugs are included in delivery.

Product: SCHAKO **Installation frame type ER-A1**

Dimensions (B;H according to damper size):

Width (B):mm

Height (H):mm

(Unless stated otherwise in the order details, the installation frame type ER-A1 will be delivered loose as a mounting kit)

COMMISSIONING AND MAINTENANCE

COMMISSIONING

Before the fire-resistant damper is put into operation for the first time, it must undergo an inspection in order to determine and assess the installation and function (see model protocol, page 36 f.).

FUNCTIONAL CHECKING, CLEANING, REPAIR

The owner or operator of the system must arrange for its function to be checked. The inspection must be carried out at least every six months. If two successive functional tests at intervals of half a year do not reveal any defects, the interval may be increased to one year.

The following standards describe the basic maintenance measures and are generally to be taken into account:

- EN 13306
- DIN 31051
- EN 15423

In addition, any possible national or building code regulations regarding the safe operation must be observed.

Observe the notes in the general type approval (aBG) no. Z-6.50-2012 section 3.

1. Electric spring return actuator

1.1. Visual inspection

- Check BKA-Ü for damage and contamination.
- Perform necessary cleaning work.

1.2 Thermoelectric trigger – Closing BKA-Ü

- Press switch (pos. 5.2) on the thermoelectric release device (pos. 5.1), thus, removing the electric power from the spring return actuator (pos. 5) (alternatively: interrupt on-site power supply).
- BKA-Ü must close automatically, locking is performed by blocking the spring return actuator.

1.3 Replacement of the thermoelectric trigger device (if necessary)

- Exchange takes place by unscrewing the two screws of the thermoelectric trigger device (pos. 5.1). Remove the thermoelectric release device from the actuator unit. Remove the internal duct temperature fuse (pos. 5.3) from the thermoelectric trigger device and replace it with a new internal duct temperature fuse (ZBAT72). Screw the thermo-electric trigger device back onto the actuator unit. Carry out a functional check

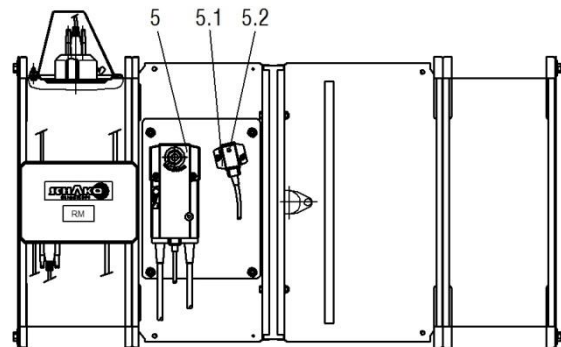


Figure 42: Side view BKA-Ü (spring return actuator)

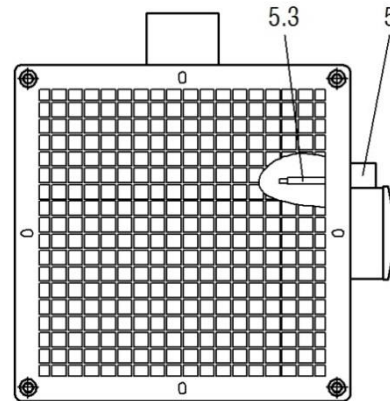


Figure 43: Front view BKA-Ü (spring return actuator)

2. Smoke alarm system RMS

Note

Installation and wiring must be carried out by authorised electricians only. The recognised technical rules, safety and accident prevention regulations as well as VDE (Union of German Technical Engineers) guidelines, regulations of the local power company and the wiring information and connecting plans of the component manufacturer must be observed during installation, wiring and commissioning. When wiring the junction boxes, make sure to earth the shielding. The smoke detector must be used according to these instructions.

Maintenance instructions

The SCHAKO smoke detector type RMSII-L permanently monitors itself and sends an error warning to the central unit if there is a mechanical or electrical defect, or if it is too heavily soiled. When a power failure of the smoke detector occurs, a fault message is also sent to the central unit. This permanent self-monitoring allows a yearly maintenance interval.

2.1 External check

2.1.1 Visual inspection

- The electrical connections must be checked for correct connection and perfect condition.
- Checking whether the diode on the installed smoke detector or relay module RM flashes green, thus, signalling its ready-for-operation state.

2.1.2 Electrical functionality control

- The power supply of the smoke detector must be disconnected by removing the 9-pin Sub-D plug. This causes the smoke detector to send an alarm to the connected BKA-Ü, which will close automatically. The diode on the smoke detector or relay module RM is no longer lit. As soon as the power supply has been restored and the alarm has been acknowledged by pressing the reset button, the smoke detector must return to the ready operating state, and the diode on the smoke detector and / or relay module RM must flash green.

