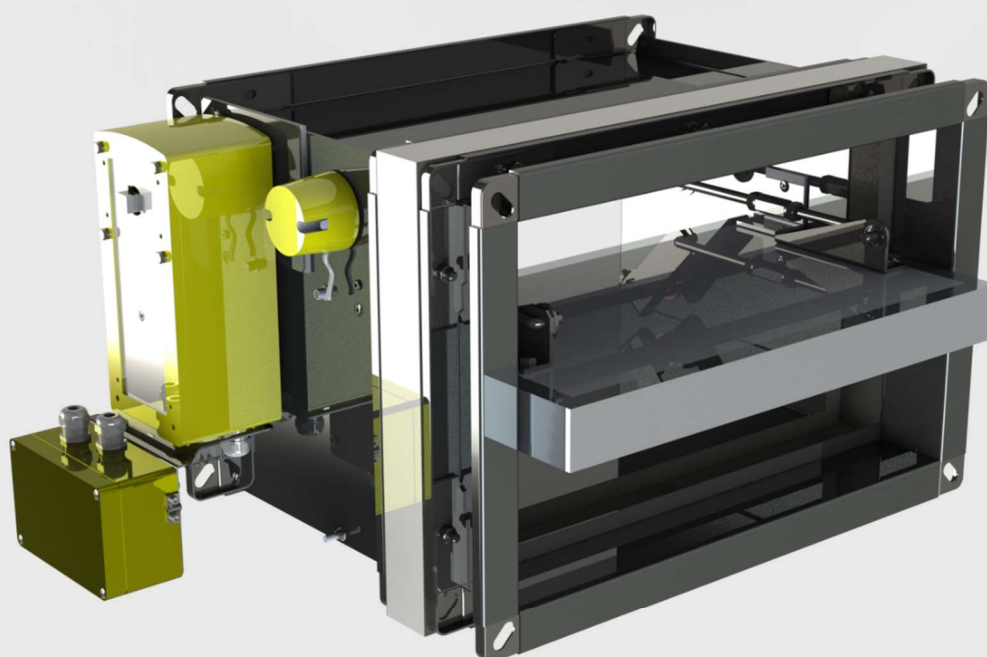


KWP-O- E(S)-EX

Fire Damper

Technical
Documentation



SMAY™

 1488	
SMAY Sp. z o.o. 14 CSWU: 1488-CPR-0444/W DWU: 003-CPR-2014 DZ: 007-CE-2016	
EN 15650:2010 Fire damper type: KWP-O-E-Ex; KWP-O-S-Ex	
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:	
Integrity - E Insulation - I Smoke leakage - S Mechanical stability (under E) Maintenance of the cross section (under E)	EI 120 (ve h _o i↔o) S
Durability:	
Opening and closing cycle test	KWP-O-E-Ex: 10 000 cycles, <120S KWP-O-S-Ex: 300 cycles, <120S

Version 6.2

SMAY reserves the right to make changes to this document.

TABLE OF CONTENT

1.	INTRODUCTION.....	3
2.	LEGAL REGULATIONS.....	3
3.	INTENDED USE	3
4.	TECHNICAL DESCRIPTION	4
5.	BELIMO ELECTRIC ACTUATORS USED IN KWP-O-ES-EX	9
6.	CONDITIONS OF TRANSPORT AND STORAGE	12
7.	INSTALLATION TECHNOOGY	12
7.1.	INSTALLATION TECHNOLOGY – RIGID WALL.....	13
7.1.1.	INSTALLATION USING MORTAR.....	13
7.1.2	INSTALLATION USING MINERAL WOOL	15
7.2.	INSTALLATION TECHNOLOGY – FLEXIBLE WALL	17
7.3.	INSTALLATION TECHNOLOGY - CEILING.....	19
7.4.	INSTALLATION TECHNOLOGY – STRUCTURES THICKER THAN 135 MM.....	21
8.	INSTALLATION TECHNOLOGY FOR FIRE DAMPERS IN BATTERIES	22
9.	REPLACING THE THERMAL FUSE ELEMENT	32
10.	COMMISSIONING	32
11.	PERIODIC MAINTENANCE AND SERVICING RULES	35
12.	CLASSIFICATION OF DAMPERS FOR REPAIR	40
13.	WARRANTY CONDITIONS.....	40

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-O-E-Ex and KWP-O-S-Ex have:

- **Certificate of Constancy of Performance No. 1488-CPR-0444/W**, issued by ITB in Warsaw, with an annex No. **Z-1488-CPR-0444/W**.
- ATEX certificate No. JSHP 22 ATEX 0017X, issued by Hamilton in Gdynia

The actuators used in KWP-O-E-Ex type dampers have:

- Schischek ExMax-15-BF with additional components – certificates **EPS 17 ATEX 1 132X**, **PTB 05 ATEX 1001** and **EPS 19 ATEX 1 020**,
- Belimo actuators in the EXBF housing by EDELWEISS - certificate. **Nemko03ATEX1242X**.

KWP-O-E-Ex and KWP-O-S-Ex are intended for use in potentially explosive places in accordance with the directive **ATEX 2014/34/UE** (on the harmonization of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres), and are compatible with standards:

- **PN-EN ISO 80079-36:2016** Explosive atmospheres — Part 36: Non-electrical equipment for explosive atmospheres — Basic method and requirements.
- **PN-EN ISO 80079-37:2016** Non-electrical equipment for explosive atmospheres — Non-electrical type of protection constructional safety "c", control of ignition sources "b", liquid immersion "k"

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. KWP-O-E-Ex and KWP-O-S-Ex fire dampers are classified as integrity class C (housing integrity) 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-O-E(S) 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.

KWP-O-E-Ex and KWP-O-S-Ex fire dampers are designed and compatible with directive ATEX 2014/34/UE as **equipment of group II category 2 intended for use in explosion hazard zones 1, 2, 21 and 22**. The anti-explosion effectiveness of the dampers has been confirmed compatible with standards: PN-EN 13463-1; PN-EN 13463-5 and approved by certificate ATEX certificate No. JSHP 22 ATEX 0017X.

The dampers are marked with ATEX:



II 2G Ex h IIC T6...T5 Gb
II 2D Ex h IIIC T80°C...T95°C Db

It fulfills the requirements of construction safety "c".

KWP-O-E-Ex and KWP-O-S-Ex fire dampers can operate within the following ambient temperature ranges:

KWP-O-S-Ex (with a spring mechanism):
 -40°C ≤ Ta ≤ +50°C for class: T5
 -40°C ≤ Ta ≤ +40°C for class: T6

KWP-O-E-Ex (with actuators):
 -40°C ≤ Ta ≤ +50°C for class: T5
 -40°C ≤ Ta ≤ +40°C for class: T6

KWP-O-E-Ex and KWP-O-S-Ex fire dampers are classified in the following fire resistance range and can be mounted in the following building partitions:

- **EI 120 (ho ve i↔o) S**
 - concrete ceiling with a thickness 150 mm or more,
 - cellular concrete ceiling with a thickness 150 mm or more

- brick walls with a thickness of 115 mm or more (masonry of solid brick, cellular concrete blocks)
- masonry walls made of solid bricks or concrete blocks with a thickness of 115 mm or more."

light type walls made from plasterboards on a steel grate having a thickness of 125 mm or more and having fire resistance class EI120 or higher

Table 1. Table of fire resistance

Construction type	Minimum thickness of the building partition mm	Fire resistance class	Sealing type
Ceiling	≥150 mm	EI 120 (h _o i↔o) S	MORTAR
Rigid wall	≥115 mm	EI 120 (v _e i↔o) S	MORTAR
Rigid wall	≥125 mm	EI 120 (v _e i↔o) S	MINERAL WOOL
Flexible wall	≥125 mm	EI 120 (v _e i↔o) S	MINERAL WOOL

where:

E – fire integrity,

I – fire insulation,

S – smoke leakage,

120 – duration of fulfilment of E, I and S criteria, expressed in minutes,

ve – damper mounted directly in the wall,

ho – damper mounted directly in the ceiling,

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

KWP-O-E and KWP-O-S fire dampers may be installed in vertical building partition with both **horizontal and vertical rotation axis** of baffle, the damper may be rotated in the way enabling location of actuator on left or right side and on top or bottom.

4. TECHNICAL DESCRIPTION

KWP-O-E-Ex and KWP-O-S-Ex fire dampers consist of two steel housing of a rectangular cross-section, a moving, single-axis isolating baffle and an actuating mechanism.

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 is intumescent seal on the inner surface 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.

Between housing and insulating spacer there is foamed rubber gasket, ensuring the tightness integrity in the ambient temperature.

The isolating baffle of the damper is made of calcium-silica board, and aluminum tape is installed on its perimeter, ensuring reduction of friction.

The baffle is rotating on two steel axles located in the housing. Movement of the baffle is limited in the closed position by a stop bar.

During normal operation of the system, KWP-O-E-Ex and KWP-O-S-Ex dampers are in open position. If a fire breaks out, the damper's baffle rotates to a closed position.

KWP-O-E-Ex damper is provided with an electric actuator with return spring by Schischek ExMax-15-BF series and ExPro-TT-72 BAE thermal fuse, constituting the damper's actuating system having supply voltage AC 230V or AC/DC 24V. After voltage is supplied, the actuator rotates the baffle into the open position. The baffle is closed when the voltage is lost, or when the thermal fuse is activated (the return spring in the actuator closes the baffle by returning to a non-stressed position).

KWP-O-S-Ex damper is provided with a spring mechanism, comprising e.g. the actuating spring, manual release device, and a thermal fuse whose nominal activation temperature is 70±5°C. When the damper is opened with a key, the actuating spring is tensioned. The baffle is kept in open position by the automatic release device, interlocked with a thermal fuse. The damper is automatically closed by the release device. Damage to the thermal fuse automatically rotates the isolating baffle (to closed position) as a result of decompression of the actuating spring. The movement of the rotating baffle is limited by two resistance buffers.

Baffle and also whole automatics controlling the baffle has been merged by ground wire to housing. On housing will be placed grounding clamp, which will be marked with a sticker with the ground symbol.



To the clamp should be put a ground cable to effectively ground the damper.

The type series of the dampers covers the following dimensions: clear damper width **from 200 to 1500 mm** (50 mm intervals) and clear damper height **from 200 to 1000 mm** (50 mm intervals). Length of made dampers KWP-O-E-Ex i KWP-O-S-Ex totals L=350 mm.

