

# KWP-L

Fire Damper – rectangular

## Technical Documentation



SMAY™

 1438	
SMAY Sp. z o.o. 17 CSWU: 1438-CPR-0509 DWU: 011-CPR-2017	
EN 15650:2010 Fire damper type: KWP-LE,KWP-LS	
Nominal activation conditions/sensitivity: Closing/opening during the test at the right time	Pass
Response time/Closure time:	Pass
Reliability:	50 cycles. <120s
Fire resistance:	
Fire integrity - E Fire insulation - I Smoke leakage - S Mechanical stability (under E) Maintenance of the cross section (under E)	EI 120 (ve h <sub>o</sub> i↔o) S EI 90 (ve i↔o) S EI 60 (ve i↔o) S EI 30 (ve i↔o) S
Durability:	
Opening and closing cycle test (1)	KWP-LE: 10 000 cycles, <120s (1) KWP-LS: 300 cycles, <120s (1)

Version 6.2

SMAY reserves the right to make changes to this document.

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## 1. INTRODUCTION

The purpose of technical documentation is to familiarize the user with the intended use, design, operation principle, installation, periodic maintenance and operation of product.

## 2. LEGAL REGULATIONS

Fire dampers KWP-L have **Certificate of Constancy of Performance No. 1438-CPR-0509**, issued by Scientific and Research Centre for Fire Protection – National Research Institute.

The KWP-L fire dampers are designed for application in general ventilation systems as cut-off partitions separating the fire-engulfed zone from the remaining part of the building (normally open). The purpose of these dampers is to prevent the spread of fire, heat and smoke.

The dampers are designed, manufactured and tested in accordance with the following standards: **PN-EN 15650** "Ventilation for buildings – Fire dampers" and **PN-EN 13501-3** "Fire classification of construction products and building elements – Part 3: Classification using data from fire resistance tests on products and elements used in building service installations: fire resisting ducts and fire dampers."

The effectiveness of the dampers is confirmed by tests according to **PN-EN 1366-2** "Fire resistance tests for service installations – Part 2: Fire dampers."

The KWP-L fire damper is classified as tightness class C (housing tightness) on the basis of tests carried out according to **PN-EN 1751** "Ventilation for buildings. Air terminal devices. Aerodynamic testing of dampers and valves."

## 3. INTENDED USE

The KWP-L fire dampers are classified in the following fire resistance classes and may be installed in the following building partitions:

- a. **EI 120 (ve ho i↔o) S**
  - ceilings 140 [mm] in thickness or more, and a fire resistance class EI120 or higher,
  - rigid walls 100 [mm] in thickness or more, and EI120 or a higher fire resistance class (e.g. concrete walls, solid brick walls, cellular concrete block walls, hollow masonry unit walls or concrete slab walls)
  - flexible walls, 125 [mm] in thickness or more and EI 120 or a higher fire resistance class (thicker, higher density, more board layers)
  - rigid walls, 125 [mm] in thickness or more, and EI120 or a higher fire resistance class (e.g. concrete walls, solid brick walls, cellular concrete block walls, masonry unit walls or concrete slab walls).
  - away from rigid walls 120 [mm] in thickness or more and EI120 or a higher fire resistance class (e.g. concrete walls, solid brick walls, cellular concrete block walls, hollow masonry unit walls or concrete slab walls).
- b. **EI 90 (ve i↔o) S**
  - flexible walls, 100 mm in thickness or more and EI 90 or a higher fire resistance class (thicker, higher density, more board layers)
  - rigid walls, 100 mm in thickness or more, and EI90 or a higher fire resistance class (e.g. concrete walls, solid brick walls, cellular concrete block walls, hollow masonry unit walls or concrete slab walls).
- c. **EI 60 (ve i↔o) S**
  - flexible walls (gypsum plasterboard walls, 12.5 mm in thickness, steel profiles) 75 mm in thickness or more and EI 60 or a higher fire resistance class (thicker, higher density, more board layers)
  - rigid walls, 75 mm in thickness or more, and EI60 or a higher fire resistance class (e.g. concrete walls, solid brick walls, cellular concrete block walls, hollow masonry unit walls or concrete slab walls).
- d. **EI 30 (ve i↔o) S**
  - flexible walls, 75 mm in thickness or more and EI30 or a higher fire resistance class (thicker, higher density, more board layers)
  - rigid walls, 75 mm in thickness or more, and EI30 or a higher fire resistance class (e.g. concrete walls, solid brick walls, cellular concrete block walls, hollow masonry unit walls or concrete slab walls).

Table 1. Table of fire resistance

Construction type	Minimum thickness of the Building partition mm	Fire resistance class	Sealing type
<b>Ceiling</b>	≥140 mm	EI 120 (h <sub>o</sub> i↔o) S	MORTAR
<b>Rigid wall</b>	≥100 mm	EI 120 (v <sub>e</sub> i↔o) S	MORTAR
	≥100 mm	EI 90 (v <sub>e</sub> i↔o) S	MORTAR
	≥75 mm	EI 60 (v <sub>e</sub> i↔o) S	MORTAR
	≥75 mm	EI 30 (v <sub>e</sub> i↔o) S	MORTAR
<b>Rigid wall</b>	≥125 mm	EI 120 (v <sub>e</sub> i↔o) S	MINERAL WOOL
	≥100 mm	EI 90 (v <sub>e</sub> i↔o) S	MINERAL WOOL
	≥75 mm	EI 60 (v <sub>e</sub> i↔o) S	MINERAL WOOL
	≥75 mm	EI 30 (v <sub>e</sub> i↔o) S	MINERAL WOOL
<b>Standard wall</b>	≥125 mm	EI 120 (v <sub>e</sub> i↔o) S	MINERAL WOOL
	≥100 mm	EI 90 (v <sub>e</sub> i↔o) S	MINERAL WOOL
	≥75 mm	EI 60 (v <sub>e</sub> i↔o) S	MINERAL WOOL
	≥75 mm	EI 30 (v <sub>e</sub> i↔o) S	MINERAL WOOL
<b>Montage away from wall construction (silicate boards)</b>	≥120 mm	EI 120 (v <sub>e</sub> i↔o) S	MINERAL WOOL

where:

**E** – fire integrity,

**I** – fire insulation,

**S** – smoke leakage,

**120/90/60/30** – duration of fulfilment of E, I and S criteria, expressed in minutes,

**v<sub>e</sub>** – damper installed directly in a wall,

**h<sub>o</sub>** – damper mounted directly in a floor,

**i↔o** – operating effectiveness criteria are met from inside to outside (fire inside), and from outside to inside (fire outside).

The KWP-L fire dampers may also be installed in buildings partitions with a lower fire resistance rating. In this case, the damper fire resistance rating is equal to the partition fire resistance rating, subject to the smoke leakage criterion.

The KWP-L fire dampers may be installed in vertical building partitions **with either horizontal or vertical rotation axis**, with any actuator position.

The KWP-L fire dampers may also be installed in either inner or outer buildings partitions, as also at a distance from them. In case of external wall installation, use of finishing element is required (intake or exhaust), which will protect from influence of atmospheric factors. Drive system (actuator or spring mechanism) should be installed inside facility. It is recommended to use dampers in special implementation (impregnated fireproof boards, anti-corrosive steel elements).

#### 4. TECHNICAL DESCRIPTION

The KWP-LS dampers (with a spring mechanism) and the KWP-LE dampers (with an electric spring return actuator) consist of a housing of a rectangular cross-section, a moving, single-axis isolating baffle and an actuating mechanism with a release device.

The damper housing and its interacting elements are made of galvanized steel sheet. Connection flanges are on both ends of the housing for easy connection between the duct and the damper.

There are intumescent seals on the outer and inner surfaces of the housing, in the place of perforation, around the closed isolating baffle. Their characteristic feature is that their volume increases at high temperatures, tightly filling all leaks between the baffle and the body.

The isolating baffle of the damper is made of calcium-silicate board, and a rubber seal is installed on its perimeter, ensuring the damper integrity at ambient temperature.

The KWP-LS damper is provided with a spring mechanism comprising, ea. an actuating spring, a manual release device and a thermal fuse with a nominal triggering temperature of  $70 \pm 5^\circ\text{C}$ . When the damper is being opened with a key, the actuating spring is being tensioned. The baffle is kept in the open position by the manual release device, blocked with a thermal fuse. The damper is automatically closed as a result of triggering the thermal fuse. The damage to the thermal fuse automatically rotates the isolating baffle (to the closed position). The movement of the baffle is limited by two buffers.

The KWP-LE damper is provided with an electric spring return actuator BFL, BFN or BF series manufactured by BELIMO, and the BAT or BAE thermal fuse ( $72^\circ\text{C}$ ,  $95^\circ\text{C}$  optionally), constituting damper's drive system supplied by the 230 V AC or 24 V AC/DC voltage. After the voltage has been supplied, the actuator rotates the baffle to the open position. The baffle is closed due to voltage loss or when the thermal fuse is activated (the return spring in the actuator closes the baffle by returning to the non-stressed position). During normal operation of the system, the KWP-LS and KWP-LE dampers are in the open position. If a fire breaks out, the damper baffle rotates to the closed position.

The permissible air velocity in a connection duct for the KWP-LE dampers with an actuator is 12 m/s and 8 m/s for the KWP-LS dampers with a spring mechanism.

The range of dampers covers the following dimensions: a clear damper width from 160 to 800 mm (10 mm intervals from the width 200 mm) and a clear damper height from 200 to 500 mm (10 mm intervals). The primary type series of damper dimensions, including actuators, is provided in the table below.

Table 2. Type series of damper dimensions, including used actuators

		B [mm]							
		160	200	300	400	500	600	700	800
H [mm]	200	BFL							
	300	BFL							
	400	BFL						BFN	
	500	BFL				BFN			

BFL actuators are used for the damper clear area of  $\leq 0,24 \text{ [m}^2\text{]}$ .

BFN actuators are used for the damper clear area of  $>0,24 \text{ [m}^2\text{]}$ .

BF actuators are used for all series fire dampers.

Depending on the actuation system used, the dampers are marked as follows:

- **KWP-LS** - the dampers with a spring mechanism,
- **KWP-LE** - the dampers with an electric spring return actuator,

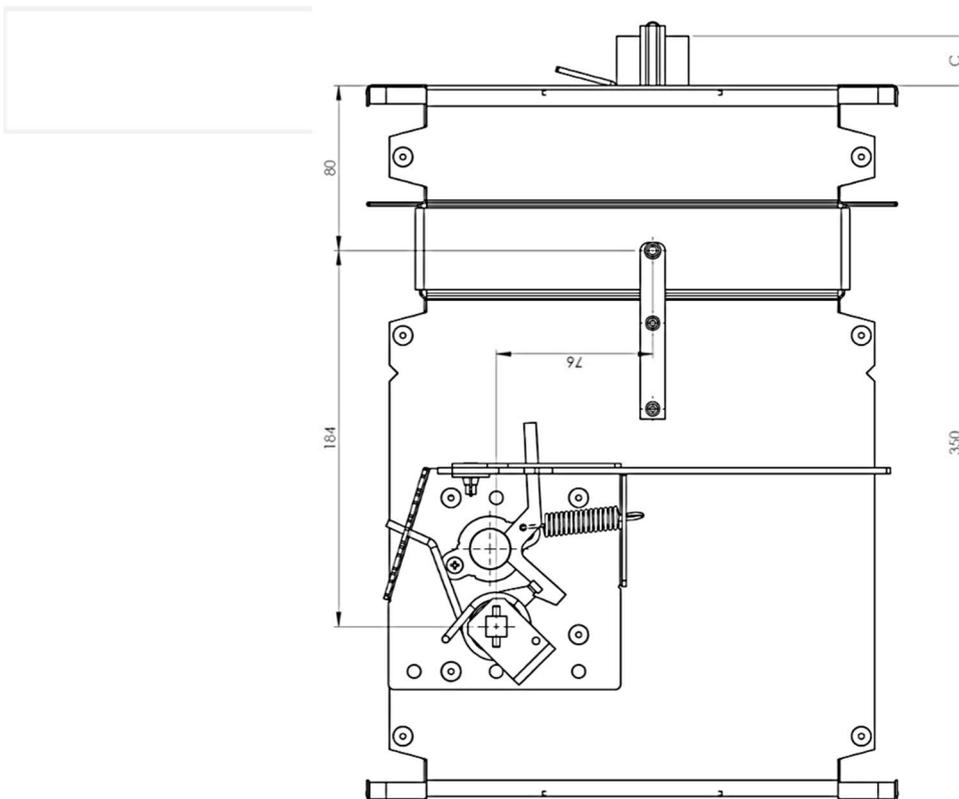
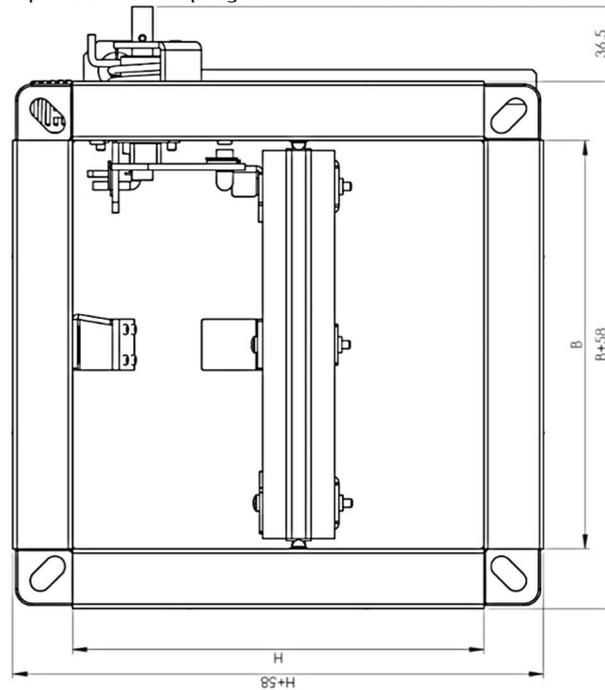
The length of KWP-L dampers is  $L=350 \text{ mm}$ .

Special execution of dampers.

The dampers may also be fitted with limit switches indicating the open or closed position of the baffle.