2.2 Internal check

2.2.1 Fault control

- On the smoke detector RMSII-L, the transmitter and receiver sensors must be covered. The diode on the smoke detector lights up permanently in orange. The fault contact reports a fault. After that, the cover must be removed again. The smoke detector must again return to the ready operating state, and the fault message is reset at the central unit.

2.2.2 Functionality control using test aerosols

- A test aerosol must be applied to the smoke detector in the installed state. This must be done by applying the test aerosol to the smoke detector increasingly in pulsed form for about 10 sec. If the alarm threshold values are exceeded, an alarm message will be triggered, and the connected BKA-Ü must close automatically. The diode on the smoke detector or on the relay module RM must light up in red. After the aerosol components in the surrounding air of the smoke detector have decomposed to such an extent that the value drops again below the alarm threshold value, the alarm message is still displayed on the smoke detector or the relay module RM. This is why the smoke detector must be activated again by pressing the reset button. As soon as the diode on the smoke detector type RMSII-L flashes in green again, the smoke detector is ready for operation again.

Elimination of defects

If defects have been detected during maintenance, they must be eliminated immediately. Defective components may only be replaced with original parts delivered by SCHAKO KG. Repair of the smoke detector must be carried out only by the appliance manufacturer.

If any of the connected BKA-Üs are not closing, even when the smoke detector functions faultlessly, then the BKA-Üs themselves must be checked.

Inspection instructions

The SCHAKO smoke detector type RMSII-L permanently monitors itself and sends an error warning to the central unit if there is a mechanical or electrical defect, or if it is too heavily soiled.

When a power failure of the smoke detector occurs, a fault message is also sent to the central unit.

SAMPLE OF FUNCTIONAL TEST PROTOCOL

SCHAKO KG
 Steigstrasse 25-27
 D-78600 Kolbingen
 Phone: +49- (0)7463 / 980-0
 Fax: +49- (0)7463 / 980-200
 E-mail: info@schako.de
 Web: schako.com

Sample

Functional test protocol for _____
 Cons. No. _____

Usability certificate: _____
 Series: _____
 Release device: _____

The following functional steps have been carried out according to the documents installation, mounting and operating instructions	Prior to commissioning	Next functional check in: _____	Next functional check in: _____	Next functional check in: _____	Next functional check in: _____
External check: System: _____ Item: _____					
Internal check: System: _____ Item: _____					
Additional check: System: _____ Item: _____					
without defects Date / tester					
with defects (see back) Date / tester					
without defects Date / tester					

SAMPLE

SCHAKO KG
Steigstrasse 25-27
D-78600 Kolbingen
Phone: +49- (0)7463 / 980-0
Fax: +49- (0)7463 / 980-200
E-mail: info@schako.de
Web: schako.com

Sample

Functional test protocol for fire-resistant dampers

Cons. No. _____

Defects found during the test on: _____

Sluggishness due to soiling.

Any remaining mortar must be removed.

Defects found during the test on: _____

Defects found during the test on: _____

Defects found during the test on: _____

SAMPLE

SAMPLE OF A CERTIFICATE OF CONFORMITY

Certificate of conformity

- Name and address of the construction company which has manufactured and installed the fire-resistant damper/dampers of special design and application (BKA-Ü):

.....
.....
.....

- Designation of the building:

.....
.....

- Date of construction /date of completion:

.....

Hereby we confirm that

- the object(s) of approval have been manufactured and labelled in compliance with all regulations of the general type approval (aBG) No.: Z-6.50-2012 by German Institute for Building Technology (Deutschen Instituts für Bautechnik) of (and, if relevant, all the regulations of revisions and amendments of)

- the construction products used for manufacturing the object(s) of approval comply with the regulations of the general type approval (aBG) and they have been labelled as required. This also applies to the parts of the object(s) of approval for which the certificate contains accordingly saved definitions.

.....
(Place, Date)

.....
(Company/Signed)

(This certificate has to be submitted to the owner for possible forwarding to the responsible building supervision authority.)