KWP-O-E(s)-Ex	Szerokość B [mm]																										
	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500
200	0,027	0,035	0,042	0,049	0,056	0,064	0,071	0,078	0,085	0,093	0,100	0,107	0,114	0,122	-	-	-	-	-	-	-	-	-	-	-	-	-
250	0,037	0,046	0,056	0,066	0,076	0,085	0,095	0,105	0,115	0,124	0,134	0,144	0,154	0,163	0,173	0,183	0,193	0,202	-	-	-	-	-	-	-	-	-
300	0,046	0,058	0,070	0,083	0,095	0,107	0,119	0,132	0,144	0,156	0,168	0,181	0,193	0,205	0,217	0,230	0,242	0,254	0,266	0,279	0,291	0,303	-	-	-	-	-
350	0,055	0,070	0,085	0,099	0,114	0,129	0,144	0,158	0,173	0,188	0,203	0,217	0,232	0,247	0,262	0,276	0,291	0,306	0,321	0,335	0,350	0,365	0,380	0,394	0,409	0,424	-
400	0,064	0,082	0,099	0,116	0,133	0,151	0,168	0,185	0,202	0,220	0,237	0,254	0,271	0,289	0,306	0,323	0,340	0,358	0,375	0,392	0,409	0,427	0,444	0,461	0,478	0,496	0,513
450	0,074	0,093	0,113	0,133	0,153	0,172	0,192	0,212	0,232	0,251	0,271	0,291	0,311	0,330	0,350	0,370	0,390	0,409	0,429	0,449	0,469	0,488	0,508	0,528	0,548	0,567	0,587
500	0,083	0,105	0,127	0,150	0,172	0,194	0,216	0,239	0,261	0,283	0,305	0,328	0,350	0,372	0,394	0,417	0,439	0,461	0,483	0,506	0,528	0,550	0,572	0,595	0,617	0,639	0,661
550	0,092	0,117	0,142	0,166	0,191	0,216	0,241	0,265	0,290	0,315	0,340	0,364	0,389	0,414	0,439	0,463	0,488	0,513	0,538	0,562	0,587	0,612	0,637	0,661	0,686	0,711	0,736
600	0,101	0,129	0,156	0,183	0,210	0,238	0,265	0,292	0,319	0,347	0,374	0,401	0,428	0,456	0,483	0,510	0,537	0,565	0,592	0,619	0,646	0,674	0,701	0,728	0,755	0,783	0,810
650	-	0,140	0,170	0,200	0,230	0,259	0,289	0,319	0,349	0,378	0,408	0,438	0,468	0,497	0,527	0,557	0,587	0,616	0,646	0,676	0,706	0,735	0,765	0,795	0,825	0,854	0,884
700	-	0,152	0,184	0,217	0,249	0,281	0,313	0,346	0,378	0,410	0,442	0,475	0,507	0,539	0,571	0,604	0,636	0,668	0,700	0,733	0,765	0,797	0,829	0,862	0,894	0,926	0,958
750	-	0,164	0,199	0,233	0,268	0,303	0,338	0,372	0,407	0,442	0,477	0,511	0,546	0,581	0,616	0,650	0,685	0,720	0,755	0,789	0,824	0,859	0,894	0,928	0,963	0,998	1,033*
800	-	-	0,213	0,250	0,287	0,325	0,362	0,399	0,436	0,474	0,511	0,548	0,585	0,623	0,660	0,697	0,734	0,772	0,809	0,846	0,883	0,921	0,958	0,995	1,032*	1,070*	1,107*
850	-	-	0,227	0,267	0,307	0,346	0,386	0,426	0,466	0,505	0,545	0,585	0,625	0,664	0,704	0,744	0,784	0,823	0,863	0,903	0,943	0,982	1,022*	1,062*	1,102*	1,141*	1,181*
900	-	-	0,241	0,284	0,326	0,368	0,410	0,453	0,495	0,537	0,579	0,622	0,664	0,706	0,748	0,791	0,833	0,875	0,917	0,960	1,002*	1,044*	1,086*	1,129*	1,171*	-	-
950	-	-	-	0,300	0,345	0,390	0,435	0,479	0,524	0,569	0,614	0,658	0,703	0,748	0,793	0,837	0,882	0,927	0,972	1,016*	1,061*	1,106*	1,151*	1,195*	-	-	-

Table 2. Type series of damper dimension KWP-O-E-Ex and KWP-O-S-Ex

*- Maximum cross-sectional area for KWP-O-S-Ex series totals 1 m², and for KWP-O-E-Ex totals 1,5 m²

Table 3. KWP-O-E-Ex weight [kg]

KWP-O-E-Ex	Width B [mm]														
	200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	
Height H [mm]	200	12,4	14,7	16,9	19,1	21,3	23,5	25,7	-	-	-	-	-	-	
	300	14,5	17,1	19,8	22,3	24,9	27,5	30,2	33,1	35,8	38,5	41,2	-	-	
	400	16,7	19,7	22,7	25,7	28,7	32,0	35,1	38,1	41,2	44,2	47,2	55,6	59,0	62,4
	500	18,8	22,2	25,7	29,1	32,8	36,2	39,7	43,1	46,5	49,9	53,4	62,6	66,3	71,4
	600	20,8	24,7	28,6	32,7	36,5	40,3	44,2	48,0	51,8	55,7	59,5	70,8	74,9	79,1
	700	-	27,2	31,8	35,9	40,2	44,4	48,7	52,9	57,1	62,7	66,9	77,6	82,2	86,7
	800	-	29,7	34,7	39,3	43,9	48,5	53,2	57,8	63,8	68,5	73,1	84,5	89,5	94,4
	900	-	32,5	37,6	42,5	47,6	52,6	57,7	64,1	69,1	74,2	79,2	91,4	96,7	-
	1000	-	-	40,5	45,9	51,4	56,8	63,7	69,1	74,6	80,0	85,4	-	-	-

Table 4. KWP-O-S-Ex weight [kg]

KWP-O-S-Ex		Width B [mm]													
		200	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500
Heigh H [mm]	200	11,8	14,0	16,2	18,4	20,6	22,8	-	-	-	-	-	-	-	-
	300	13,8	16,5	19,1	21,7	24,3	26,9	29,6	32,0	34,4	36,8	-	-	-	-
	400	16,0	19,0	22,1	25,0	28,0	31,1	34,1	36,9	40,0	43,1	46,2	49,3	52,4	55,5
	500	18,2	21,6	25,0	28,4	31,8	35,2	38,7	42,3	45,7	49,1	52,5	55,9	59,3	62,7
	600	-	23,8	27,7	31,5	35,3	39,5	43,4	47,2	51,1	55,0	58,9	62,8	66,7	70,6
	700	-	26,3	30,6	34,8	39,4	43,6	47,9	52,1	56,4	60,7	65,0	69,3	73,6	-
	800	-	-	33,5	38,1	43,1	47,7	52,4	57,1	61,7	66,3	70,9	-	-	-
	900	-	-	36,4	41,8	46,8	51,8	56,9	62,0	67,0	72,0	-	-	-	-
	1000	-	-	39,4	45,2	50,6	56,0	61,5	67,0	72,4	-	-	-	-	-

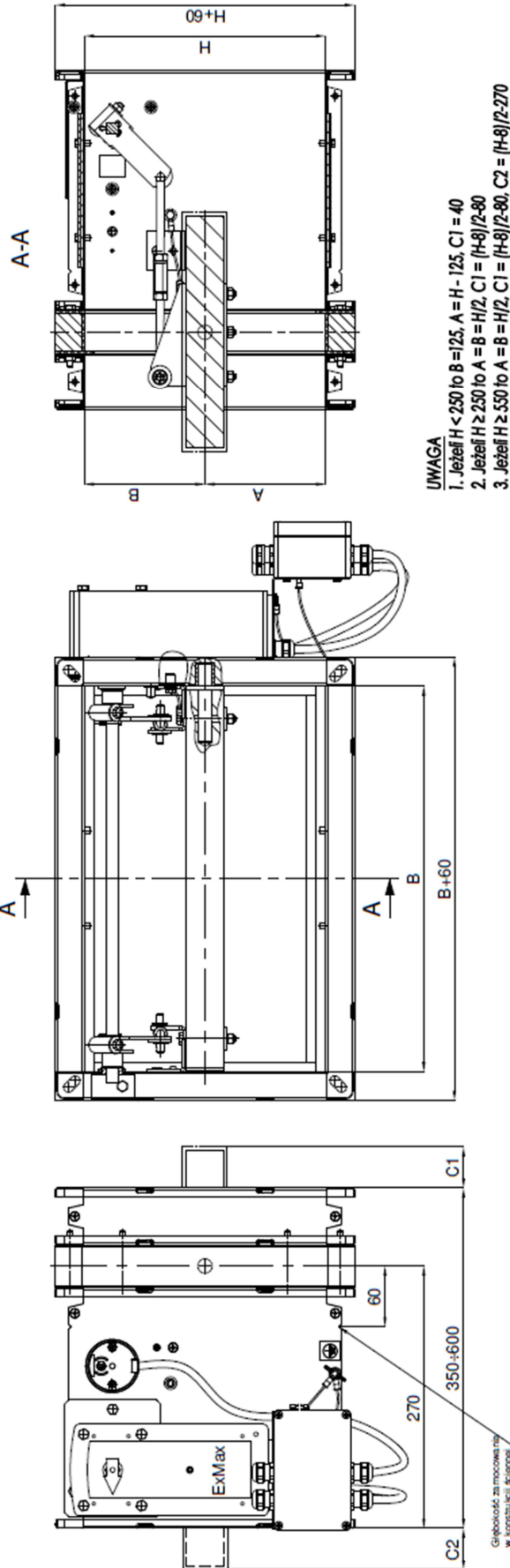
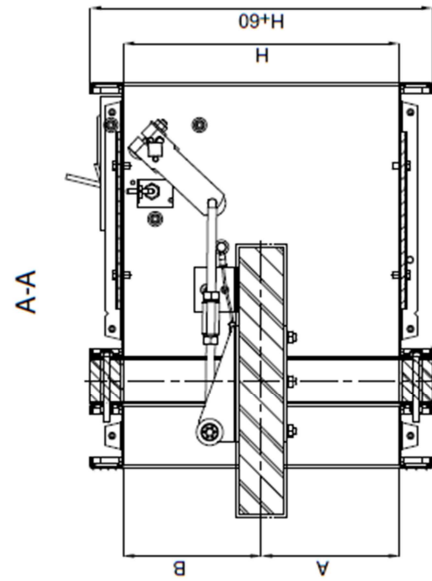


Figure 1.KWP-O-E-Ex damper



- UWAGA**
1. Jeżeli $H < 250$ to $B = 125$, $A = H - 125$, $C1 = 40$
 2. Jeżeli $H \geq 250$ to $A = B = H/2$, $C1 = (H-8)/2-80$
 3. Jeżeli $H \geq 550$ to $A = B = H/2$, $C1 = (H-8)/2-80$, $C2 = (H-8)/2-270$