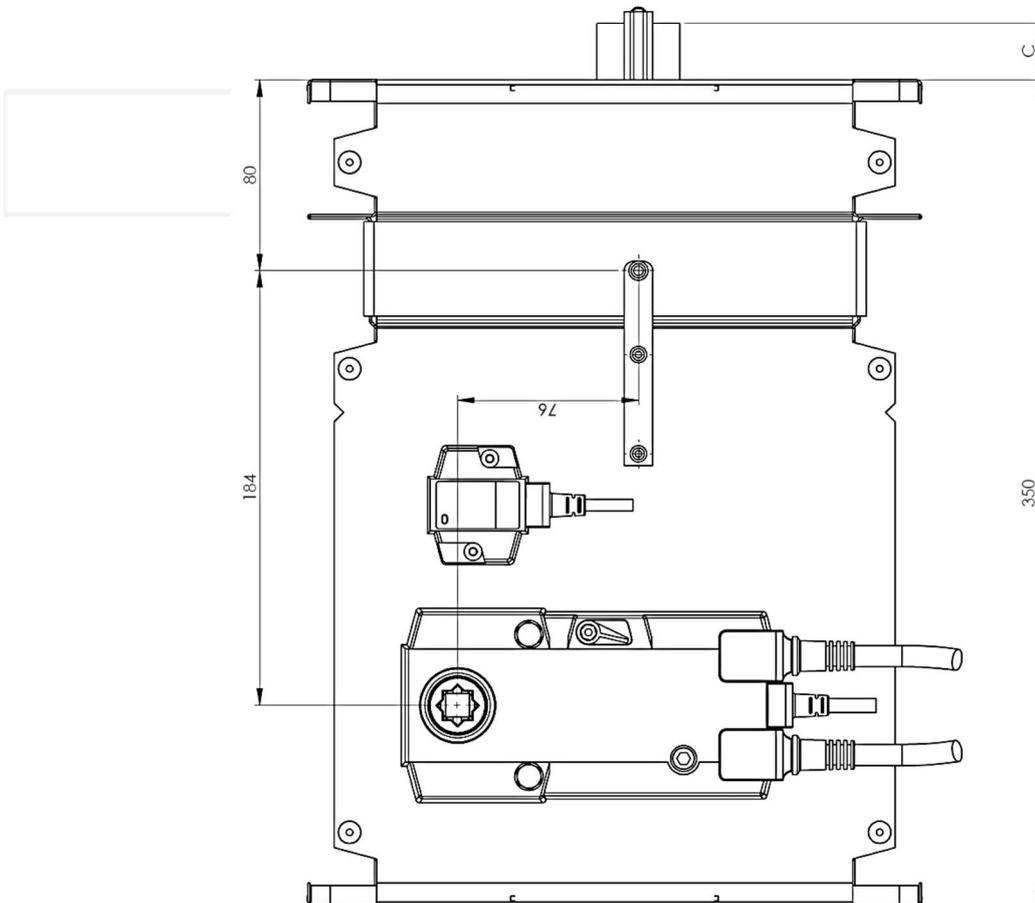
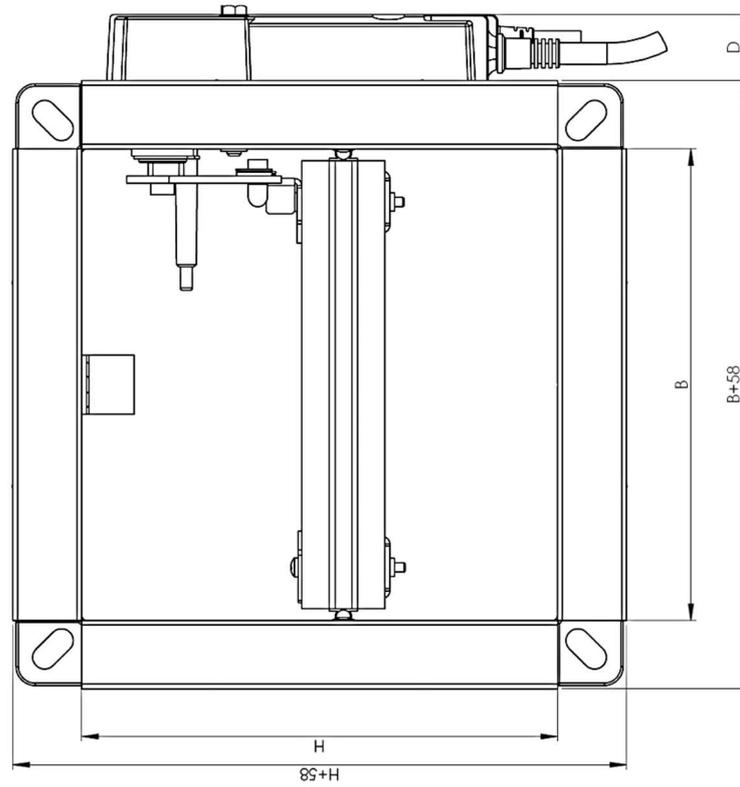
KWP-L dampers may be fitted with inspection openings for checking the damper condition once it is installed in the ventilation system.

In a special version, resistant to aggressive environments, all components of the damper are made of stainless steel, whereas the damper baffle is impregnated with a fire-resistant board impregnation.



Where:  
 H - clear damper height;  
 B - clear damper width  
 $C = 25$  mm for  $H < 250$  mm;  
 $C = ((H - 10) / 2) - 80$  for  $H \geq 250$  mm.

Figure 1. KWP-LS damper (with a spring mechanism)



Where:  
 H - clear damper height;  
 B - clear damper width  
 C=25 mm for  $H < 250$  mm;  
 C= $((H-10)/2)-80$  for  $H \geq 250$  mm.  
 D=28 mm for BFL actuator;  
 D=30 mm for BFN actuator.

Figure 2. KWP-LE damper with an electric actuator

Table 3. KWP-LE weight, [kg]

KWP-LE		B [mm]							
H [mm]		160	200	300	400	500	600	700	800
	200	5,0	6,0	7,0	8,1	9,1	10,1	11,2	12,2
	300	5,8	7,0	8,2	9,5	10,7	11,9	13,1	14,3
	400		8,1	9,5	10,9	12,2	13,6	15,4	16,7
	500			10,7	12,2	14,1	15,7	17,3	18,8

Table 4. KWP-LS weight, [kg]

KWP-LS		B [mm]							
H [mm]		160	200	300	400	500	600	700	800
	200	4,9	5,9	6,9	8,0	9,0	10,1	11,1	12,1
	300	5,7	6,9	8,2	9,4	10,3	11,8	13,0	14,2
	400		8,0	9,4	10,8	12,2	13,6	14,9	16,3
	500			10,6	12,2	13,7	15,3	16,9	18,4

## 5. BELIMO ELECTRIC ACTUATORS USED IN KWP-LE

**Spring-return 90° actuator BFL series, combined with thermoelectric tripping device BAT:**

- BFL230-T,
- BFL24-T,
- BFL24-T-ST,

where:

ST - connection plug.

**Spring-return 90° actuator BFN series, combined with thermoelectric tripping device BAT:**

- BFN230-T,
- BFN24-T,
- BFN24-T-ST,

where:

ST - connection plug.

**Spring-return 90° actuator BF series, combined with thermoelectric tripping device BAE:**

- BF230-TN,
- BF24-TN,
- BF24-TN-ST,
- BF24-TL-TN-ST

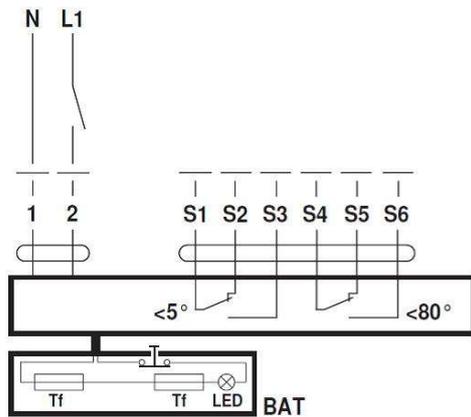
where:

ST-connection plug,  
 TL- communicative control



**Wiring diagram BFL230-T and BFN230-T**

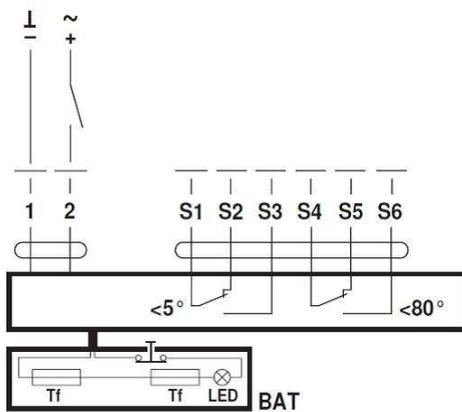
AC 230 V, open-close


**Cable colours:**

 1 = blue  
 2 = brown  
 S1 = violet  
 S2 = red  
 S3 = white  
 S4 = orange  
 S5 = pink  
 S6 = grey  
 Tf: Thermal fuse (see "Technical data")

**Wiring diagram BFL24-T and BFN24-T**

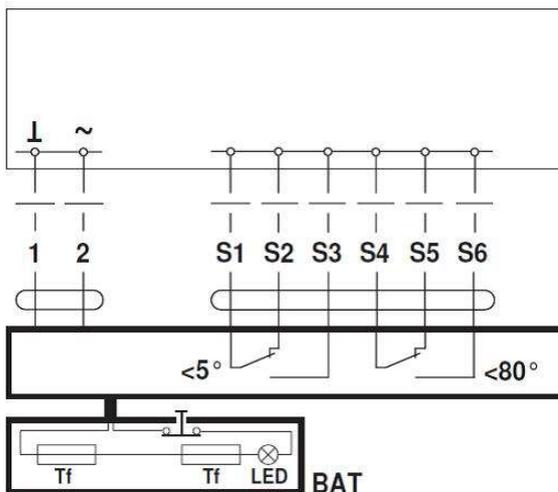
AC/DC 24 V, open-close


**Cable colours:**

 1 = black  
 2 = red  
 S1 = violet  
 S2 = red  
 S3 = white  
 S4 = orange  
 S5 = pink  
 S6 = grey  
 Tf: Thermal fuse (see "Technical data")

**Wiring diagram BFL24-T-ST and BFN24-T-ST**

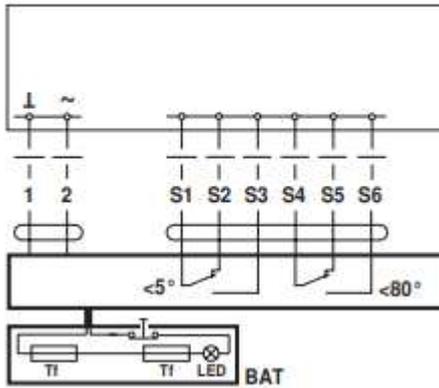
AC/DC 24 V, open-close





**Wiring diagram BF24-TN-ST**

AC/DC 24 V, open-close


**Technical data:**

	<b>BFL230-T</b>	<b>BFN230-T</b>
Nominal voltage	AC 230 V	AC 230 V
Nominal voltage frequency	50/60 Hz	50/60 Hz
Nominal voltage range	AC 198...264 V	AC 198...264 V
Power consumption in operation	3.5 W	5 W
Power consumption in rest position	1.1 W	2.1 W
Power consumption for wire sizing	6.5 VA	10 VA
Power consumption for wire sizing note	$I_{max}$ 4 A @ 5 ms	$I_{max}$ 4 A @ 5 ms
Auxiliary switch	2 x SPDT	2 x SPDT
Switching capacity auxiliary switch	1 mA...3 (0.5 inductive) A, AC 250 V	1 mA...3 (0.5 inductive) A, AC 250 V
Switching points auxiliary switch	$5^\circ / 80^\circ$	$5^\circ / 80^\circ$
Connection supply / control	Cable 1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)	Cable 1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)
Connection auxiliary switch	Cable 1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)	Cable 1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)
Cable length thermoelectric tripping device	0.5 m	1 m
Torque motor	Min. 4 Nm	Min. 9 Nm
Torque spring return	Min. 3 Nm	Min. 7 Nm
Direction of rotation motor	Can be selected by mounting L/R	Can be selected by mounting L/R
Manual override	With position stop	With position stop
Angle of rotation	Max. $95^\circ$	Max. $95^\circ$
Running time motor	$<60$ s / $90^\circ$	$<60$ s / $90^\circ$
Running time spring-return	20 s @ $-10...55^\circ\text{C}$ / $<60$ s @ $-30...-10^\circ\text{C}$	20 s @ $-10...55^\circ\text{C}$ / $<60$ s @ $-30...-10^\circ\text{C}$
Sound power level motor	$<43$ dB(A)	$<55$ dB(A)
Sound power level spring-return	$<62$ dB(A)	$<67$ dB(A)
Spindle driver	Form fit 12x12 mm, Continuous hollow shaft	Form fit 12x12 mm, Continuous hollow shaft
Position indication	Mechanically, with pointer	Mechanically, with pointer
Service life	Min. 60,000 safety positions	Min. 60,000 safety positions
Response temperature thermal fuse	Duct outside temperature $72^\circ\text{C}$ Duct inside temperature $72^\circ\text{C}$	Duct outside temperature $72^\circ\text{C}$ Duct inside temperature $72^\circ\text{C}$
Protection class IEC/EN	II Protective insulated	II Protective insulated
Protection class auxiliary switch IEC/EN	II Protective insulated	II Protective insulated
Degree of protection IEC/EN	IP54 in all mounting positions	IP54 in all mounting positions
EMC	CE according to 2014/30/EU	CE according to 2014/30/EU
Low voltage directive	CE according to 2014/35/EU	CE according to 2014/35/EU
Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14	IEC/EN 60730-1 and IEC/EN 60730-2-14
Mode of operation	Type 1.AA.B	Type 1.AA.B
Rated impulse voltage supply / control	4 kV	4 kV
Control pollution degree	3	3
Ambient temperature normal operation	$-30...55^\circ\text{C}$	$-30...55^\circ\text{C}$
Ambient temperature safety operation	The safety position will be attained up to max. $75^\circ\text{C}$	The safety position will be attained up to max. $75^\circ\text{C}$
Non-operating temperature	$-40...55^\circ\text{C}$	$-40...55^\circ\text{C}$
Ambient humidity	95% r.h., non-condensing	95% r.h., non-condensing
Maintenance	Maintenance-free	Maintenance-free
Weight	1.2 kg	1.5 kg