FOREIGN BRANCH OFFICES

Belgium SCHAKO S.A.R.L. 165, rue des Pommiers L-2343 Luxembourg Phone: +352 / 403 157 1 Fax: +352 / 403 157 66 info@schako.be www.schako.be	Denmark Venti AS Banevænget 3 8362 Hørning Phone: +45 / 86 92 22 66 Fax: +45 / 86 92 22 26 info@venti.dk www.venti.dk	England SCHAKO Ltd. Index House St Georges Lane, Ascot SL5 7EU Berkshire Phone: +44 / 13 44 63 63 89 Fax: +44 / 13 44 87 46 58 admin@schako.uk.com www.schako.co.uk	France SCHAKO s.a.r.l. 16 Boulevard de la Croix Rousse F-69001 Lyon Phone: +33 / 4 / 78 34 97 34 Fax: +33 / 4 / 78 34 97 31 contact@schako.fr www.schako.fr
Greece EUROPERIS Odisea Androutsou 2 GR-56224 Evosmos/Tessaloniki Phone: +30 / 310 / 68 57 79 Fax: +30 / 310 / 75 76 13 info@europersis.gr www.europersis.gr	Israel Insupco Industrial Supply Ltd. 40 Hayarkon St. Yavne 811 00 Phone: +972 / 8 / 94 20 080 Fax: +972 / 8 / 94 20 311 insupco@netvision.net.il www.insupco.com	Italy SCHAKO Italia S.r.l. Via xxv Aprile, 17 20097 S.Donato Milanese-MI Phone: +39 / 02 / 51 64 02 01 Fax: +39 / 02 / 51 62 09 46 info@schako.it www.schako.it	Croatia Intel Trade Dr. Ante Mandica 10 HR-51410 Opatija Phone: +385 / 51 741 100 Fax: +385 / 51 701 470 ri@intel-trade.hr www.intel-trade.hr
Luxembourg SCHAKO S.A.R.L. 165, rue des Pommiers L-2343 Luxembourg Phone: +352 / 403 157 1 Fax: +352 / 403 157 66 info@schako.lu www.schako.lu	Netherlands SCHAKO S.A.R.L. 165, rue des Pommiers L-2343 Luxembourg Phone: +352 / 403 157 1 Fax: +352 / 403 157 66 Info@schako-nederland.nl www.schako-nederland.nl	Austria SCHAKO Vertriebs GmbH Mariahilfer Straße 103/1/TOP 12 A-1060 Wien Phone: +43 / 1 / 890 24 62 Fax: +43 / 1 / 890 24 62 50 info@schako.at www.schako.at	Poland SCHAKO Polska Sp. z o.o. ul. Pulawska 38 PL-05-500 Piaseczno Phone: +48 / 22 / 7263570 Fax: +48 / 22 / 7263571 info@schako.pl www.schako.pl
Romania SCHAKO Klima Luft SRL Str. Elena Caragiani nr.21 014212 Bucuresti, Phone: +40 / 0 / 21 / 232 13 75 Fax: +40 / 0 / 21 / 232 13 75 info@schakoromania.ro www.schako.ro	Sweden EXOTHERM AB Box 60036 21610 Limhamn Phone: +46 / 40 / 631 61 16 Fax: +46 / 40 / 15 60 95 info@exotherm.se www.exotherm.se	Switzerland SCHAKO Suisse SA Rue Jean-Prouvé 28 1762 Givisiez Phone: +41 / 26 / 460 88 00 Fax: +41 / 26 / 460 88 05 schako@schako.ch www.schako.ch	Serbia & Montenegro TERMOMEHANIKA d.o.o. Koste Glavinica 2 RS-11000 BEOGRAD Phone: +381 / 11 / 369 99 93 Fax: +381 / 11 / 369 09 93 termomehanika@sbb.rs www.termomehanika.rs
Slovakia SCHAKO SK s.r.o. Modrová 187 91635 Modrová Phone: +421 / 337 / 774 1843 Fax: +421 / 337 / 774 1843 schako@schako.sk www.schako.sk	Spain SCHAKO IBERIA S.L. Departamento de Ventas Pol. Ind. Río Gállego, Calle B, nave 3 50840 San Mateo de Gállego / Zaragoza Phone: +34 / 976 / 531 999 Fax: +34 / 976 / 690 709 ventas@schako.es www.schako.es	Czech Republic SCHAKO s.r.o. Pred Skalkami II. 184/5 CZ-10600 Praha 10-Zabehlice Phone: +42 / 02 / 727 680 43 Fax: +42 / 02 / 727 693 94 info@schako.cz www.schako.cz	Turkey EMO-SCHAKO Klima Havalandirma San. ve Tic. Ltd. Sti. Pursaklar Sanayi Sitesi, Karacaören Mah.1638.Cad. No:98 06145 Altindag - Ankara Phone: +90 / 312 527 16 05 Fax: +90 / 312 527 16 08 emo@emo-schako.com.tr www.emo-schako.com.tr
Hungary SCHAKO Kft. Tó Park 6 H-2045 Törökbálint Phone: +36 / 23 / 445670 Fax: +36 / 23 / 445679 e-mail@schako.hu www.schako.hu			

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