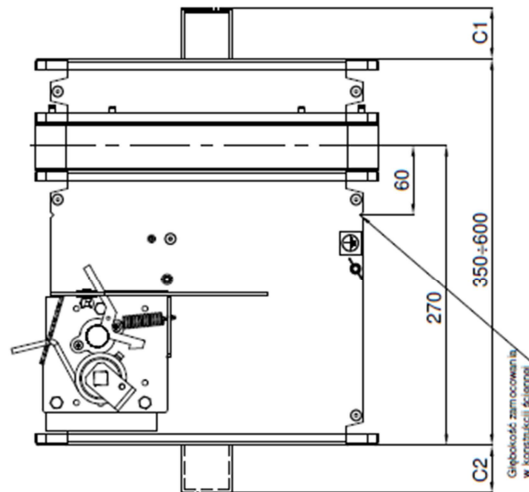
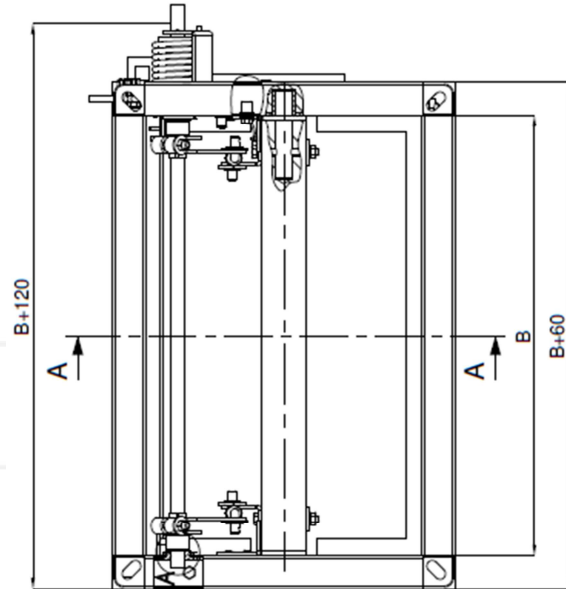


Figure 2. KWP-O-S-Ex damper

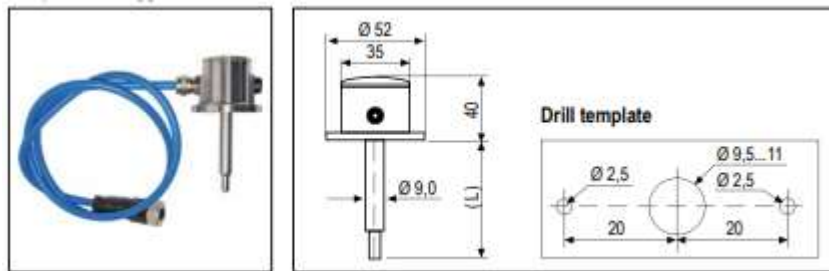
5. BELIMO ELECTRIC ACTUATORS USED IN KWP-O-ES-EX

- Schischek ExMax-BF-15 actuator:



Technical data	ExMax- 5.10 - BF	ExMax- 15 - BF
Torque motor (min.)	5 / 10 Nm selectable on site	15 Nm
Torque spring (F)	min. 10 Nm	min. 15 Nm
Torque blockade	In blockade and end positions torques are higher than above specified torques for motor and spring.	
Dimensioning of external load	Upon spring return the external load should be max. 80 % of torque spring (F).	
Supply voltage / frequency	24...240 VAC/DC \pm 10 %, self adaptable, frequency 50...60 Hz \pm 20 %	
Power consumption	max. starting currents see ① Extra information (in acc. with voltage, $I_{start} \gg I_{rated}$), approx. 5 W holding power, approx. 16 W for heater	
Protection class	Class I (grounded)	
Angle of rotation and indication	95° incl. – 5° pretension, mechanical value indication	
Working direction	Selectable by left/right mounting to the damper/valve shaft	
Motor running times	3 / 15 / 30 / 60 / 120 s/90° selectable on site	
Motor	Brushless DC motor	
Control mode	On-off and 3-pos. in acc. with wiring, selectable on site	
Spring return (F)	spring return upon voltage interruption, response time up to 1 sec. after voltage interruption	
Spring return running time (F)	– 3 or 10 s/90° selectable on site	
3 sec. mode – spring return	– 3 to 4 s/90° angle of rotation acc. to external load	
Safety operations at 10 sec. (F)	min. 10,000 acc. to construction of damper and ambient	
at 3 sec. (F)	min. 1,000 acc. to construction of damper and ambient	
Ex-i tripping circuit	Intrinsically safe circuit to connect the ExPro-TT... safety temperature trigger directly to the actuator with M12 quick connection	
Auxiliary switches	2 integrated auxiliary switches, switching at 5° and 85° angle of rotation, potential free. Grid fuse-protection is recommended!	
	$U_{max} / I_{max} AC = 250 V / 5 A$; $U_{min} AC/DC = 5 V$; After one-time operation with $U > 24 V AC/DC$ or $I > 100 mA$:	$U_{min} AC/DC = 12 V$
	$U_{max} / I_{max} DC = 48 V / 1 A$; $I_{min} AC/DC = 5 mA$;	$I_{min} AC/DC = 100 mA$
Axle of the actuator	Double square 12 x 12 mm, direct coupling, 100 % overload protected and self locking up to 15 Nm	
Electrical connection	Cable ~ 1 m, wire cross section 0.5 mm ² , equipotential bonding 4 mm ² . Connections in hazardous areas require an Ex-e terminal box!	
Diameter of cable	– Ø 9.6 mm	
Cable gland	M16 x 1.5 mm	
Manual override	Use delivered socket wrench, max. 4 Nm	
Heater	Integrated, controlled heater for ambient temperature down to –40 °C	
Housing material	Aluminium die-cast housing, coated. Optional with seawater resistant coating (...CTS) or stainless steel housing, № 1.4581 / UNS-J92900 / similar AISI 316Nb (...VAS)	
Dimensions (L x W x H)	210 x 95 x 80 mm, for diagrams see ① Extra information	
Weight	– 3.5 kg aluminium housing, stainless steel – 7 kg	
Ambients	Storage temperature –40...+70 °C, working temperature –40...+40 °C at T6 and –40...+50 °C at T5	
Humidity	0...90 % rH, non condensing	
Operating 3 sec. motor run time	In 3 s mode the motor will work only after 1 minute of voltage supply. While open/close operation (open voltage supply and shut it down) motor works only with speed of 15 s/90°	
≥ 15 sec. motor run time	at 15 / 30 / 60 / 120 s 100 % of ED is permitted (ED = duty cycle)	
Wiring diagrams	SB 7.0 / 7.1	SB 7.0 / 7.1
Scope of delivery	Actuator, 4 screws M4 x 100 mm, 4 nuts M4, Allen key for simple manual override	
Parameter at delivery	5 Nm, 30 s/90°	15 Nm, 30 s/90°

- **ExPro-TT-72 thermal fuse:**

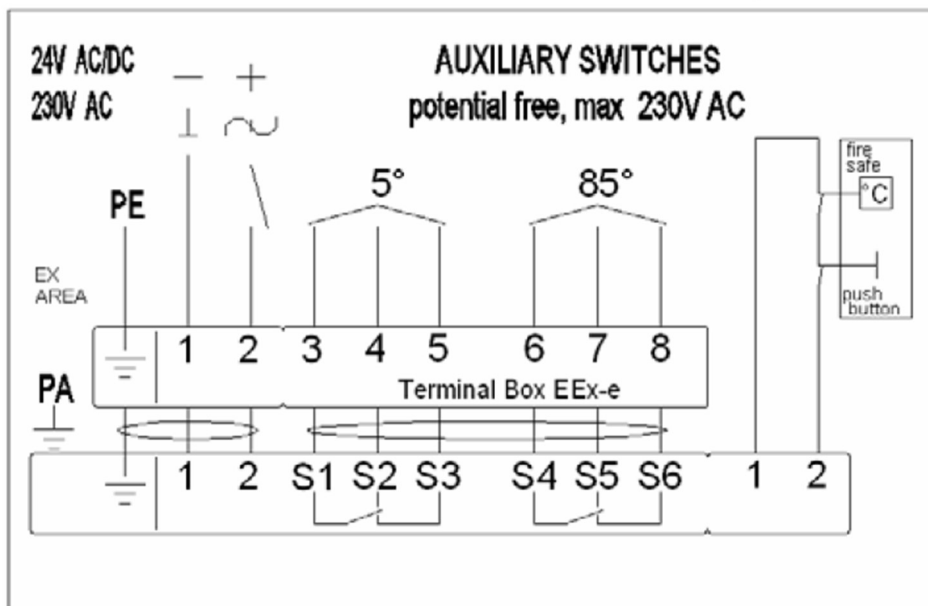


Technical data	
Supply	only by ...Max....BF... actuators by Schischek
Connection	- 1 m cable
Cable	2 × 0,5 mm ² , -40...+220 °C, halogen-free inductance = 0,6 mH/km, capacitance = 30 nF/km
Cable gland	M12 × 1,5 mm Ex-e, brass nickel-plated Ø 4...6 mm
Temperature fuse	1 × duct, 1 × outside duct (not changeable)
Response temperatures	Tf1 room ambient temperature at +72 °C Tf2 duct temperature at +71 °C
Ambient temperature	Ta -40...+72 °C, working temperature Tb -40...+55 °C
Storage temperature	-40...+55 °C
Humidity protection	< 95 % rH, non condensing
Weight	200 g
Materials	thermowell brass plated, housing No 1.4581 / UNS-J92900 / similar AISI 316Nb cover brass plated, seal cover FPM
Maintenance	maintenance free, a yearly function control is recommended

- **Belimo BF actuator in EX EDELWEISS housing**

Dane techniczne		
Torque	-motor	18 Nm
	-spring	12 Nm
Rotation angle		95 °C
Running time	-motor	<120 sec.
	-spring	±16 sec. (=20°C)
Intrinsic safe circuit		Additional Ex-I circuit to connect a passive potential free thermostat as a safety sensor, e.g. type fire safe
Thermo-electric tripping device		KEDXTFDU0001 (72°C)
Ambient temperature		-20°C +50°C
Degree of protection		IP66
Housing material		Aluminium baked varnish
Maintenance		None
Fastening		Terminal block in Ex e box
Wiring length		1m
Weght		8,5kg
Auxiliary micro switches		6A (3A) max 250V AC Switching point at: 5°/80°
EMC		CE according to 2004/108/EC
Low voltage directive		CE according to 2006/95/EEC
Halogen-free wiring		According to IEC 60332-1/3 and IEC 60754-1/2

EXBF A version		
Power supply		AC 230 V 50/60 Hz
Nominal voltage range		AC 198 V...264 V
Power consumption	-running	8,5W
	-at rest	3,0W
Sizing		11VA
EXBF B version		
Power supply		AC 24 V 50/60Hz, DC 24V
Nominal voltage range		AC 19,2 V ...28,8 V
		DC 21,6 V...28,8 V
Power consumption	-running	7,0W
	-at rest	2,0W
Sizing		10VA



6. CONDITIONS OF TRANSPORT AND STORAGE

Fire dampers KWP-O-E-Ex and KWP-O-S-Ex should be stored in cardboard boxes and/or on pallets. Dampers 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 TECHNOOGY

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 preserve the declared resistance, insulation and smoke leakage EIS120, dampers should be installed in a wall, which was classified as EIS120. It is allowed to install dampers in wall with other fire-resistance, should be remembered that fire-resistance in this situation is resistance of lowest classified (in this regard) element in this system.