## Technical data:

**BFL24-T(-ST)**
**BFN24-T(-ST)**

Nominal voltage	AC/DC 24 V	AC/DC 24 V
Nominal voltage frequency	50/60 Hz	50/60 Hz
Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V	AC 19.2...28.8 V / DC 21.6...28.8 V
Power consumption in operation	2.5 W	4 W
Power consumption in rest position	0.8 W	1.4 W
Power consumption for wire sizing	4 VA	6 VA
Power consumption for wire sizing note	I <sub>max</sub> 8.3 A @ 5 ms	I <sub>max</sub> 8.3 A @ 5 ms
Auxiliary switch	2 x SPDT	2 x SPDT
Switching capacity auxiliary switch	1 mA...3 (0.5 inductive) A, AC 250 V	1 mA...3 (0.5 inductive) A, AC 250 V
Switching points auxiliary switch	5° / 80°	5° / 80°
Connection supply / control	Cable 1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)	Cable 1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)
Connection auxiliary switch	Cable 1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)	Cable 1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)
Cable length thermoelectric tripping device	0.5 m	1 m
Torque motor	Min. 4 Nm	Min. 9 Nm
Torque spring return	Min. 3 Nm	Min. 7 Nm
Direction of rotation motor	Can be selected by mounting L/R	Can be selected by mounting L/R
Manual override	With position stop	With position stop
Angle of rotation	Max. 95°	Max. 95°
Running time motor	<60 s / 90°	<60 s / 90°
Running time spring-return	20 s @ -10...55°C / <60 s @ -30...-10°C	20 s @ -10...55°C / <60 s @ -30...-10°C
Sound power level motor	<43 dB(A)	<55 dB(A)
Sound power level spring-return	<62 dB(A)	<67 dB(A)
Spindle driver	Form fit 12x12 mm, Continuous hollow shaft	Form fit 12x12 mm, Continuous hollow shaft
Position indication	Mechanically, with pointer	Mechanically, with pointer
Service life	Min. 60,000 safety positions	Min. 60,000 safety positions
Response temperature thermal fuse	Duct outside temperature 72°C Duct inside temperature 72°C	Duct outside temperature 72°C Duct inside temperature 72°C
Protection class IEC/EN	III Safety extra-low voltage	III Safety extra-low voltage
Protection class auxiliary switch IEC/EN	II Protective insulated	II Protective insulated
Degree of protection IEC/EN	IP54 in all mounting positions	IP54 in all mounting positions
EMC	CE according to 2014/30/EU	CE according to 2014/30/EU
Low voltage directive	CE according to 2014/35/EU	CE according to 2014/35/EU
Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14	IEC/EN 60730-1 and IEC/EN 60730-2-14
Mode of operation	Type 1.AA.B	Type 1.AA.B
Rated impulse voltage supply / control	0.8 kV	0.8 kV
Control pollution degree	3	3
Ambient temperature normal operation	-30...55°C	-30...55°C
Ambient temperature safety operation	The safety position will be attained up to max. 75°C	The safety position will be attained up to max. 75°C
Non-operating temperature	-40...55°C	-40...55°C
Ambient humidity	95% r.h., non-condensing	95% r.h., non-condensing
Maintenance	Maintenance-free	Maintenance-free
Weight	1.2 kg	1.5 kg

## Technical data:

**BF230-TN**

<b>Electrical data</b>	Nominal voltage	AC 230 V	
	Nominal voltage frequency	50/60 Hz	
	Nominal voltage range	AC 198...264 V	
	Power consumption in operation	8.5 W	
	Power consumption in rest position	3 W	
	Power consumption for wire sizing	11 VA	
	Power consumption for wire sizing note	I <sub>max</sub> 0.5 A @ 5 ms	
	Auxiliary switch	2 x SPDT	
	Switching capacity auxiliary switch	1 mA...6 A (3 A inductive), DC 5 V...AC 250 V (II reinforced insulation)	
	Switching points auxiliary switch	5° / 80°	
<b>Functional data</b>	Connection supply / control	Cable 1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)	
	Connection auxiliary switch	Cable 1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)	
	Torque motor	18 Nm	
	Torque fail-safe	12 Nm	
	Direction of rotation motor	Can be selected by mounting L/R	
	Manual override	with position stop	
	Angle of rotation	Max. 95°	
	Running time motor	<120 s / 90°	
	Running time fail-safe	16 s @ -10...55°C / <60 s @ -30...-10°C	
	Running time fail-safe note	@ -10...55°C / <60 s @ -30...-10°C	
	Sound power level, motor	45 dB(A)	
	Sound power level, fail-safe	63 dB(A)	
	Mechanical interface	Form fit 12x12 mm, Non-continuous hollow shaft	
	Position indication	Mechanically, with pointer	
	Service life	Min. 60'000 safety positions	
	<b>Safety</b>	Protection class IEC/EN	II reinforced insulation
		Protection class auxiliary switch IEC/EN	II reinforced insulation
		Degree of protection IEC/EN	IP54 in all mounting positions
		EMC	CE according to 2014/30/EU
Low voltage directive		CE according to 2014/35/EU	
Certification IEC/EN		IEC/EN 60730-1 and IEC/EN 60730-2-14	
Mode of operation		Type 1.AA.B	
Rated impulse voltage supply / control		4 kV	
Control pollution degree		3	
Ambient temperature normal operation		-30...50°C	
Ambient temperature safety operation		The safety position will be attained up to max. 75°C	
Storage temperature		-40...50°C	
Ambient humidity		Max. 95% r.H., non-condensing	
Servicing	maintenance-free		
<b>Weight</b>	Weight	3.1 kg	

## Technical data:

**BF24-TN**

<b>Electrical data</b>	Nominal voltage	AC/DC 24 V
	Nominal voltage frequency	50/60 Hz
	Nominal voltage range	AC 19.2...28.8 V / DC 21.6...28.8 V
	Power consumption in operation	7 W
	Power consumption in rest position	2 W
	Power consumption for wire sizing	10 VA
	Power consumption for wire sizing note	$I_{max}$ 8.3 A @ 5 ms
	Auxiliary switch	2 x SPDT
	Switching capacity auxiliary switch	1 mA...6 A (3 A inductive), DC 5 V...AC 250 V (II reinforced insulation)
	Switching points auxiliary switch	5° / 80°
	Connection supply / control	Cable 1 m, 2 x 0.75 mm <sup>2</sup> (halogen-free)
	Connection auxiliary switch	Cable 1 m, 6 x 0.75 mm <sup>2</sup> (halogen-free)
<b>Functional data</b>	Torque motor	18 Nm
	Torque fail-safe	12 Nm
	Direction of rotation motor	Can be selected by mounting L/R
	Manual override	with position stop
	Angle of rotation	Max. 95°
	Running time motor	<120 s / 90°
	Running time fail-safe	16 s $t_{amb} = 20^{\circ}C$
	Running time fail-safe note	$t_{amb} = 20^{\circ}C$
	Sound power level, motor	45 dB(A)
	Sound power level, fail-safe	63 dB(A)
	Mechanical interface	Form fit 12x12 mm, Non-continuous hollow shaft
	Position indication	Mechanically, with pointer
Service life	Min. 60'000 safety positions	
<b>Safety</b>	Protection class IEC/EN	III Safety Extra-Low Voltage (SELV)
	Protection class auxiliary switch IEC/EN	II reinforced insulation
	Degree of protection IEC/EN	IP54 in all mounting positions
	EMC	CE according to 2014/30/EU
	Low voltage directive	CE according to 2014/35/EU
	Certification IEC/EN	IEC/EN 60730-1 and IEC/EN 60730-2-14
	Mode of operation	Type 1.AA.B
	Rated impulse voltage supply / control	0.8 kV
	Control pollution degree	3
	Ambient temperature normal operation	-30...50 °C
	Ambient temperature safety operation	The safety position will be attained up to max. 75 °C
	Storage temperature	-40...50 °C
Ambient humidity	Max. 95% r.H., non-condensing	
Servicing	maintenance-free	
<b>Weight</b>	Weight	2.8 kg

## 6. CONDITIONS OF TRANSPORT AND STORAGE

Fire dampers KWP-L should be stored in cardboard boxes and/or on pallets. KWP-LE should have a pre-protected actuator cardboard box. Fire dampers should be stored indoors, providing protection against atmospheric agents, at a minimum temperature of +5°C.

Do not allow mechanical damage of damper, that may be caused e.g. blows or dropping.

After each transport, visual inspection of each fire damper must be carried out.

## 7. INSTALLATION TECHNOLOGY

Before installing fire dampers, check whether the damper has been damaged during transport or storage. Place the damper straight on a flat surface and check that the damper opens and closes properly throughout its full range of motion. Opening and full closing must be smooth, and the movement of rotating elements must not be hindered. If the damper partition is blocked, further installation is not allowed. In the case of dampers with an actuator, open the damper with the key attached to the actuator. Do not pull the damper by its partition to open/close, this may cause permanent damage to the device which is not covered by the warranty.

Before installation, protect the damper with foil or other covering material to protect it against dirt and, consequently, damage to the damper components. Moreover, in rectangular dampers, it is necessary to use assembly wedges and a spacer to protect the body against compression during assembly. Be especially careful not to let metal objects (e.g. tools, loose fasteners) get into the damper and stay there after installing the ventilation ducts.

To be able to preserve the declared resistance, insulation and smoke leakage EIS120, EIS90, EIS60, EIS30, dampers should be installed on wall, which was classified as EIS120, EIS90, EIS60, EIS30.

The KWP-L fire dampers may also be installed in buildings partitions with a lower fire resistance rating. In this case, the damper fire resistance rating is equal to the partition fire resistance rating, subject to the smoke leakage criterion.

Ducts made of flammable and non-flammable materials can be connected to the damper. Ducts should be installed that they can not load the damper during fire. Ducts lengthening during fire can be compensated by support and knee.

**ATTENTION:** Distance between fire dampers or fire damper and construction elements must be compatible with standard 1366-2:

- a. Minimal 200 mm between fire damper, which are installed in different ventilating ducts, and between flaps and openings in the building partition;
- b. Minimal 75 mm between fire damper and construction element (wall/ceiling).

## 7.1. INSTALLATION TECHNOLOGY - CEILING

- Make an opening in the ceiling with the 100 [mm] (acceptable 80 ÷ 120 [mm]) greater than the nominal dimensions of the fire damper = B+100 and H+100. When the opening are different than B+100 x H+100, the dimensions of mounting support should be customized.
- Put the closed fire damper into the installation opening and support or suspend, in this way that the minimum installation depth mark is on the plane of ceiling surface or inside the opening and that it is possible to install the mounting brackets
- Install the mounting brackets on each side.  
 Quantity of mounting brackets:  
 Side length up to 500 mm – 1 pcs.  
 Side length from 500 to 800 mm – 2 pcs.  
 Mount the mounting brackets to the ceiling using dowels.
- After setting the fire damper as described, mount the mounting brackets, fill the gap between the fire damper and the ceiling with cement, cement-lime mortar or concrete.
- After the mortar has dried (about 48 hours), remove the supports or suspensions, check the fire damper correct operation and leave it in open position.