Ducts made of flammable and non-flammable materials can be connected to the damper. Ducts should be installed that they cannot 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).

The damper housing must be effectively grounded by connecting a ground wire with grounding clamp, which are placed on damper housing, and marked by symbol.



7.1. INSTALLATION TECHNOLOGY – RIGID WALL

7.1.1. INSTALLATION USING MORTAR

- a. Make an opening in the wall with the 100 [mm] (acceptable 80 ÷ 120 [mm]) greater than the nominal dimensions of the fire damper = B+100 and H+100.
- b. Put the closed fire damper into the installation opening on depth marked by undercuts on the damper body (dimension 60 mm), from one side fix it with suspension Z1, and from other side fix it to the ventilation duct suspended on Z2 suspension.
- c. After setting the fire damper as described, fill the gap between the fire damper and the wall with cement, cement-lime mortar, concrete, or PROMASTOP MG III of production of the PROMAT company.
- d. After 48 hours from the installation, the suspensions and supports used during installation of fire damper, may be removed.

ATTENTIONS:

- Carry out the installation in protective clothing, (gloves, glasses, helmet),
- Pay attention at the sharp edges of the sheets,
- Damper Baffle axis must be in horizontal or vertical position after montage
- Damper cannot be formwork for wall
- Ventilations duct should be installed that they cannot put any load on the damper, their suspension must ensure their full load capacity.
- The suspensions of the ventilation duct connected with the damper battery must be done according to instruction manufacturer of ventilation ducts
- In place of suspensions Z1 and Z2, which are installed for the time of assembly of the damper and in place of mortar binding it can be used mounting brackets, paying attention to the immobilization of the damper.

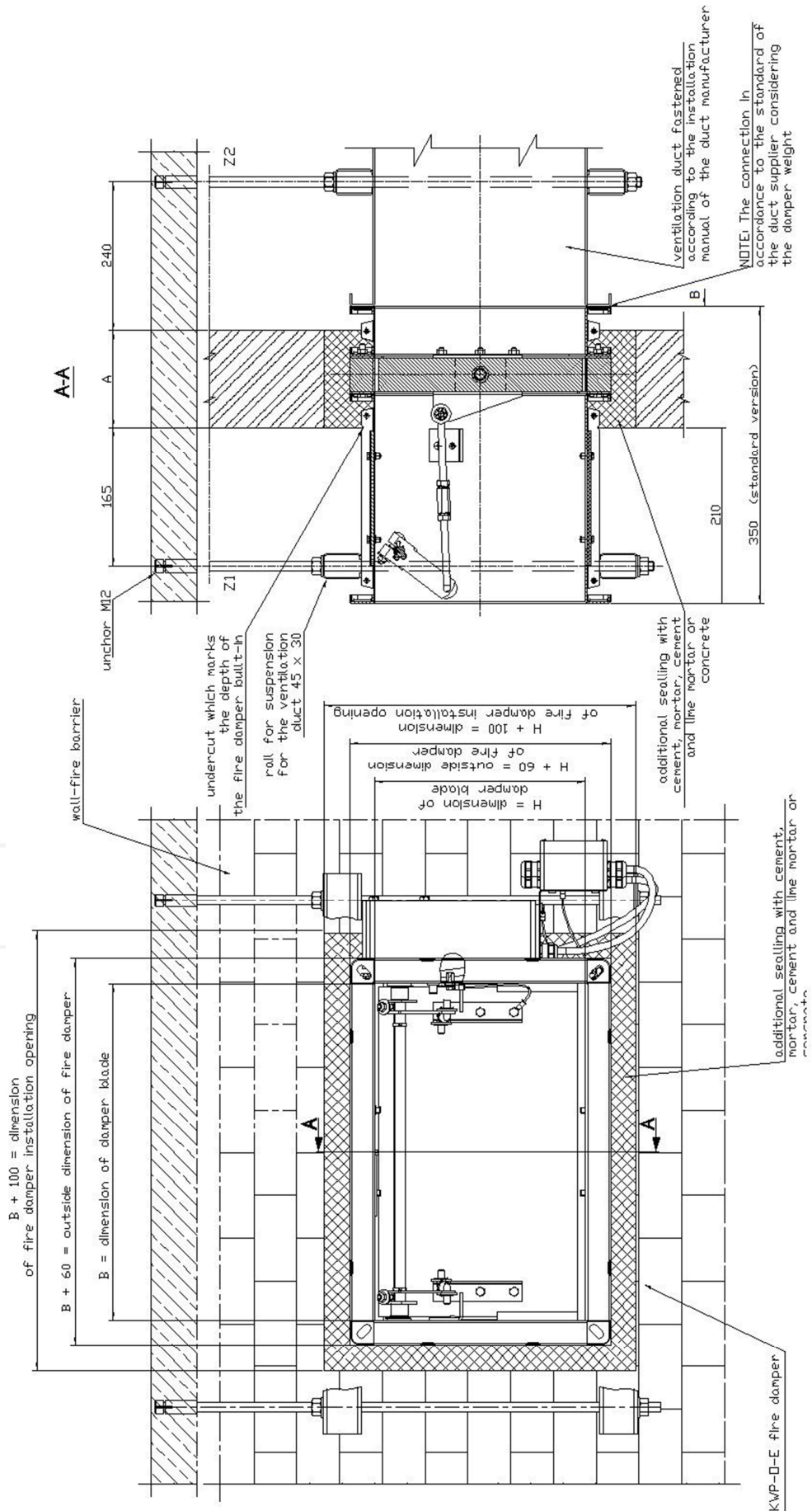


Figure 3. Installation method of fire dampers KWP-O-Ex in rigid wall

7.1.2. INSTALLATION USING MINERAL WOOL

- a. Make an opening in the wall with the 100 [mm] (acceptable 80 ÷ 120 [mm]) greater than the nominal dimensions of the fire damper = B+100 and H+100.
- b. Put the closed fire damper into the installation opening on depth marked by undercuts on the damper body (dimension 60 mm), from one side fix it with suspension Z1, and from other side fix it to the ventilation duct suspended on Z2 suspension.
- c. 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, 80 kg/m³ or more.
- d. 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.
- e. Mount collar, both side of wall, made of GKF boards, 15 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.
- f. After mounting the collar, remove the supports or suspension, check the fire damper correct operation and leave it in open position.



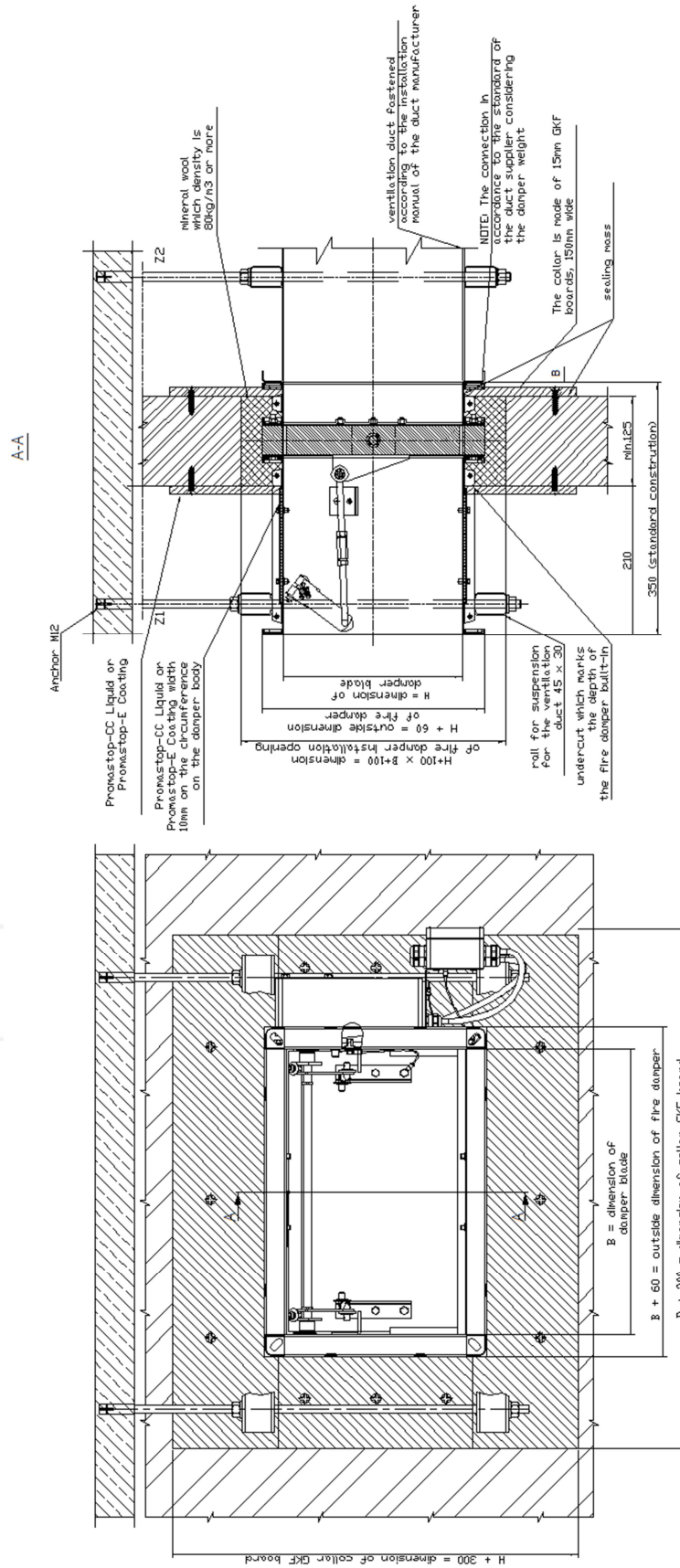


Figure 4. Installation method of fire dampers KWP-O-Ex in rigid wall

7.2. 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 and 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 or 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, 80 kg/m³ 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, 15 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.