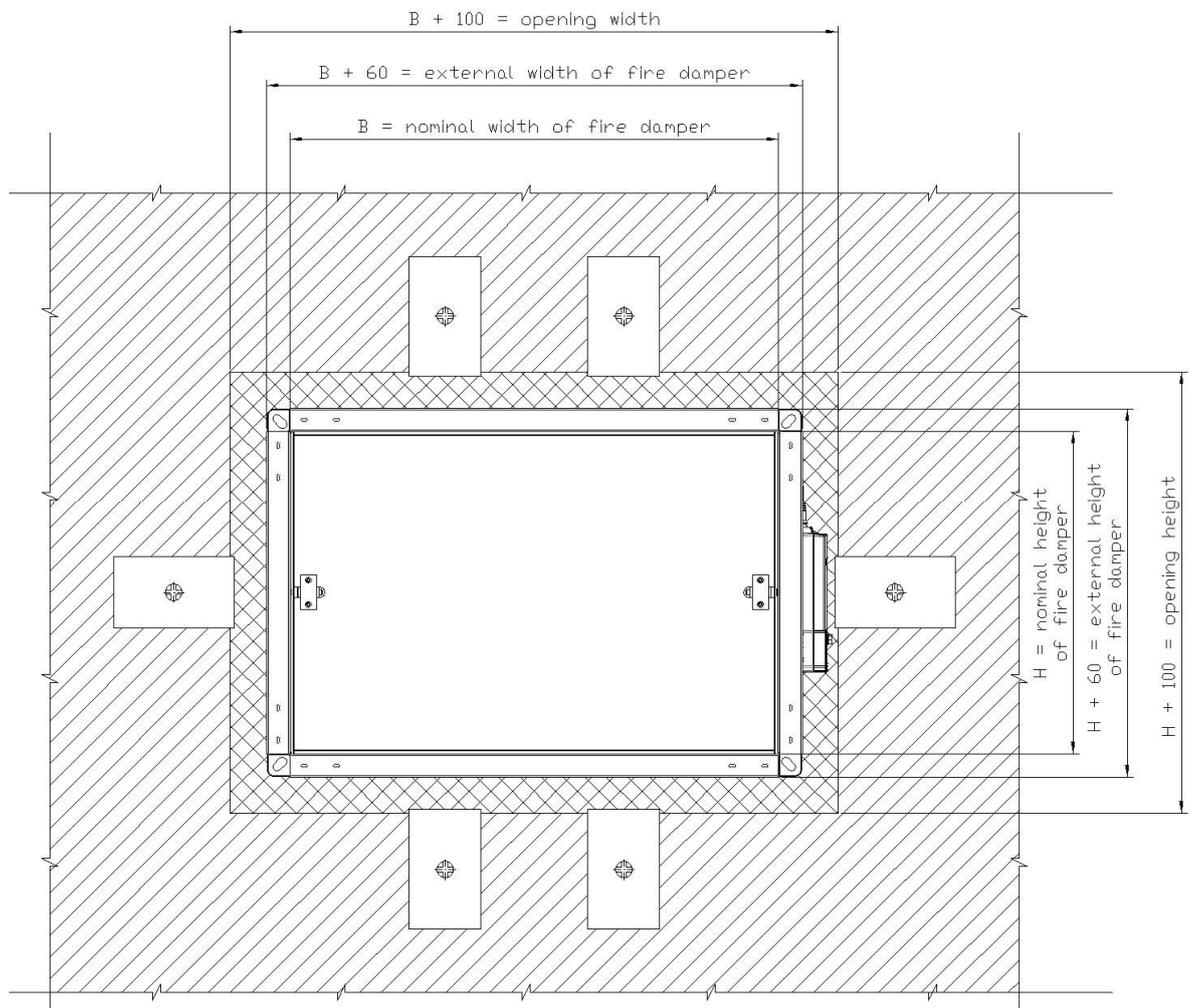


Figure 3. Installation method of fire dampers KWP-L in ceiling

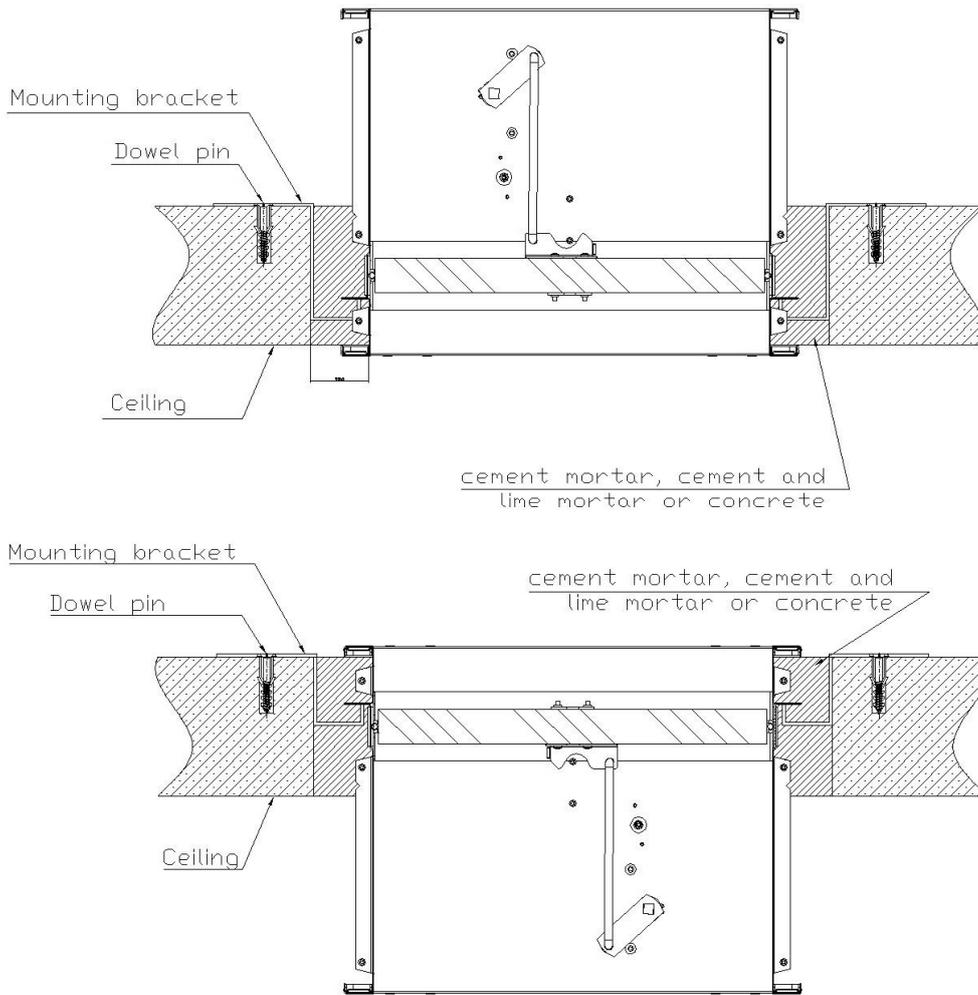


Figure 4. Installation method of fire dampers KWP-L in ceiling

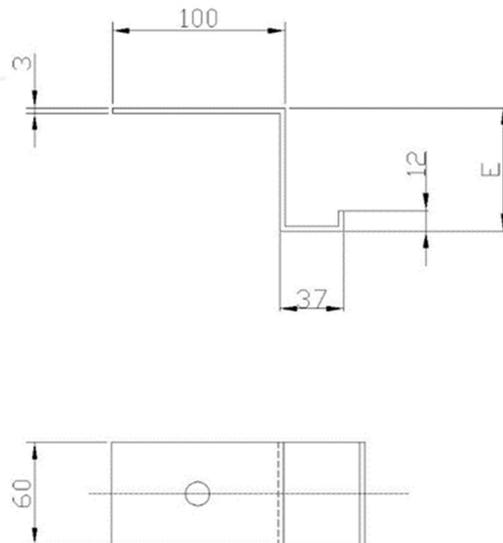


Figure 5. Proposed dimensions of mounting brackets for installation in a ceiling 140 mm thick;

	Actuator under ceiling	Actuator above ceiling
E [mm]	=Thickness of ceiling - 69	=120

For ceiling with thickness greater than 150 [mm]: connect the damper to the duct before the damper isolation with cement mortar (the damper frame will be bricked up along with a part of the duct).

## 7.2. INSTALLATION TECHNOLOGY – RIGID WALL

### 7.2.1. INSTALLATION USING MORTAR

- Make an opening in the wall with the dimensions 100 [mm] (acceptable 80 ÷ 120 [mm]) greater than the nominal dimensions of the fire damper =  $B+100$  and  $H+100$ .
- Put the closed fire damper into the installation opening and support or suspend, in this way that the minimum installation depth mark is on the plane of wall surface.
- After setting the fire damper as described, fill the gap between the fire damper and the wall with cement, cement-lime mortar or concrete.
- After the mortar has dried (about 48 hours), remove the supports or suspensions, check the fire damper correct operation and leave it in open position.

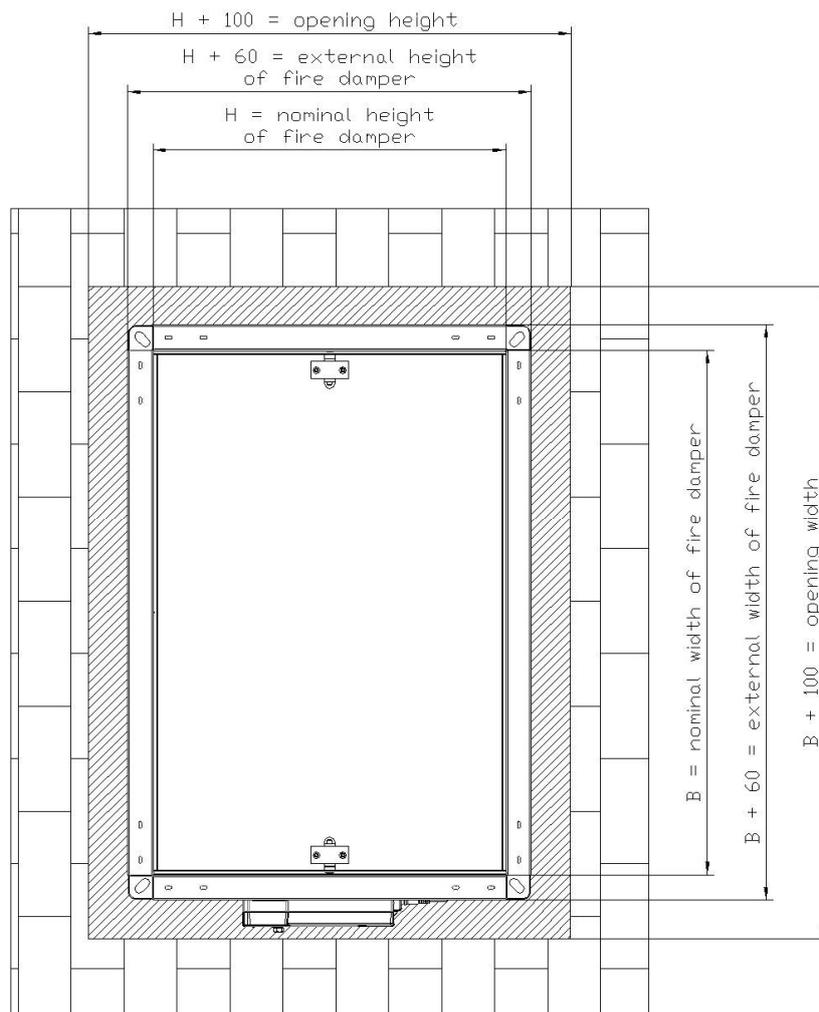


Figure 6. Installation method of fire dampers KWP-L in rigid wall with vertical rotation axis of baffle

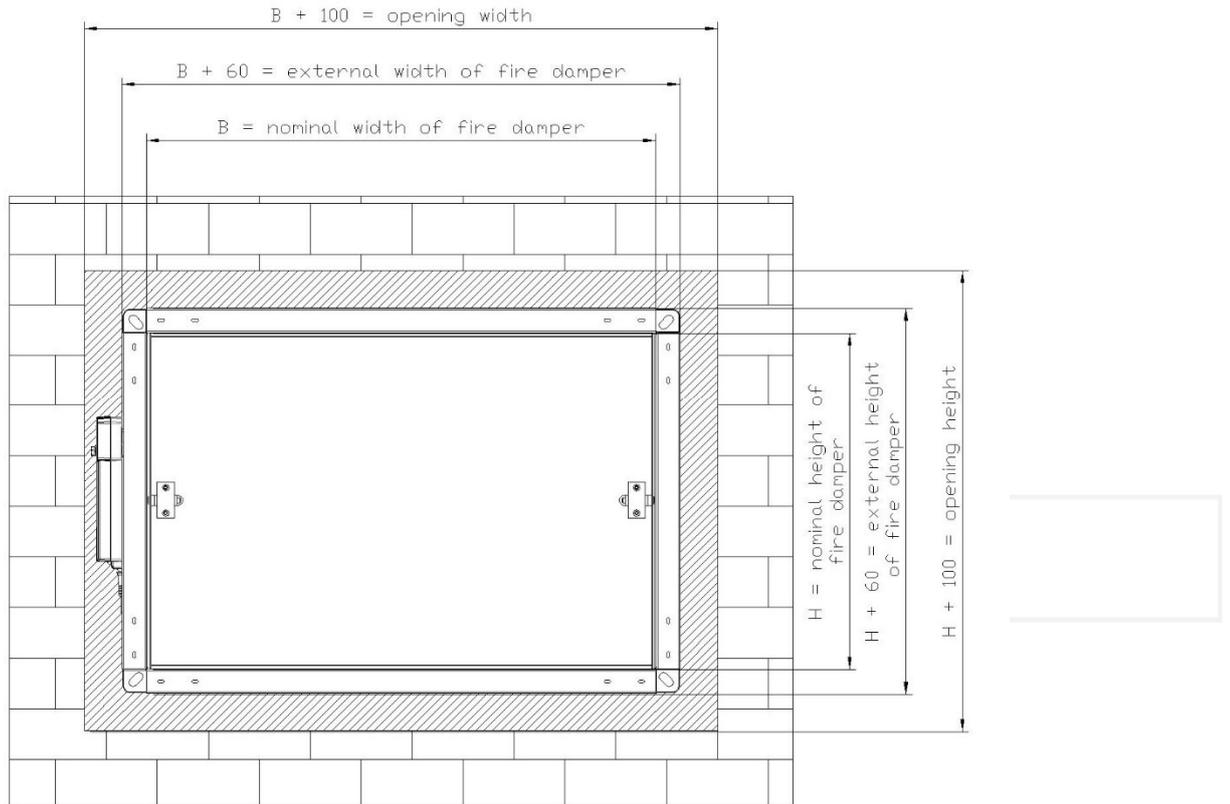


Figure 7. Installation method of fire dampers KWP-L in rigid wall with horizontal rotation axis of baffle

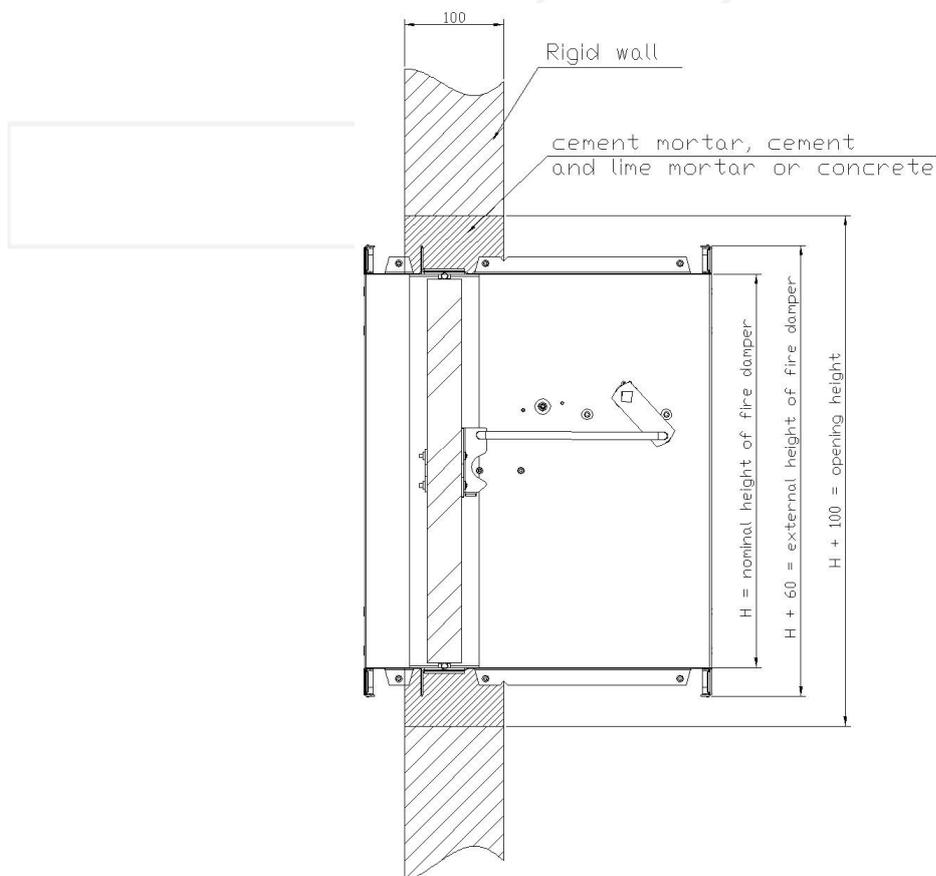


Figure 8. Installation method of fire dampers KWP-L in rigid wall

### 7.2.2. INSTALLATION USING MINERAL WOOL

- Make an opening in the wall with the dimensions 100 [mm] (acceptable 80 ÷ 120 [mm]) greater than the nominal dimensions of the fire damper =  $B+100$  and  $H+100$ .
- Put the closed fire damper into the installation opening and support or suspend, in this way that the minimum installation depth mark is on the plane of wall surface.
- After setting the fire damper as described, fill the gap between the fire damper and the wall with non-flammable mineral wool of high density, 100 kg/m<sup>3</sup> or more.
- Seal the place of filling with mineral wool using the sealing compounds Hilti Firestop Coating CP 673, Promastop-CC, Promaseal-Mastic or Soudal Firesilicone B1 FR.
- Mount collar, both side of wall, made of GKF boards, 12,5 mm thick and 150 mm wide, using screws (with a cut hole for the damper). For easy assembly, the collar can be made of two parts.
- After mounting the collar, remove the supports or suspension, check the fire damper correct operation and leave it in open position.