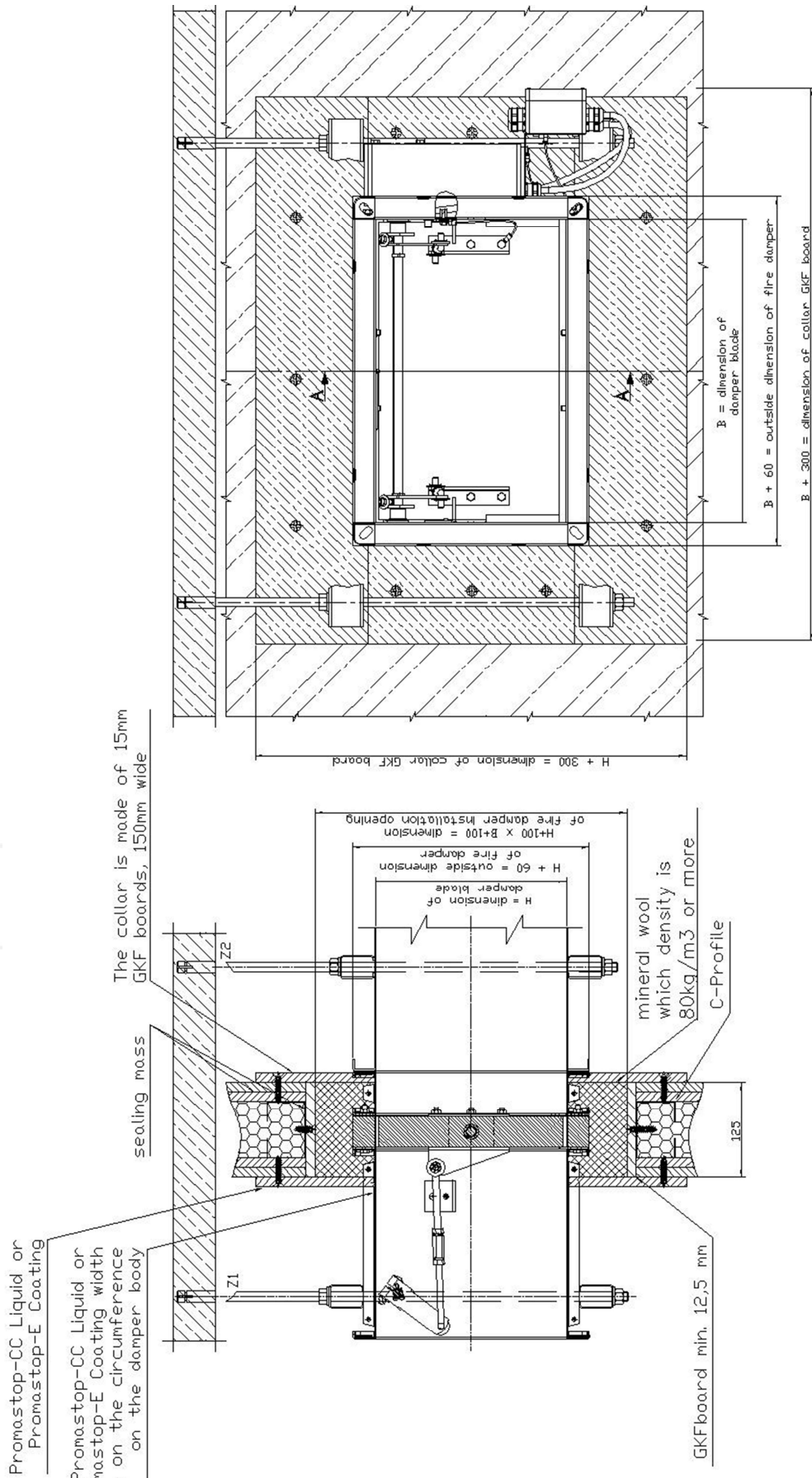


Figure 5. Installation method of fire dampers KWP-O-Ex in flexible wall

7.3. INSTALLATION TECHNOLOGY - CEILING

- Make an opening in the ceiling with the 100 [mm] (acceptable $80 \div 120$ [mm]) greater than the nominal dimensions of the fire damper = $B+100$ and $H+100$.
- Put the closed fire damper into the ceiling to the depth marked on housing (dimension 60mm)
- After setting the fire damper as described, with using montage supports, fill the gap between the fire damper and the wall with cement, cement-lime mortar, concrete, or PROMASTOP MG III of production of the PROMAT company.

ATTENTIONS:

- 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.

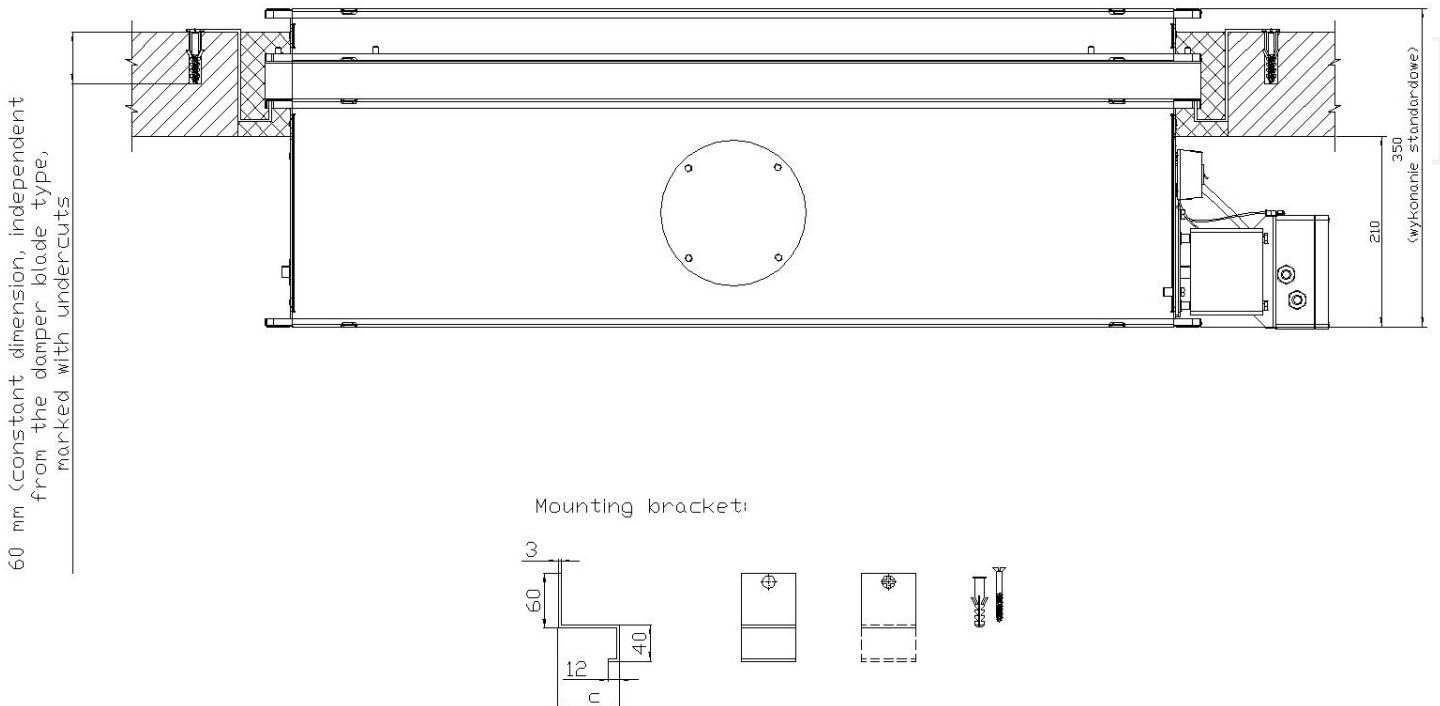


Figure 6. Installation method of fire dampers in ceiling

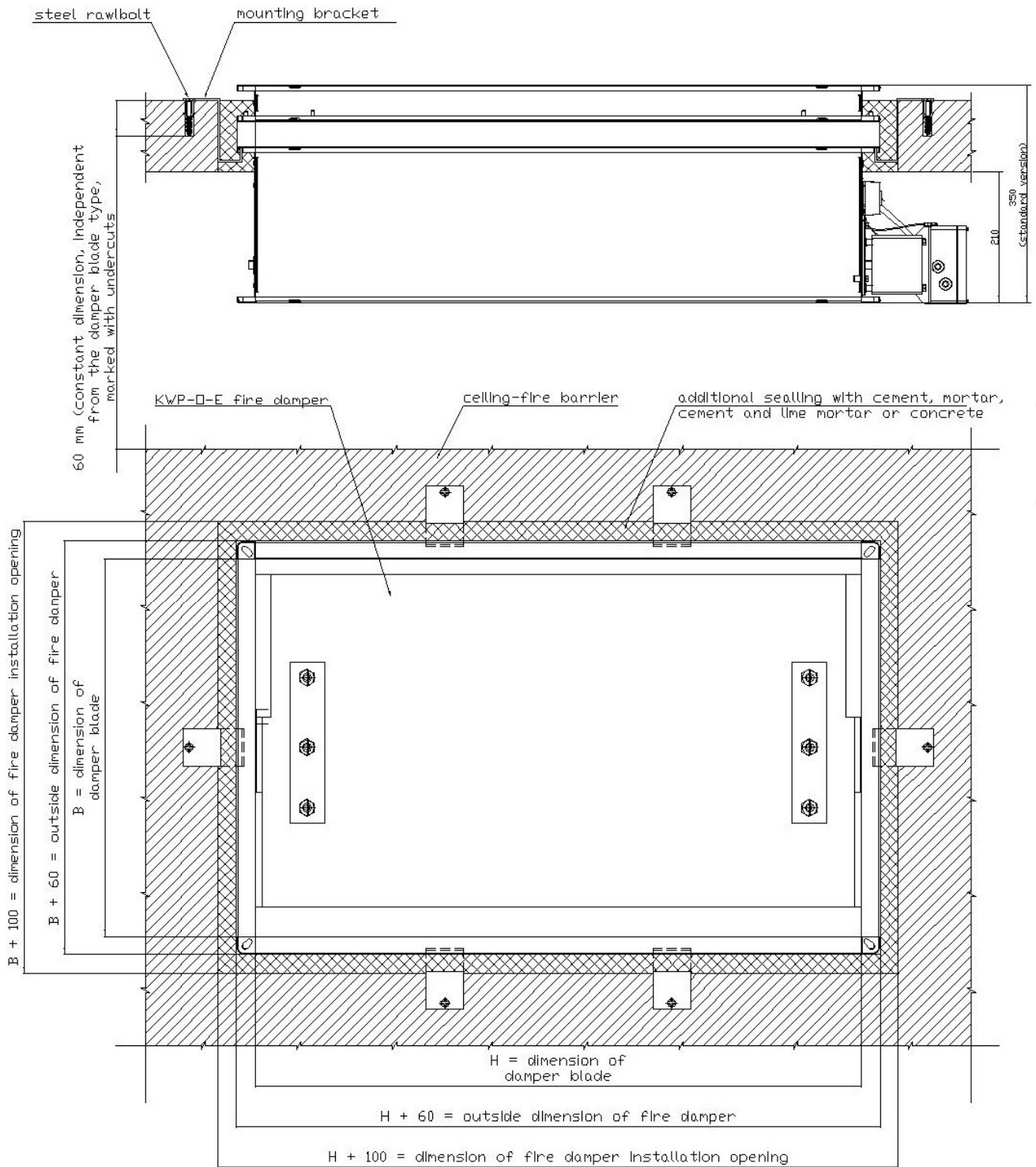


Figure 7. Installation method of fire dampers in ceiling

7.4. INSTALLATION TECHNOLOGY – STRUCTURES THICKER THAN 135 mm

The KWP-O-E(S)-Ex damper can be installed also in horizontal compartments thicker than length of damper's body. In this case, ventilation ducts are going to be partially inbuilt in the fire compartment.