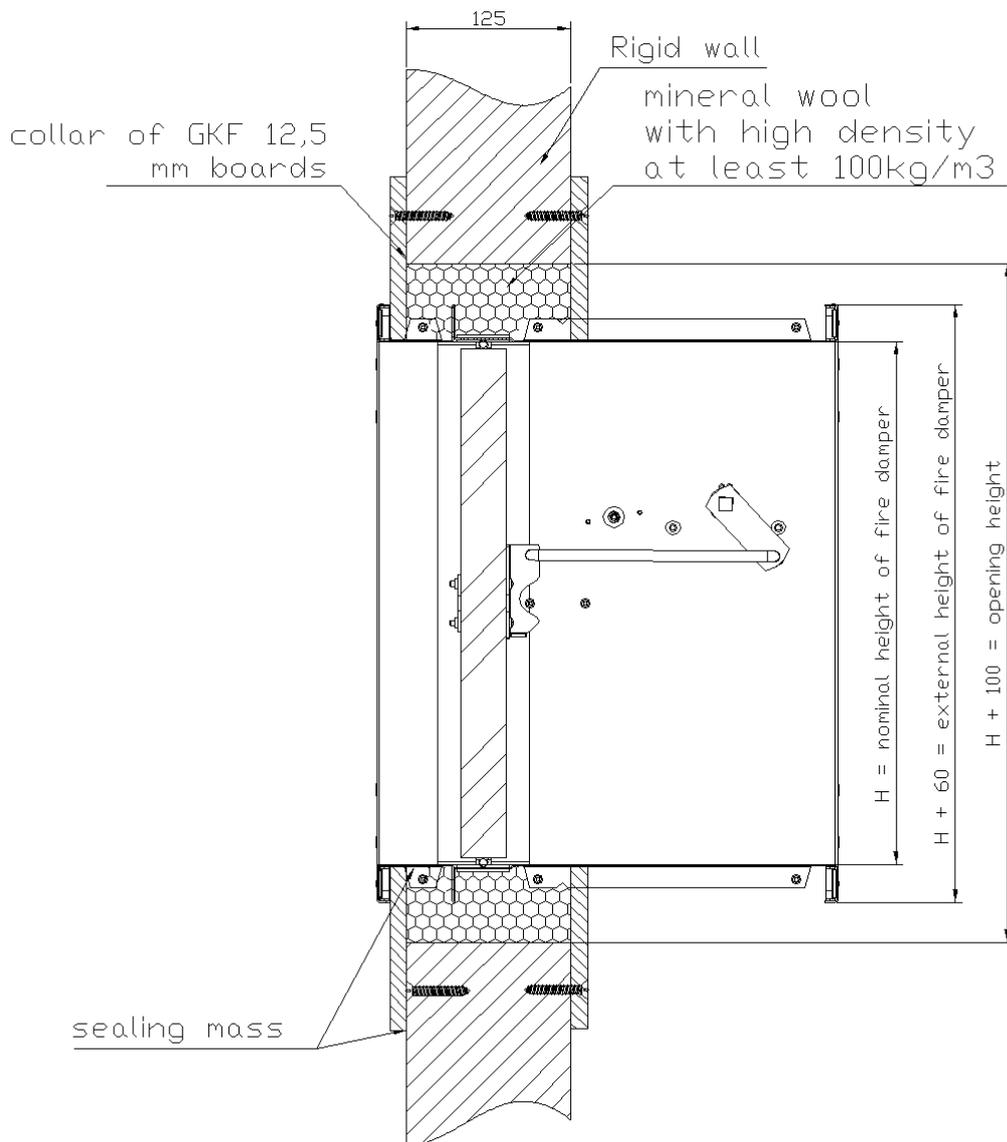


Figure 9. Installation method of fire dampers KWP-L in rigid wall

### 7.3. INSTALLATION TECHNOLOGY – FLEXIBLE WALL

- a. Make an opening in the wall with the dimensions 100 [mm] (acceptable 80 ÷ 120 [mm]) greater than the nominal dimensions of the fire damper = B+100 i H+100.
- b. Make a frame of two layers of GKF boards, 12,5 mm thick and the width relative to the width of opening, mounting by screws remembering to carefully seal the contact edges with a mastic: Hilti Firestop Coating CP 673, Promastop-CC, Promaseal-Mastic Soudal Firesilicone B1 FR.
- c. Put the closed fire damper into the installation opening and support or suspend, in this way that the minimum installation depth mark is on the plane of the flange surface.
- d. After setting the fire damper as described, fill the gap between the fire damper and the wall with non-flammable mineral wool of high density, 100 kg/m<sup>3</sup> or more.
- e. Seal the place of filling with mineral wool using the sealing compounds given in pts.2
- f. Mount collar, both side of wall, made of GKF boards, 12,5 mm thick and 150 mm wide, using screws.
- g. After mounting the collar, remove the supports or suspensions, check the fire damper correct operation and leave it in open position.

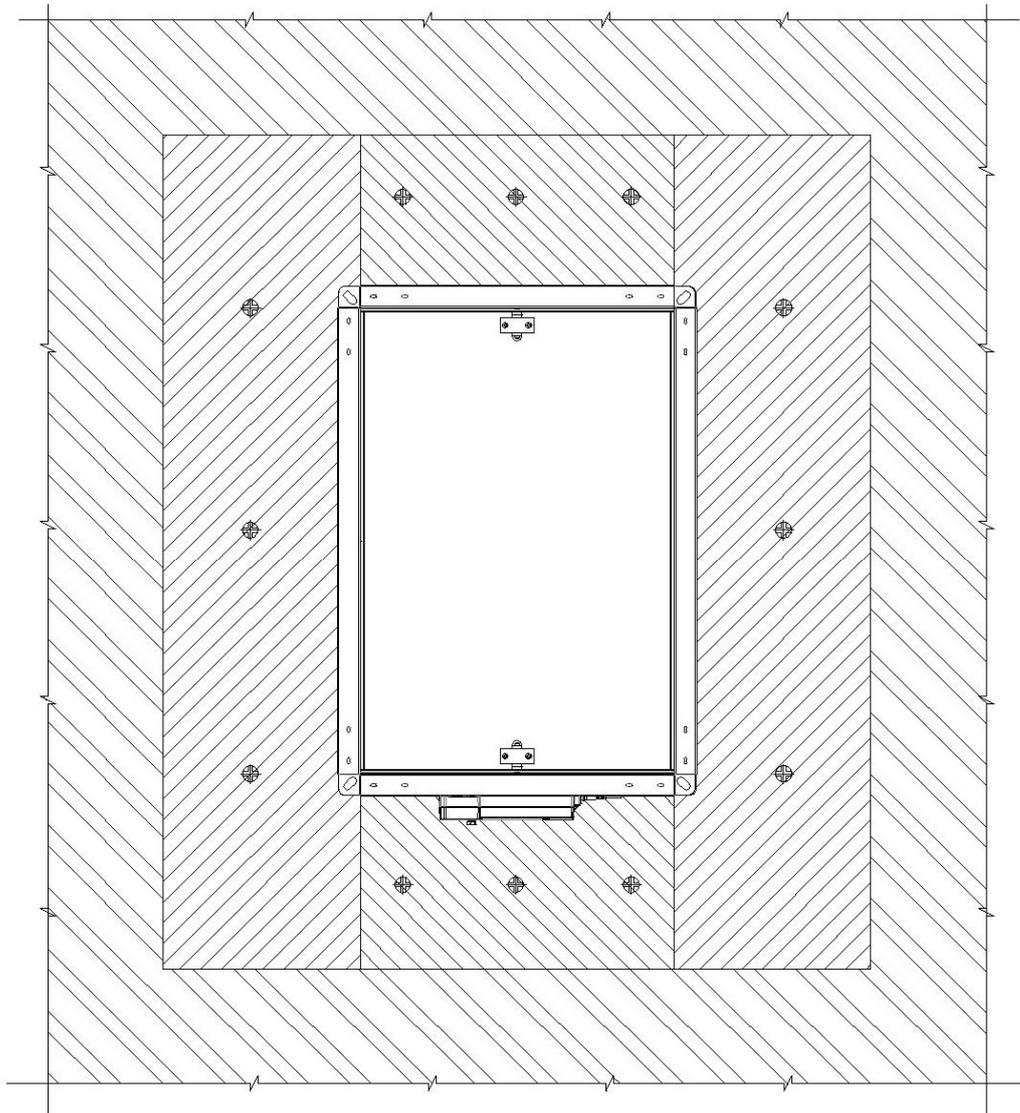


Figure 10. Installation method of fire dampers KWP-L in flexible wall with vertical rotation axis of baffle

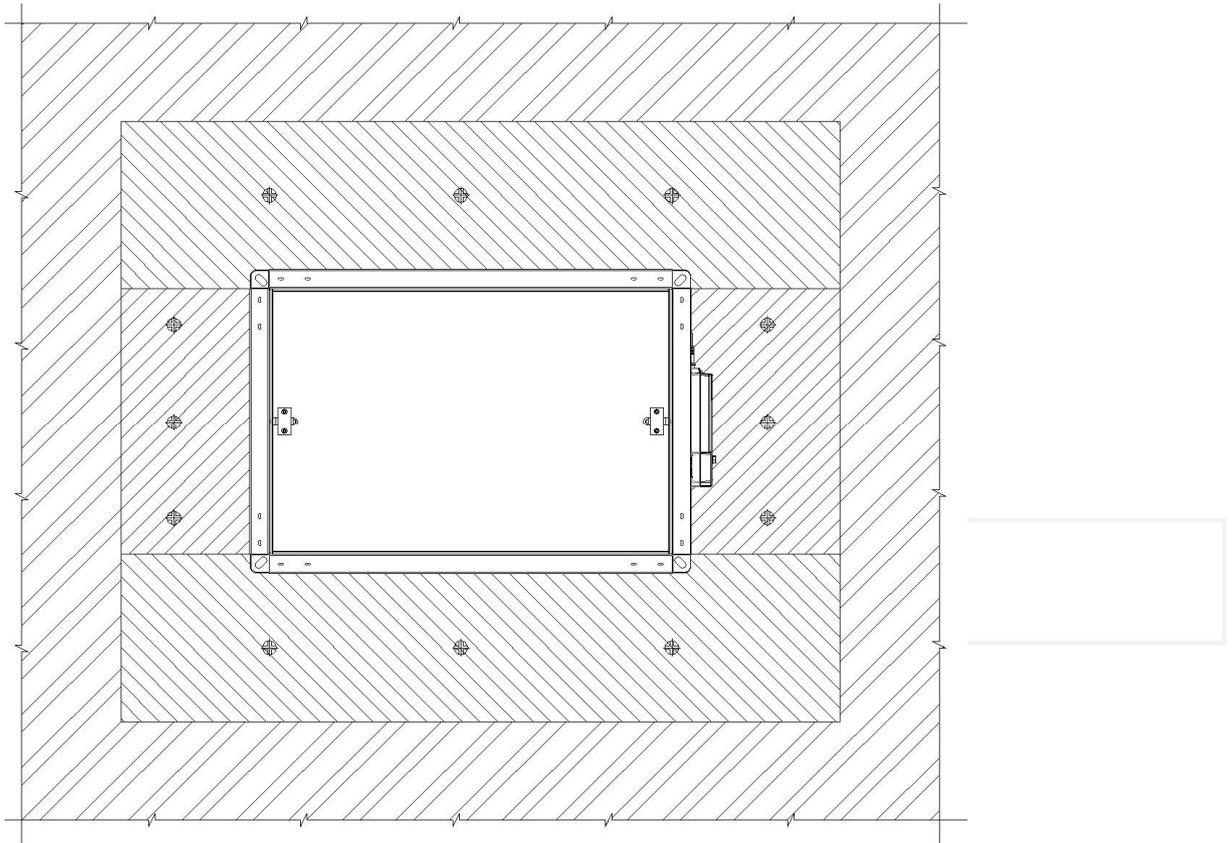


Figure 11. Installation method of fire dampers KWP-L in flexible wall with horizontal rotation axis of baffle

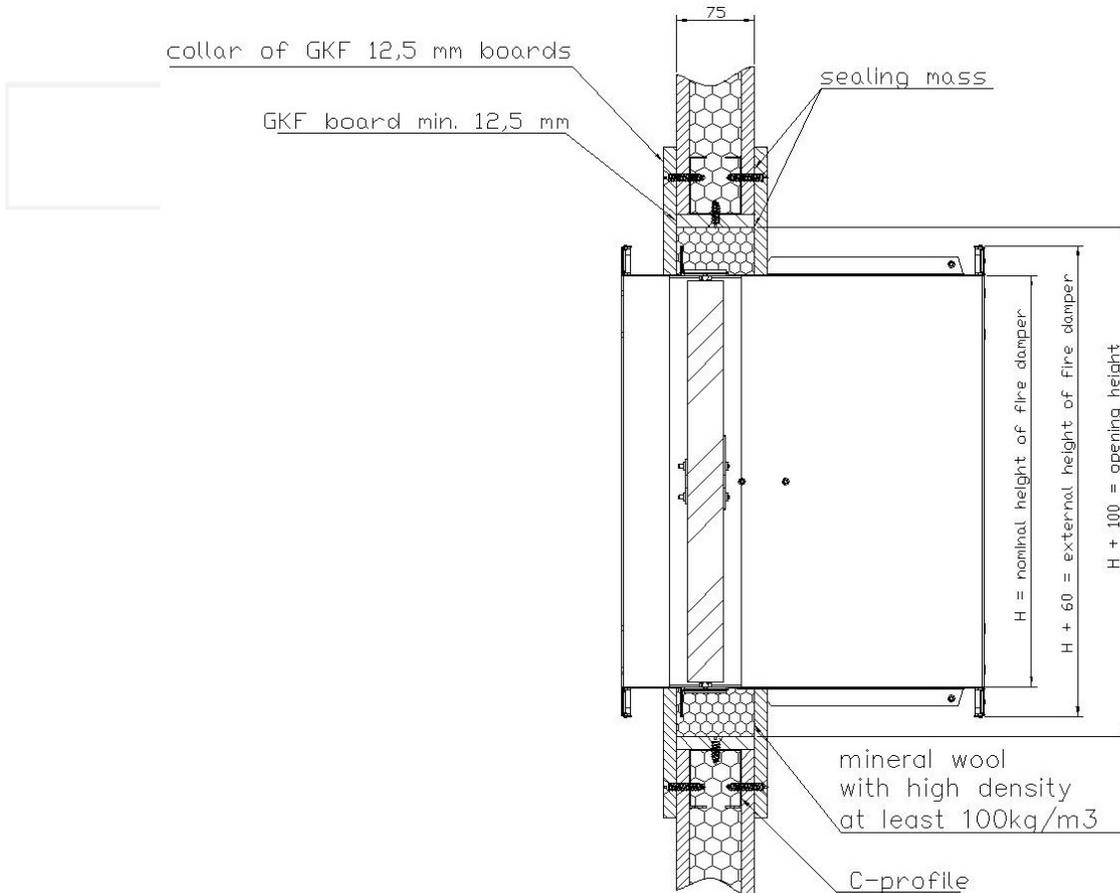


Figure 12. Installation method of fire dampers KWP-L in flexible wall 75 mm thick

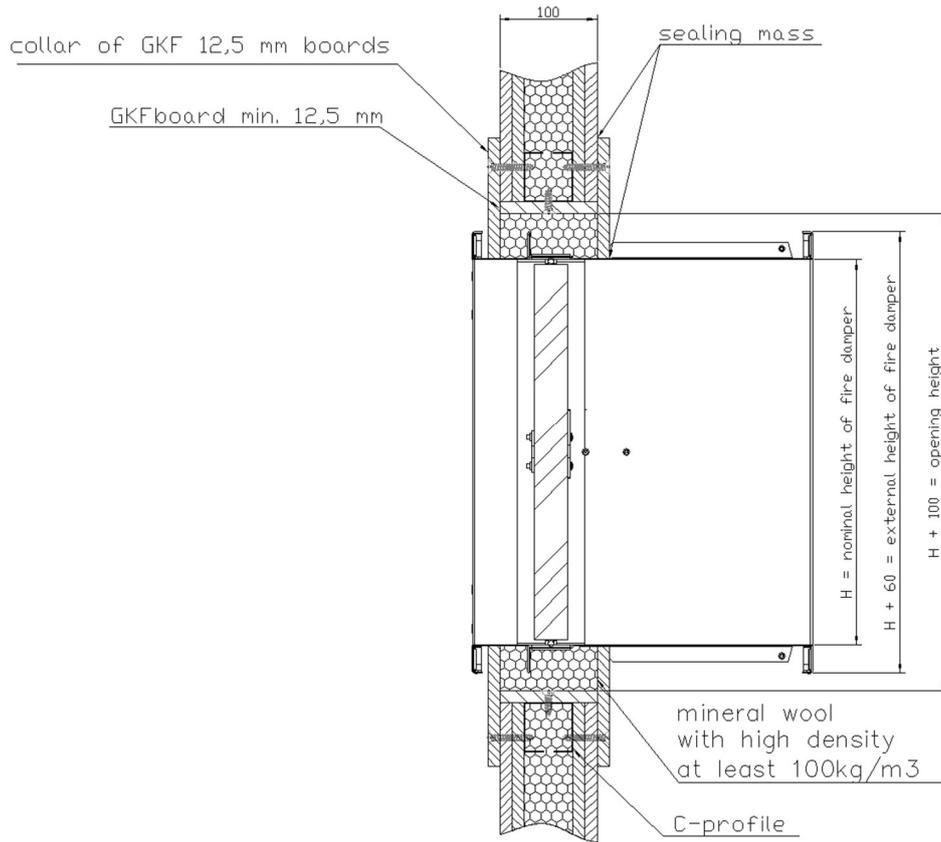


Figure 13. Installation method of fire dampers KWP-L in flexible wall 100 mm thick

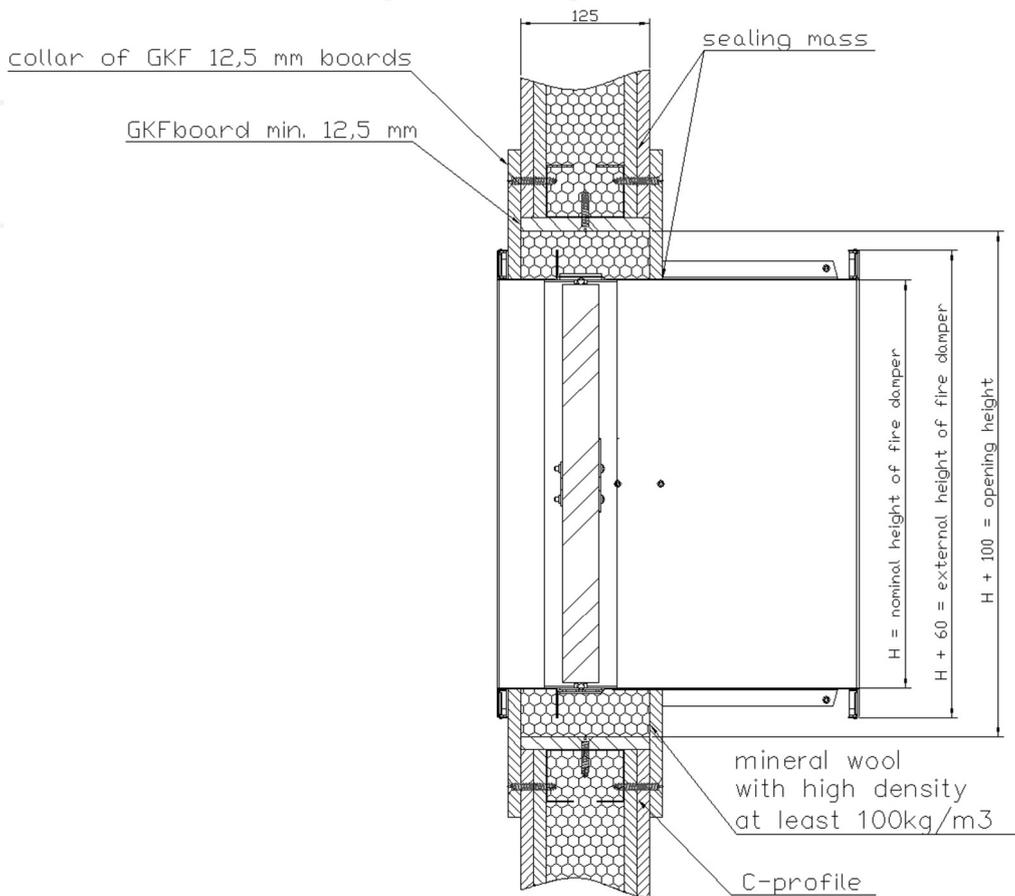


Figure 14. Installation method of fire dampers KWP-L in flexible wall 125 mm thick

## 7.4. INSTALLATION TECHNOLOGY – CONSTRUCTIONS OF GREAT THICKNESS

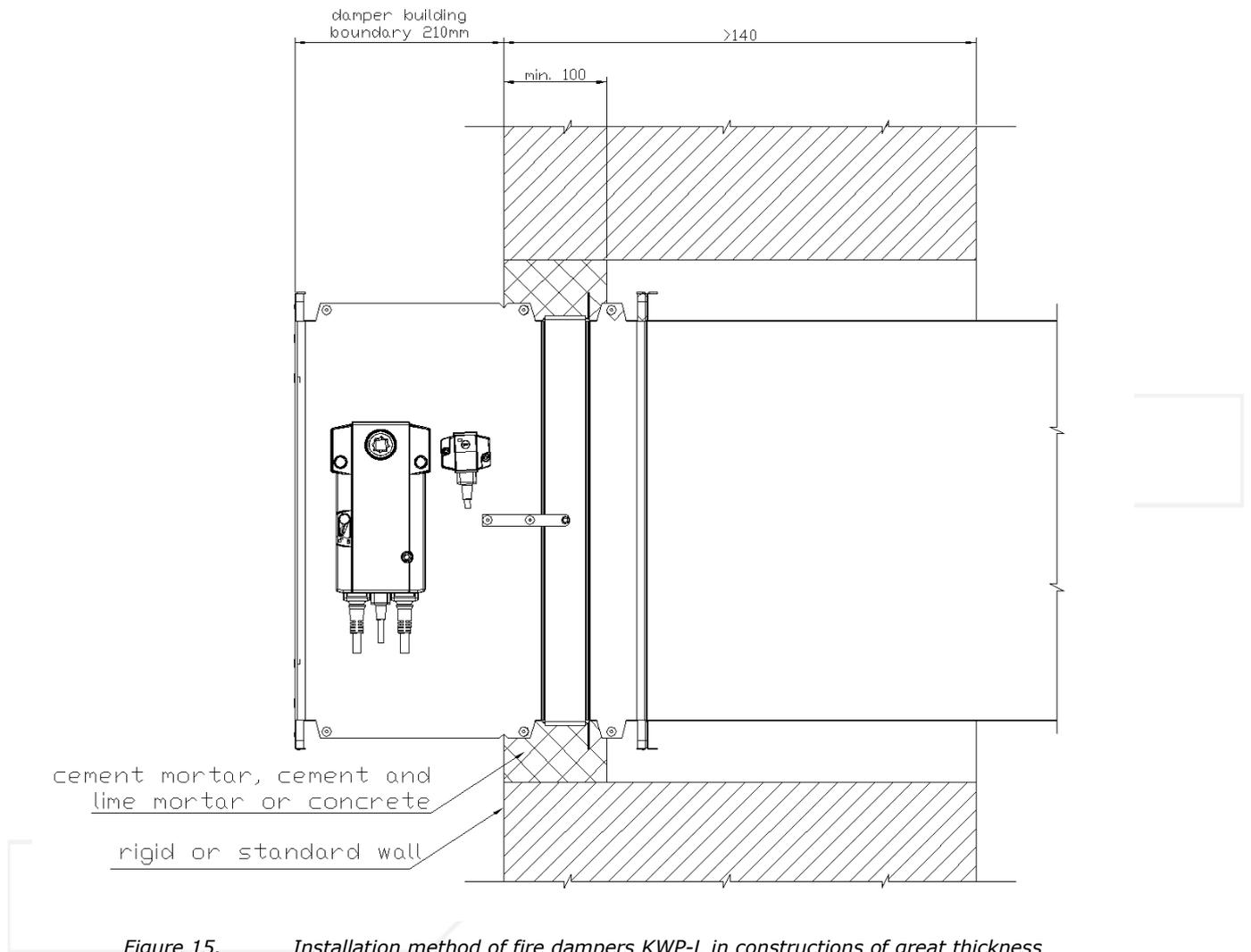


Figure 15. Installation method of fire dampers KWP-L in constructions of great thickness

In rigid and flexible wall construction and in ceiling with thickness less or equal to 140 mm, KWP-L fire dampers are mounted in such a way that the damper baffle axis matches the axis of the structure.

Whereas in case of walls and ceilings with thickness higher than 140 mm: the KWP-L fire dampers are mounted in such a way, that the damper building boundary i.e. 210 mm, is maintained (as in figure 15).

## 7.5. INSTALLATION TECHNOLOGY – MONTAGE AWAY FROM WALL CONSTRUCTION

- a. Make an opening in the wall with the dimensions 100 [mm] (acceptable 80 ÷ 120 [mm]) greater than the nominal dimensions of the fire damper = B+100 i H+100.
- b. Push the ventilation duct into the installation opening and seal it with high density mineral wool, 100 kg / m<sup>3</sup> or more.
- c. Install the closed damper to the duct and support or suspend it so that the damper and duct coaxially is maintained. Install the damper so that its drive is located outside the Promat duct.
- d. Coat the mineral wool placed in the installation opening on both sides with PROMASTOP CC layer, approx. 1 mm thick and approx. 100 mm wide.
- e. After installing the damper, and establishing its target position at a distance L from the fire barrier, proceed with the montage of the Promat duct according to the drawing and the following guidelines:
  - Make spacing band using PROMATECT-L500 panels with a thickness of 35 mm and dimensions 150x100 mm. For the width B ≤ 300 mm, make two bands, for a width B > 300 mm, make four bands. For an L ≥ 1000 mm distance, make an additional four bands.
  - Make individual sections of the Promat duct made of PROMATECT-L500 panels with a thickness of 50 mm as in the drawing.
  - Suspend the Promat duct along with the spacing strips in the spacing L + 55 using rails and threaded rods. Connect the duct with the wall using PROMAT K84 adhesive.
  - Connect the sides of the duct together using adhesive and 6.0x90 screws, spacing about 200 mm.
  - On the circumference of the damper, in place of the swelling gasket, place strips of mineral wool (density 100 kg / m<sup>3</sup> or more) with a profile of 46x30.
  - Make frontal bands of PROMATECT-L500 panels with a thickness of 50 mm and dimensions as shown in the drawing. Connect them to the duct using adhesive and screws.
  - In the place where the duct connects to the frontal band, make a sleeve joint band made of PROMATECT-H board, 20 mm thick and 100 mm wide. Remaining dimensions should be selected according to the drawing. Connect the band to the duct using adhesive and 4.5x50 screws.
  - Place the sealing band made of PROMATECT-L500 panels with a thickness of 50 mm and dimensions according to the figure at the connection of the Promat duct with the fire barrier.
  - Connect the band with the duct using adhesive and screws 6.0x90. The band must be connected the wall using the M8 anchors in a spacing of approx. 200 mm

**ATTENTION:** In case of lack of information regarding the damper installation, the assembly of the duct made of PROMAT boards should be carried out in accordance with the PROMADUCT-500 System, accordance with the National Technical Assessment No. ITB KOT 2021/1823 and PROMAT guidelines. The maximum distance from the building partition is 1000 mm.