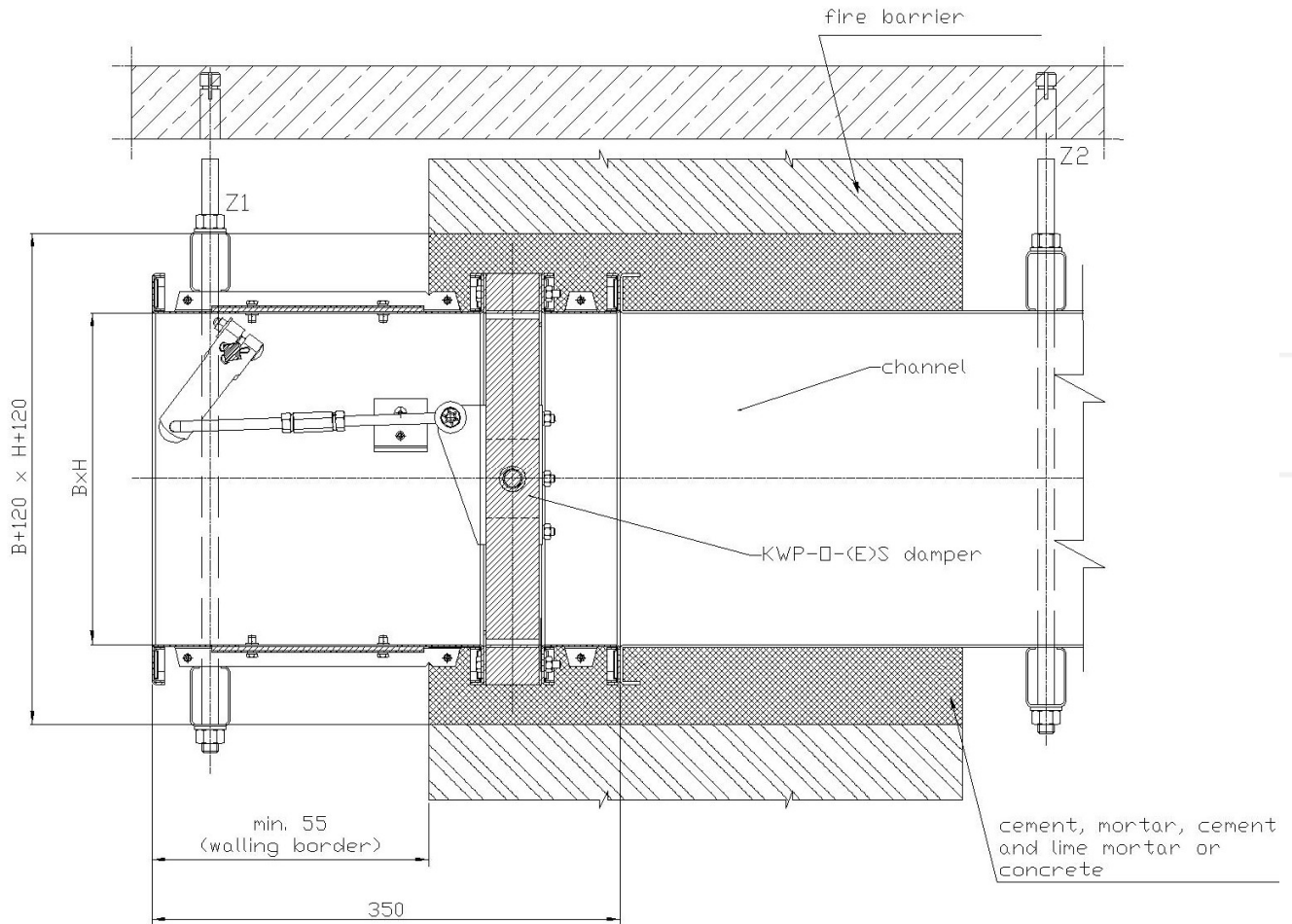


Figure 8. Installation method of fire dampers in structures thicker than 135 mm

8. INSTALLATION TECHNOLOGY FOR FIRE DAMPERS IN BATTERIES

The assembly of fire dampers in batteries is possible only after previous delivery of the information (at the stage of ordering) about which fire dampers and in which arrangement (horizontal or vertical) would be installed in a wall, in order to prepare suitable opening for self-tapping screws in the fire damper body.

There are two possibilities of realizing the order of fire damper batteries: basic and complete. First one covers the set of fire dampers, assembly strips and complete set of self-tapping screws. The purchase of other materials needed such as: intumescent gasket (PROMASEAL-PL), mineral wool for thermal insulation (with minimum density of 60 kg/m³) and aluminum tape remains with the Customer. The second variant provides for supply by the Manufacturer of complete set of fire dampers and all the elements needed for installation.

The fire dampers are assembled into batteries with use of assembly strips with length of 1200 [mm]. In case when total dimension of their battery is smaller than multiple of the length of the assembling strip, the last one should be cut with angle grinder on the construction site to match the dimension of the battery (basic variant) or cut in manufacturing facility by Manufacturer (complete variant)

Fire dampers should be marked with letters: A, B, C, D.

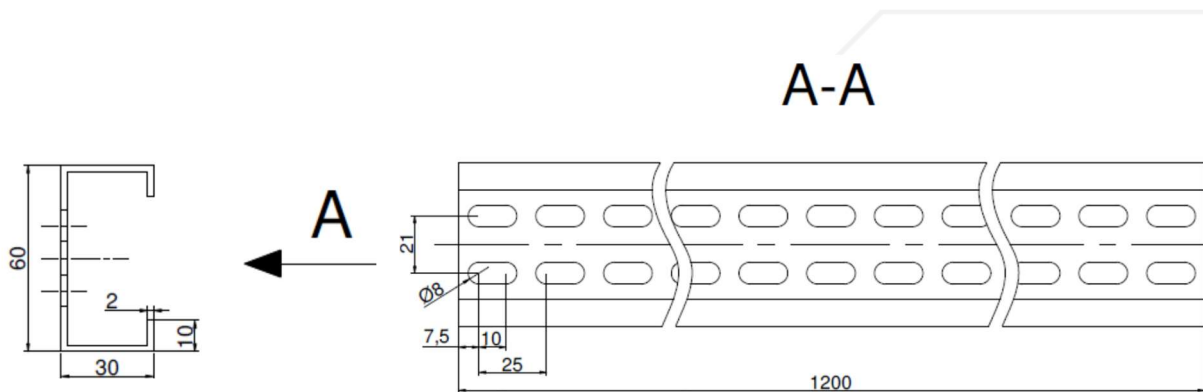


Figure 9. Connection strip

SMAY offers four basic types of damper battery systems:

Arrangement 1 – vertical battery consisting of two fire dampers KWP-O-Ex (Figure 11)

- Fix the gasket on insulating spacer of one of adjoining fire dampers (position (1) in the Figure 11).
- Put non-combustible mineral wool into recess in upper surface of the fire damper. The thickness of mineral wool should be twice as the thickness of the recess in upper surface of the fire damper in order to fill the whole free space between the fire dampers as shown in (w1).

NOTE: The alternative way of wool mounting is to use two layers of wool with thickness of 30 mm. In this case, apply the fire resistant PROMASTOP CC liquid with width of 50 mm. The mass is placed between the strips of wool and between wool and damper housings.

- Place the fire damper A on the fire damper B and assemble them together on the front and back with use of perforated assembly strips (2) and self-tapping screws M6x16 (3), which should be tightened into the openings in fire damper body. In order to carry out the correct assembly, 4 self-tapping screws should be used per each assembly strip with length of 1200 [mm].

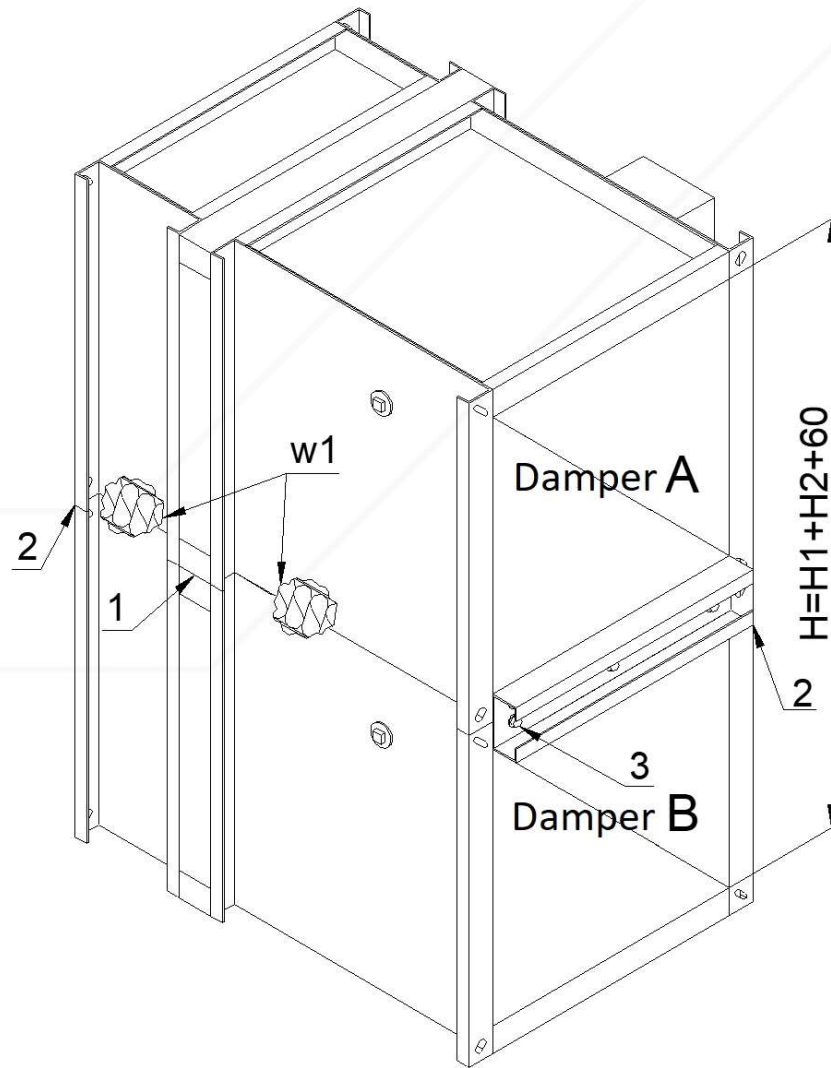


Figure 10. Arrangement 1 - vertical battery consisting of two fire dampers KWP-O-Ex

Arrangement 2 - vertical battery consisting of three fire dampers KWP-O-Ex (Figure 12)

- Fix the gasket on insulating spacer of one of adjoining fire dampers (position (1) in the Figure 12).
- Put non-combustible mineral wool into recess in upper surface of the fire damper. The thickness of mineral wool should be twice as the thickness of the recess in upper surface of the fire damper in order to fill the whole free space between the fire dampers as shown in (w1).