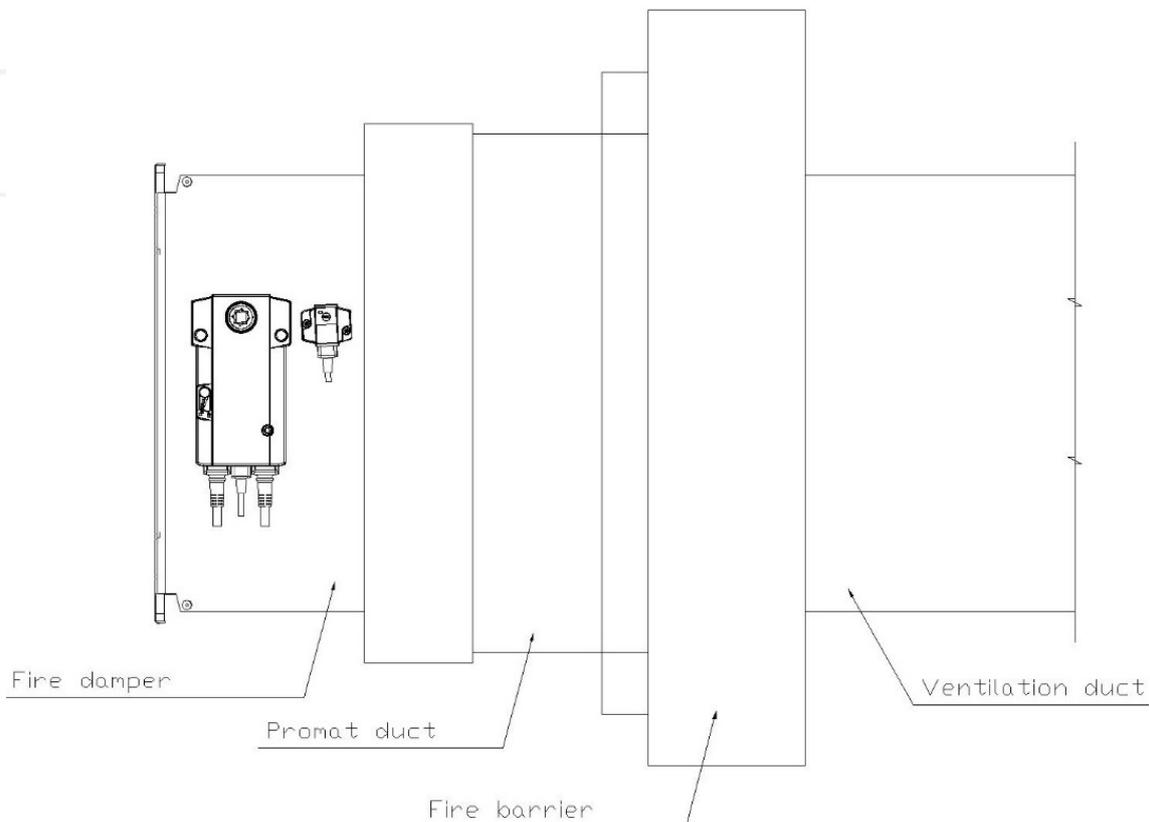


Figure 16. Installation of fire dampers KWP-L away from wall construction according to point 2

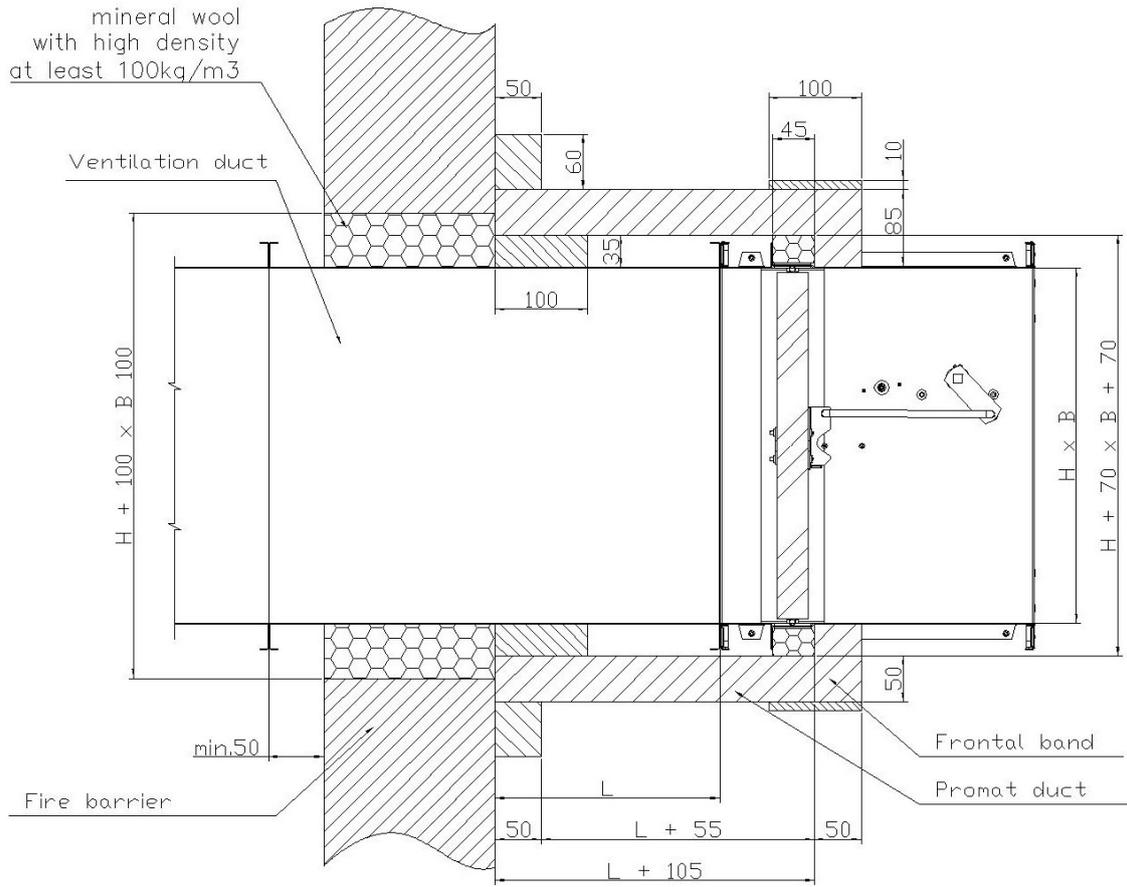


Figure 17. Installation of fire dampers KWP-L away from wall construction

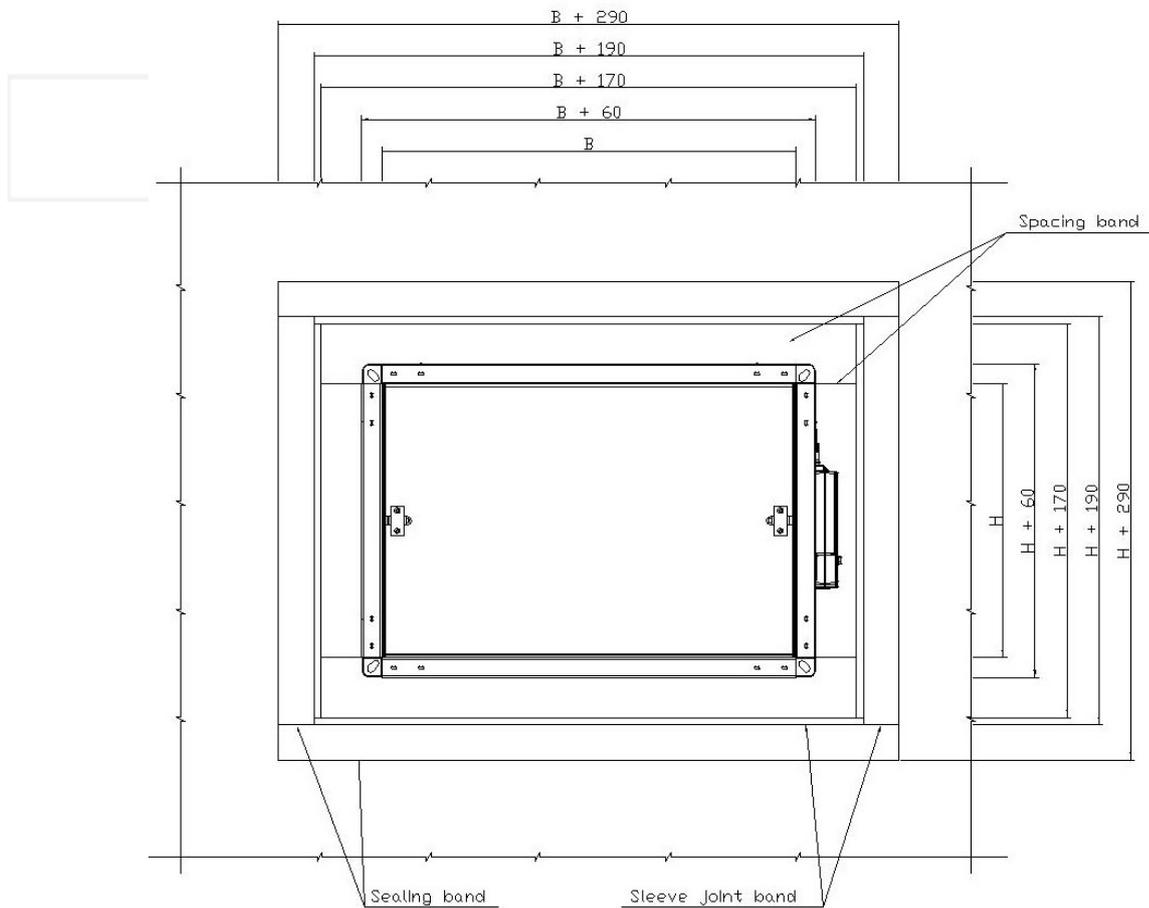


Figure 18. Installation of fire dampers KWP-L away from wall construction

## 8. REPLACING THE THERMAL FUSE ELEMENT IN KWP-L-S

Exchange must be performed on the closed position.  
 To replace the thermal fuse element:

- a. Release the spring **7** from the spring mechanism plate **1**.
- b. Unscrew the bolt **14** and pull out the entire thermal fuse element. The assembly of these elements consists of a thermal fuse element **16**, hook **6**, console **5**, washer **7**, release spring **9**, nut M8 **12**, round nut **8**, thermal fuse plate **13**. To replace the thermal fuse, press the hook **6** towards to the nut and put into console. When you put the thermal fuse, release the hook and push the lever of hand mechanism.
- c. Install the assembly of thermal fuse with the bolt **14**.
- d. Pull the spring onto spring mechanism plate **1**.
- e. Open the fire damper and check that it opens and closes correctly after push the hand release lever **11**.

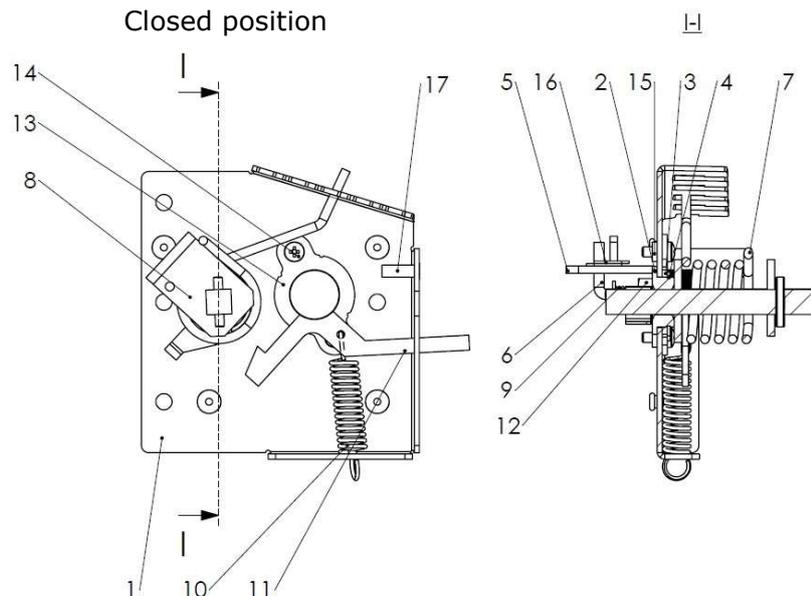


Figure 18. Spring mechanism – replacement of the thermal fuse element

## 9. COMMISSIONING

After assembling the device and installation into the control system, before putting the smoke control damper into operation, the following actions should be carried out and recorded:

- verify the correct assembly of the damper according to this Technical Documentation;
- check the correctness of the electrical installation in terms of power supply parameters and quality of execution;
- ensure that the damper has not been mechanically damaged during installation;
- verify the correct opening/closing of the damper, with the opening/closing time being maintained below 60 seconds;
- check the cleanliness of the device and ensure that there are no foreign elements present that could damage the device;
- ensure proper accessibility to the drive mechanism and thermal trigger mechanism - required for service and maintenance purposes;
- check the availability and legibility of labeling stickers.

After the installation of the KWP-L damper, before putting it into operation, a document must be prepared: 'Installation and Commissioning Protocol - Smoke control dampers'. This protocol should be signed by a person holding a current, personalized certificate or certificate issued by Smay Sp. z o. o. authorizing the installation of KWP-L dampers. A copy of this document should be sent electronically to the manufacturer ([www.smay.pl](http://www.smay.pl) → SERVICE AND WARRANTY tab → ADD START-UP PROTOCOL) within 30 days from the commissioning date (date indicated in the Installation and Commissioning Protocol for the KWP-L damper). Failure to comply with this formality will result in the loss of warranty for the device.

Installation and Commissioning Protocol - Smoke control dampers (universal for all dampers in the SMAY offer) is outlined below:

**INSTALLATION AND COMMISSIONING PROTOCOL - SMOKE CONTROL DAMPERS**

<p><u>Data of the company performing the installation and commissioning (seal)</u></p>	<p><u>Device manufacturer</u></p>
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OBJECT / INSTALLATION LOCATION	INSTALLATION AND COMMISSIONING EXECUTION															
Object Name: ..... ..... ..... ..... ..... Object Address:..... ..... ..... .....	<table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td rowspan="4" style="width:20%; text-align: center; vertical-align: middle;">Damper Type:</td> <td><input type="checkbox"/> KTM-O</td> <td><input type="checkbox"/> KTS-O</td> <td><input type="checkbox"/> WP-O</td> </tr> <tr> <td><input type="checkbox"/> KWP-P</td> <td><input type="checkbox"/> KWP-Ex</td> <td><input type="checkbox"/> KWP-L</td> </tr> <tr> <td><input type="checkbox"/> WKP-O</td> <td><input type="checkbox"/> WKP-P</td> <td><input type="checkbox"/> WKZ-O</td> </tr> <tr> <td><input type="checkbox"/> WKS-P</td> <td></td> <td></td> </tr> </table> <table border="1" style="width:100%; border-collapse: collapse;"> <tr> <td style="width:20%; text-align: center; vertical-align: middle;">Commissioning Date</td> <td>..... ..... .....</td> </tr> </table>	Damper Type:	<input type="checkbox"/> KTM-O	<input type="checkbox"/> KTS-O	<input type="checkbox"/> WP-O	<input type="checkbox"/> KWP-P	<input type="checkbox"/> KWP-Ex	<input type="checkbox"/> KWP-L	<input type="checkbox"/> WKP-O	<input type="checkbox"/> WKP-P	<input type="checkbox"/> WKZ-O	<input type="checkbox"/> WKS-P			Commissioning Date	..... ..... .....
Damper Type:	<input type="checkbox"/> KTM-O		<input type="checkbox"/> KTS-O	<input type="checkbox"/> WP-O												
	<input type="checkbox"/> KWP-P		<input type="checkbox"/> KWP-Ex	<input type="checkbox"/> KWP-L												
	<input type="checkbox"/> WKP-O		<input type="checkbox"/> WKP-P	<input type="checkbox"/> WKZ-O												
	<input type="checkbox"/> WKS-P															
Commissioning Date	..... ..... .....															