NOTE: The alternative way of wool mounting is to use two layers of wool with thickness of 30 mm. In this case, apply the fire resistant PROMASTOP CC liquid with width of 50 mm. The mass is placed between the strips of wool and between wool and damper housings.

- Place the fire damper B on the fire damper C and assemble them together on the front and back with use of perforated assembly strips (2) and self-tapping screws M6x16 (3), which should be tightened into the openings in fire damper body. In order to carry out the correct assembly, 4 self-tapping screws should be used per each assembly strip with length of 1200 [mm].
- Repeat accordingly paragraphs 2 and 3 to assemble fire damper A on fire damper B.

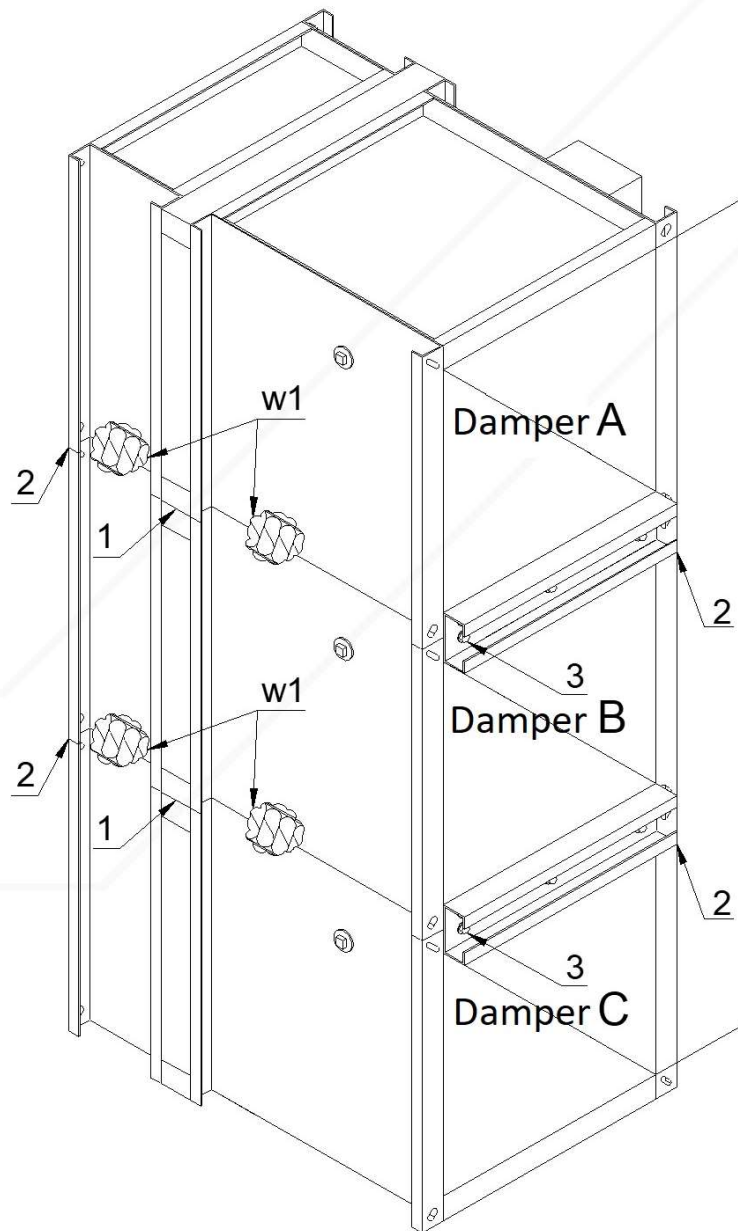


Figure 11. Arrangement 2 - vertical battery consisting of three fire dampers KWP-O-Ex

Arrangement 3 - horizontal battery consisting of two fire dampers KWP-O-Ex (Figure 13)

- Fix the gasket on insulating spacer of one of adjoining fire dampers (position (1) in the Figure 13).
- Set together the sides of fire damper A and the fire damper B (where the gasket was fixed) and assemble them together on the front and back with use of perforated assembly strips (2) and self-tapping screws M6x16 (3), which should be tightened into the openings in fire damper body. In order to carry out the correct assembly, 4 self-tapping screws should be used per each assembly strip with length of 1200 [mm].
- Fill the whole free space between the joint of fire dampers with non-combustible mineral wool, as shown in (w1).

NOTE: The alternative way of wool mounting is to use two layers of wool with thickness of 30 mm. In this case, apply the fire resistant PROMASTOP CC liquid with width of 50 mm. The mass is placed between the strips of wool and between wool and damper housings.

- The place of sealing the top of the fire damper with mineral wool should be sealed with aluminum tape (4).

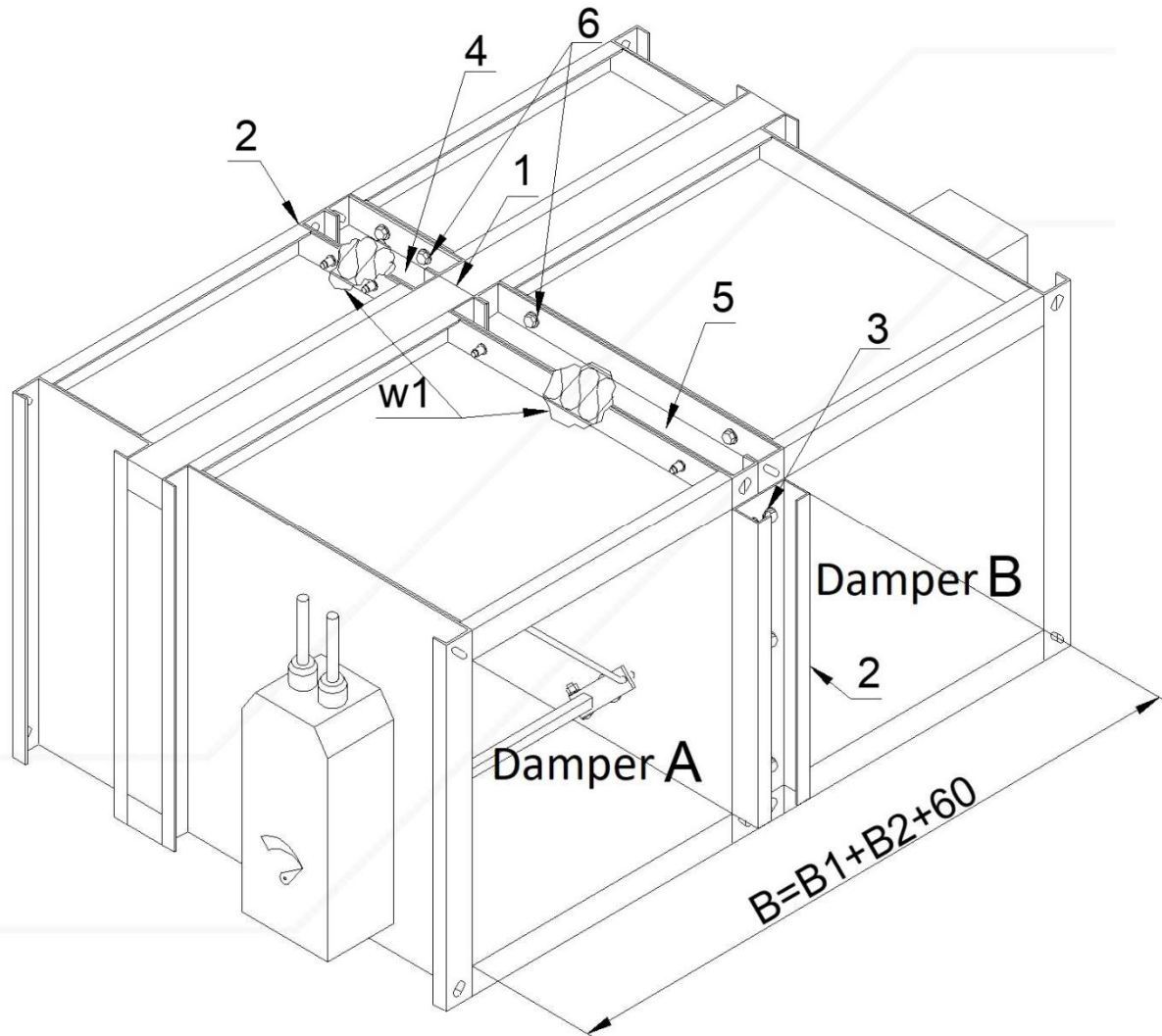


Figure 12. Arrangement 3 – horizontal battery consisting of two fire dampers KWP-O-Ex

Arrangement 4 – battery consisting of four fire dampers KWP-O-Ex (Figure 14)

The assembly of battery consisting of four fire dampers KWP-O-Ex is divided into two steps:

- Step 1 – assembly of fire damper A and fire damper B and assembly of fire damper C and fire damper D.
- Step 2 – assembly of the set of fire dampers A, B and the set of fire dampers C, D.

STEP 1:

- a. Fix the gasket on insulating spacer of one of adjoining fire dampers (position (1) in the Figure 14).
- b. Set together the sides of fire damper A and the fire damper B (where the gasket was fixed) and assemble them together on the front and back with use of perforated assembly strips (2) and self-tapping screws M6x16 (3), which should be tightened into the openings in fire damper body. In order to carry out the correct assembly, 4 self-tapping screws should be used per each assembly strip with length of 1200 [mm].
- c. Repeat paragraph 2 to assemble fire damper C on the fire damper D.