**SCOPE OF CONTROL AFTER INSTALLATION AND COMMISSIONING**

**A** - Correctness of damper assembly according to the Technical Documentation Record (DTR);  
**B** - Correctness of the electrical installation in terms of power supply parameters and quality of execution;  
**C** - Damper has not been mechanically damaged during installation;  
**D** - Correct opening/closing of the damper, with the opening/closing time being maintained below 60 seconds;  
**E** - Cleanliness of the device, and absence of foreign elements that could lead to device damage;  
**F** - Maintenance of proper accessibility to the drive mechanism and thermal trigger - required for service and maintenance purposes;  
**G** - Availability and legibility of labeling stickers.

**N** - negative result  
**P** - positive result

DAMPERS				CHECKLIST OF ACTIVITIES													
No.	Identification	Type	Serial Number	A		B		C		D		E		F		G	
				P	N	P	N	P	N	P	N	P	N	P	N	P	N
1																	
2																	
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**Remarks:**

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**Contractor's Declaration**

We confirm the execution of the protocol in accordance with the guidelines and Technical Documentation of the manufacturer and the manufacturer's instructions from the assembly manual.

Control Result: **Positive / Negative**

Recommendations: None / as per the remarks above

Review Contractor		Authorization Number <small>(issued by Smay company)</small>	Signature	Client Confirmation:
1.				
2.				

## 10. PERIODIC MAINTENANCE AND SERVICING RULES

Before starting any operational and maintenance work, you must familiarize yourself with this documentation. This obligation particularly falls on individuals responsible for operating the device or equipment within the scope of operation, maintenance, and service. In the absence of technical personnel with qualifications specified by the manufacturer, the inspection/maintenance of current devices should be carried out by the SMAY Manufacturer's Service or an Authorized SMAY Service/SMAY Service Partner.

Damage to the KWP-L damper resulting from failure to comply with the guidelines contained in the documentation will not be covered by warranty repairs.

After installing KWP-L smoke control dampers and with the system activated, it is necessary to conduct regular inspections and record them as presented in the Annual Inspection Protocol - Smoke control dampers (included below) **no less frequently than every 12 months or in periods resulting from local legislation. If necessary, inspections should be conducted more frequently.**

The fact of inspecting the technical condition and servicing of the device should be documented by an inspection protocol, the template of which has been included in this documentation.

Failure to implement the above guidelines regarding periodic inspection results in the device not being allowed for further operation. Simultaneously such a device loses the manufacturer's warranty protection in accordance with the OWG

All activities related to the replacement or modification of device components can only be carried out by the SMAY Manufacturer's Service or an Authorized SMAY Service/SMAY Service Partner. Elements that have been factory sealed should have intact original seals applied by the SMAY Manufacturer's Service or an Authorized SMAY Service/SMAY Service Partner.

The KWP-L damper does not require any protective measures other than regular maintenance/technical inspections and proper care, including keeping the damper elements clean. The damper can be cleaned using a dry cloth or brush. Dirt and other contaminants can be removed using commonly available cleaning agents. Do not use aggressive, corrosive, or sharp tools.

On the housing of fire damper there is an inspection opening, which enables making an inspection and checking the condition of the drive system. inspection opening is sealed by ceramic gasket and it is installed by M5x16 screw.

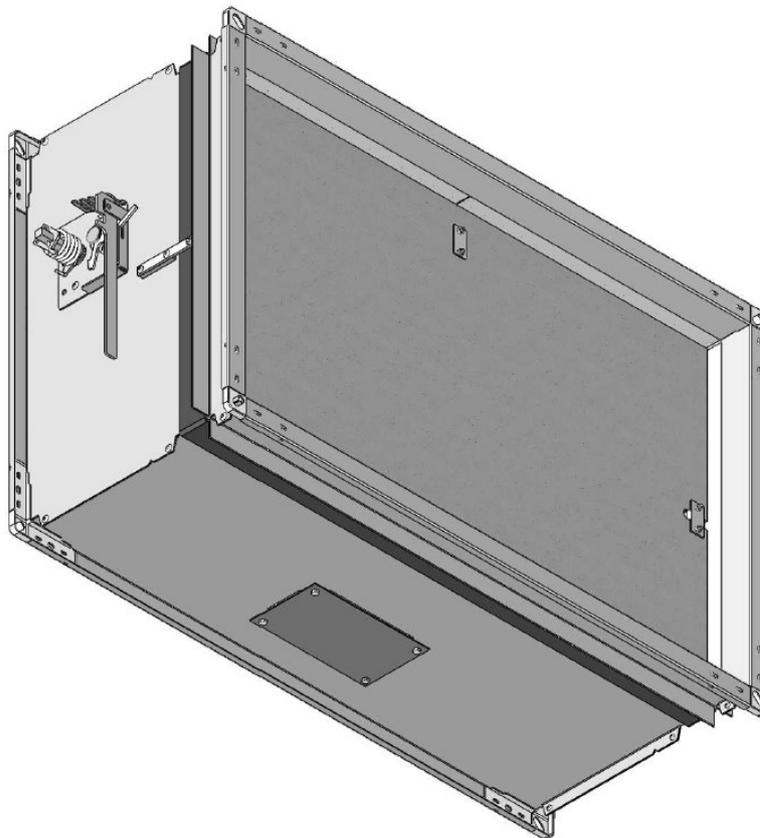


Figure 2. Inspection opening in KWP-L damper

Below is a list of recommended periodic inspection activities along with possible faults (universal for all dampers in the SMAY offer).

<b>ANNUAL INSPECTION PROTOCOL - SMOKE CONTROL DAMPERS</b>			
<u>Company performing the inspection (seal)</u>			
OBJECT / INSTALLATION LOCATION		INSPECTION EXECUTION	
Nazwa obiektu: .....		Date of execution: .....	.....
Adres obiektu: .....		Subject of review / Damper type:	<input type="checkbox"/> KTM-O <input type="checkbox"/> KTS-O <input type="checkbox"/> KWP-O <input type="checkbox"/> KWP-P <input type="checkbox"/> KWP-Ex <input type="checkbox"/> KWP-L <input type="checkbox"/> WKP-O <input type="checkbox"/> WKP-P <input type="checkbox"/> WKZ-O <input type="checkbox"/> WKS-P
		Total number of devices: .....	.....
SCOPE OF THE REVIEW PERFORMED			
Inspection activities <small>(in accordance with the attachment)</small>		Status of inspection activities	
		Performed <small>(Yes/No)</small>	Evaluation <small>(Positive/Negative)</small>
1	Visual inspection of dampers		
2	Control of damper actuator		
3	Trigger inspection		
4	Inspection of smoke control damper operation		
5	Leaving dampers in operational position		
<b><i>A detailed list of devices subjected to inspection is presented in Attachment No. 1: 'List of Devices,' which is an integral part of this inspection protocol.</i></b>			
REMARKS / RECOMMENDATIONS <small>(enumerate from consecutive numbers)</small>			
..... ..... ..... ..... ..... ..... ..... ..... .....			



Checklist of activities:		Legend for remarks: Remarks with the symbol (K) denote critical remarks that result in a negative control outcome for the damper.
<b>A.</b>	Reading data from the nameplate sticker of the damper	<b>1. (K)</b> lack of access to the damper for inspection; <b>2.</b> absence of a visible nameplate sticker; <b>3.</b> illegible data on the sticker;;
<b>B.</b>	Assessment of the condition of the damper enclosure	<b>4. (K)</b> absence or severely damaged enclosure of the damper in the wall; absence or severely damaged fire insulation of the damper installed on the duct; <b>5.</b> minor damage to the damper enclosure or suspicion of enclosure not compliant with manufacturer's guidelines;
<b>C.</b>	Assessment of the condition of the damper casing	<b>6.</b> damage to casing, perforation, bending, corrosion;
<b>D.</b>	Assessment of the condition of the partition and drive transmission	<b>7. (K)</b> lack of access to inspect the inside of the damper; <b>8. (K)</b> damage to the partition or gears*, cracking, delamination; <b>9. (K)</b> damage to the partition bearings or drive transmission mechanisms;
<b>E.</b>	Assessment of the condition of the swelling seal and ventilation	<b>10. (K)</b> damage to the swelling seal, noticeable loss, lack of continuity around the partition; <b>11.</b> damage to the ventilation seal, noticeable loss, detachment from the mounting location;
<b>F.</b>	Assessment of damper cleanliness, cleaning	<b>12. (K)</b> severe soiling of damper components impossible to remove;
<b>G.</b>	Assessment of manual mechanism*	<b>13. (K)</b> damage to manual mechanism (e.g., rotating or loose spring); <b>14.</b> lack of indication of damper position status;
<b>H.</b>	Assessment of the actuator* (compliance of the symbol with the nameplate, warranty seal)	<b>15. (K)</b> lack of actuator response to power supply; <b>16. (K)</b> actuator spring damage; <b>17. (K)</b> actuator symbol not matching the nameplate; <b>18.</b> warranty seal broken; <b>19.</b> noticeable mechanical damage to actuator; <b>20.</b> lack of service access to actuator; <b>21.</b> improper manual actuation of the actuator;
<b>I.</b>	Assessment of damper electrical connection*	<b>22. (K)</b> damage to power supply cable; <b>23.</b> lack of access to junction box;
<b>J.</b>	Inspection of mechanical trigger*	<b>24. (K)</b> lack of a fusible link element; <b>25. (K)</b> non-factory method of holding the damper in the open position; <b>26. (K)</b> trigger embedded in the wall;
<b>K.</b>	Inspection of electrical trigger*	<b>27. (K)</b> lack of response to pressing the test button on the trigger; <b>28. (K)</b> unscrewed or improperly mounted trigger; <b>29.</b> trigger embedded in the wall;
<b>L.</b>	Opening and closing of the damper	<b>30. (K)</b> inability to fully transition the partition from closed to open position and vice versa; <b>31. (K)</b> rubbing of the partition against the enclosure during position change;
<b>M.</b>	Assessment of maintaining the open position	<b>32.</b> lack of damper retention in the open position;
<b>N.</b>	Assessment of proper closure of the damper	<b>33. (K)</b> lack of full closure of the partition;
<b>O.</b>	Assessment of proper response to control signal from SAP or voltage loss	<b>34.</b> lack of or improper response to control signal; <b>35. (K)</b> no response to power loss (applies to shut-off dampers); <b>36. (K)</b> operation not in accordance with control matrix (applies to fire ventilation dampers); <b>37.</b> lack of feedback on damper status to SAP;;
		<b>99.</b> Other

\* If they occur in the controlled type of damper



## 11. CLASSIFICATION OF DAMPERS FOR REPAIR

The authorized service personnel of the manufacturer or trained companies authorized by them are responsible for removing any detected damages during the periodic inspection. In case of malfunction or damage, the user is obliged to notify the manufacturer or an authorized service company.

After each activation of the damper as a result of a fire action at the facility, it is necessary to assess its technical condition, and consequently qualify it for repair or replacement with a new one. The assessment can only be carried out by the manufacturer's service personnel. Repair work or replacement of the damper after activation due to a fire action at the facility is not covered by the warranty.

## 12. WARRANTY CONDITIONS

The manufacturer provides a warranty for the delivered products, on the terms set forth in the Agreement or the General Warranty Conditions of Smay, Sp. z o.o. The warranty does not cover defects resulting from improper storage, transportation, installation, and commissioning, operation, periodic maintenance, service, especially mechanical damage and damage to anti-corrosive coatings.

The manufacturer is exempt from warranty obligations if the user introduces structural changes independently, installs the product by the purchaser contrary to the Installation Instructions and Technical Conditions of Sale (DTR), exceeds the declared durability of the damper, defects due to improper periodic maintenance, and when there is permanent removal of the product nameplate or lack of legibility and verification of the device type.

The General Warranty Conditions (OWG) and General Sales Conditions (OWS) documents are available on the website [www.smay.pl](http://www.smay.pl)



### ATTENTION!

#### Installation and Commissioning Protocol - Fire Dampers:

- The protocol should be signed by a person holding a valid, personalized certificate or authorization issued by Smay Sp. z o. o., authorizing the installation of fire dampers.
- A copy of this document must be sent to the manufacturer electronically ([www.smay.pl](http://www.smay.pl) → SERVICE AND WARRANTY tab → ADD COMMISSIONING PROTOCOL).
- A copy of this document must be sent within 30 days from the date of commissioning (date specified in the Installation and Commissioning Protocol - Fire Dampers).

The template of the Installation and Commissioning Protocol - Fire Dampers is available in the Technical Documentation



### ATTENTION!

#### Annual Inspection Protocol - Fire Dampers:

- The protocol should be signed by a person holding a valid, personalized certificate or authorization issued by Smay Sp. z o. o., authorizing inspections of fire dampers.
- In order to maintain the warranty, the employee conducting inspections of SMAY fire dampers is required, upon completion of such inspection, to submit the Annual Inspection Protocol to the manufacturer electronically ([www.smay.pl](http://www.smay.pl) → SERVICE AND WARRANTY tab → ADD COMMISSIONING PROTOCOL)

The template of the Annual Inspection Protocol - Fire Dampers is located at the end of the Technical Documentation.

**ATTENTION!**

**The templates of forms attached to this Technical Documentation (related to installation, commissioning, inspections) are the intellectual property of Smay sp. z o.o. Copying, duplicating, and using them for purposes other than those specified in this Technical and Operating Documentation is prohibited. To maintain the warranty, it is required to fill them out and deliver them to SMAY sp. z o.o. within 30 days from the date of installation/commissioning and inspection (other forms will not be accepted).**