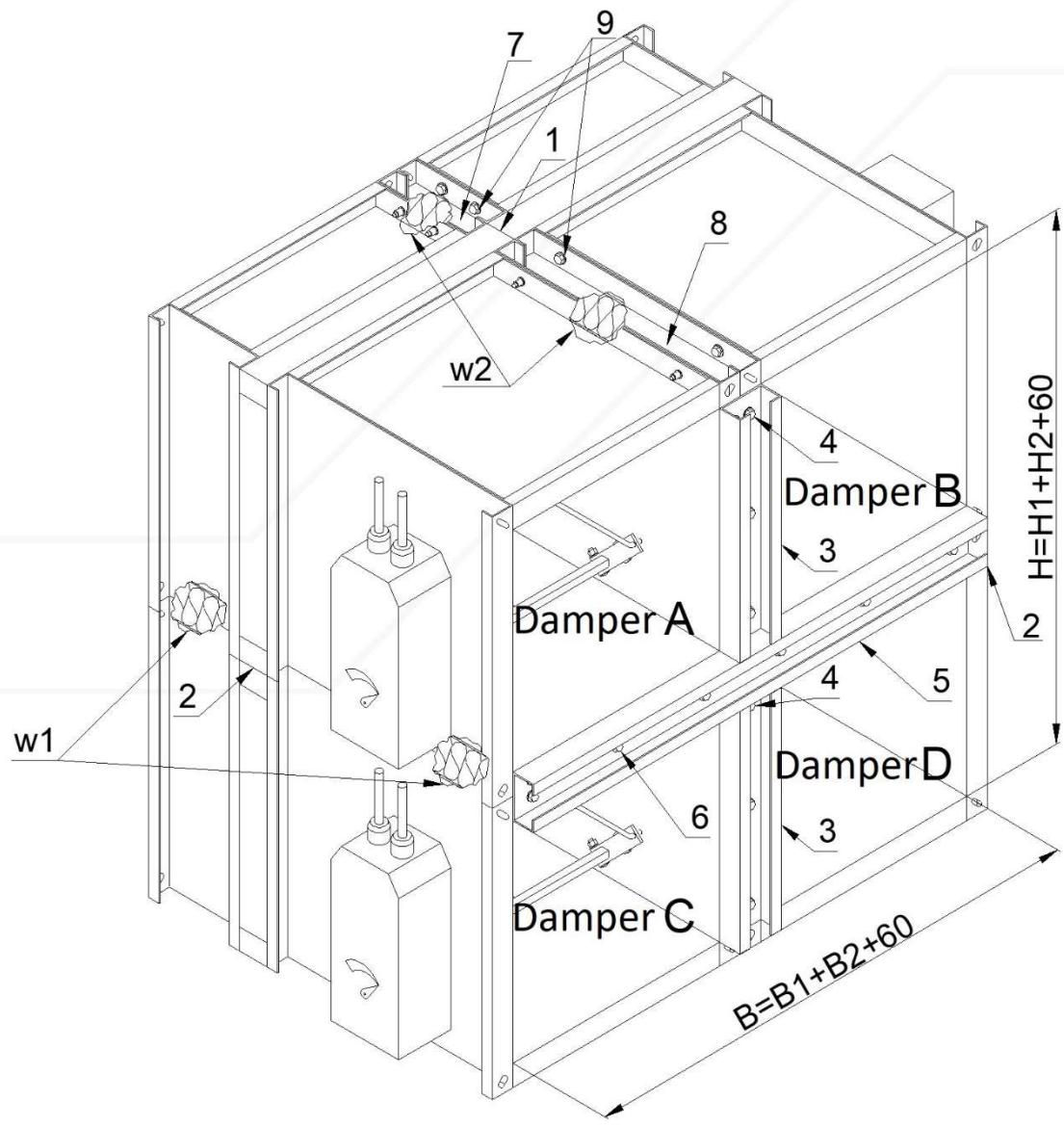


Figure 13. Battery made of four dampers KWP-O-Ex

STEP 2:

- a. Fix the gasket on insulating spacer of one of adjoining fire dampers (position (2) in the Figure 13).
- b. Put non-combustible mineral wool into recess in upper surface of the fire damper C and fire damper D. The thickness of mineral wool should be twice as the thickness of the recess in upper surface of the fire dampers in order to fill the whole free space between the fire dampers C and D and the fire dampers A and B, as shown in (w1).

NOTE: The alternative way of wool mounting is to use two layers of wool with thickness of 30mm. In this case, apply the fire resistant PROMASTOP CC liquid with width of 50 mm. The mass is placed between the strips of wool and between wool and damper housings.

- c. Place the set of fire dampers A and B on the set of fire dampers C and D and assemble them together on the front and back with use of perforated assembly strips (5) and self-tapping screws M6x16 (6), which should be tightened into the openings in fire damper body. In order to carry out the correct assembly, 4 self-tapping screws should be used per each assembly strip with length of 1200 [mm].
- d. The empty space between joint of the bodies of fire dampers A, B and fire dampers C, D should be filled with non-combustible mineral wool (as shown in (w2)).

NOTE: The alternative way of wool mounting is to use two layers of wool with thickness of 30mm. In this case, apply the fire resistant PROMASTOP CC liquid with width of 50 mm. The mass is placed between the strips of wool and between wool and damper housings.

- e. The place of sealing the top of the battery with mineral wool should be sealed with aluminum tape **(7)**.

Installation of KWP-O fire dampers batteries in rigid wall compartment (Figure 15 to 18)

- a. Make an opening in the wall with dimensions depending on the battery size and its arrangement:
 - For vertical battery consisting of two KWP-O-Ex fire dampers: $(B1+120) \times (H1+H2+180)$ (Figure 15),
 - For vertical battery consisting of three KWP-O-Ex fire dampers: $(B1+120) \times (H1+H2+H3+240)$ (Figure 16),
 - For horizontal battery consisting of two KWP-O-Ex fire dampers: $(B1+B2+180) \times (H1+120)$ (Figure 17),
 - For battery consisting of four KWP-O-Ex fire: $(B1+B2+180) \times (H1+H2+180)$ (Figure 18),
- b. Put the battery of fire dampers into the installation opening on depth marked by undercuts on the damper body [dimension 60mm]. From one side fix it with suspension Z1, and from other side, fix it to ventilation duct suspended on suspension Z2 according to the figure).

NOTE: Fixing of the ductwork has to cover the weight of the battery of fire dampers. Specifically the bolts, anchors, installation frame of the duct and screws used to join the duct with battery of fire dampers should be taken into account. If there is no possibility of ensuring the safe suspension of the battery of fire dampers during installation, the battery should be supported from the bottom side.

- c. After setting the fire damper as described, fill the gap between the fire damper and the wall with cement, cement-lime mortar or concrete or PROMASTOP MG III of production of the PROMAT company.
- d. After 72 hours from the finish of assembly, you can disassemble suspensions.

REMARKS:

- a. Install the fire damper in such way, that the damper blades would be in horizontal position.
- b. Fire damper cannot be the support for the constructed wall.
- c. Ductwork cannot be the load for the fire damper, ductwork suspensions have to provide full load capacity.
- d. Ductwork suspensions fixed to the fire damper have to be made in accordance with the ductwork manufacturer instructions.
- e. Selection of mounting rails should be performed in accordance to the guidelines provided by the manufacturer of suspensions, considering weight and arrangement of the battery of fire dampers.
- f. In place of suspensions Z1, Z2 and cement mortar, mounting brackets may be applied! Paying special attention for immobilization of the fire damper).

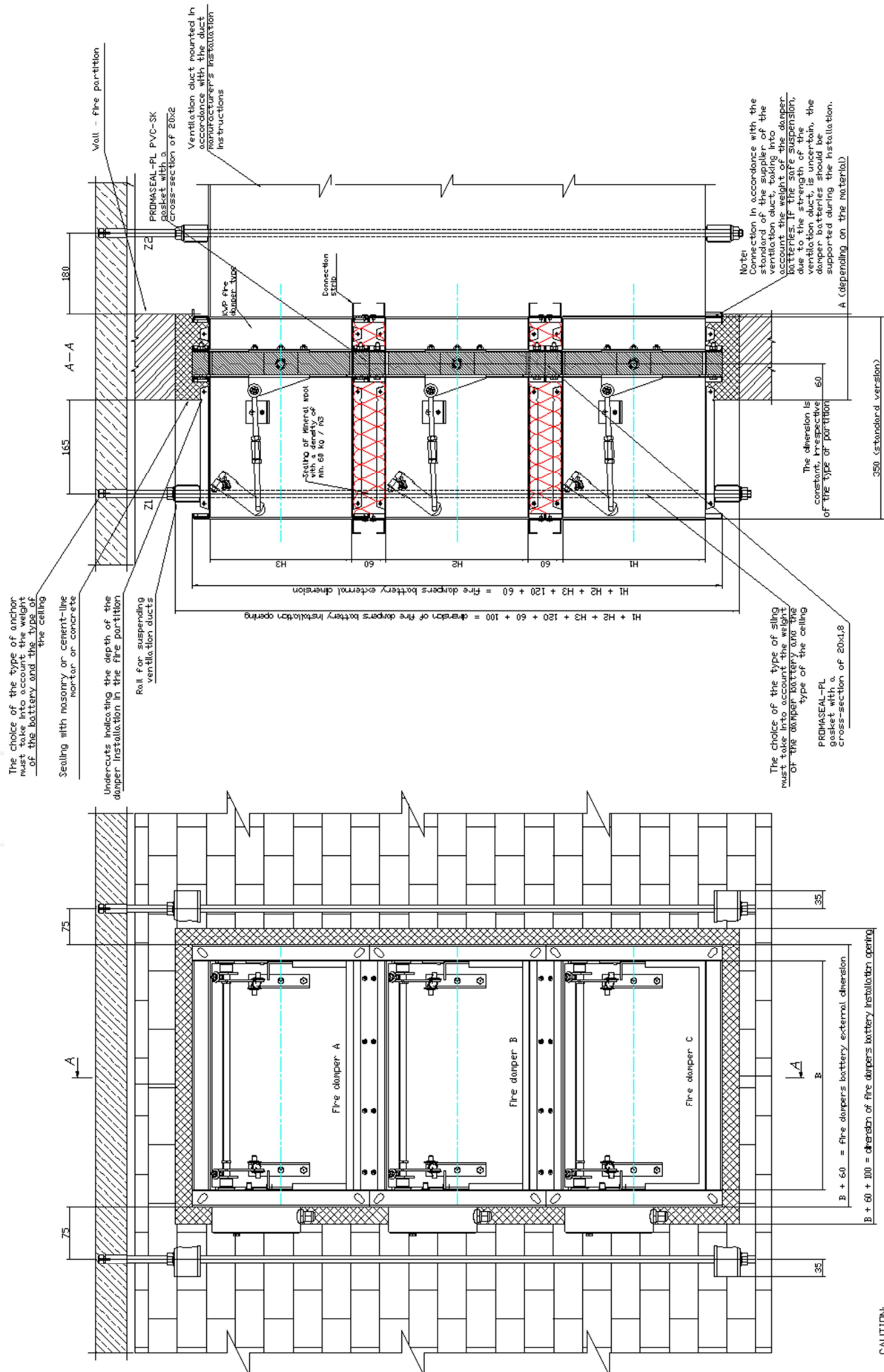


Figure 15. Installation of a battery consisting of three fire dampers KWP-O-Ex in vertical arrangement in wall

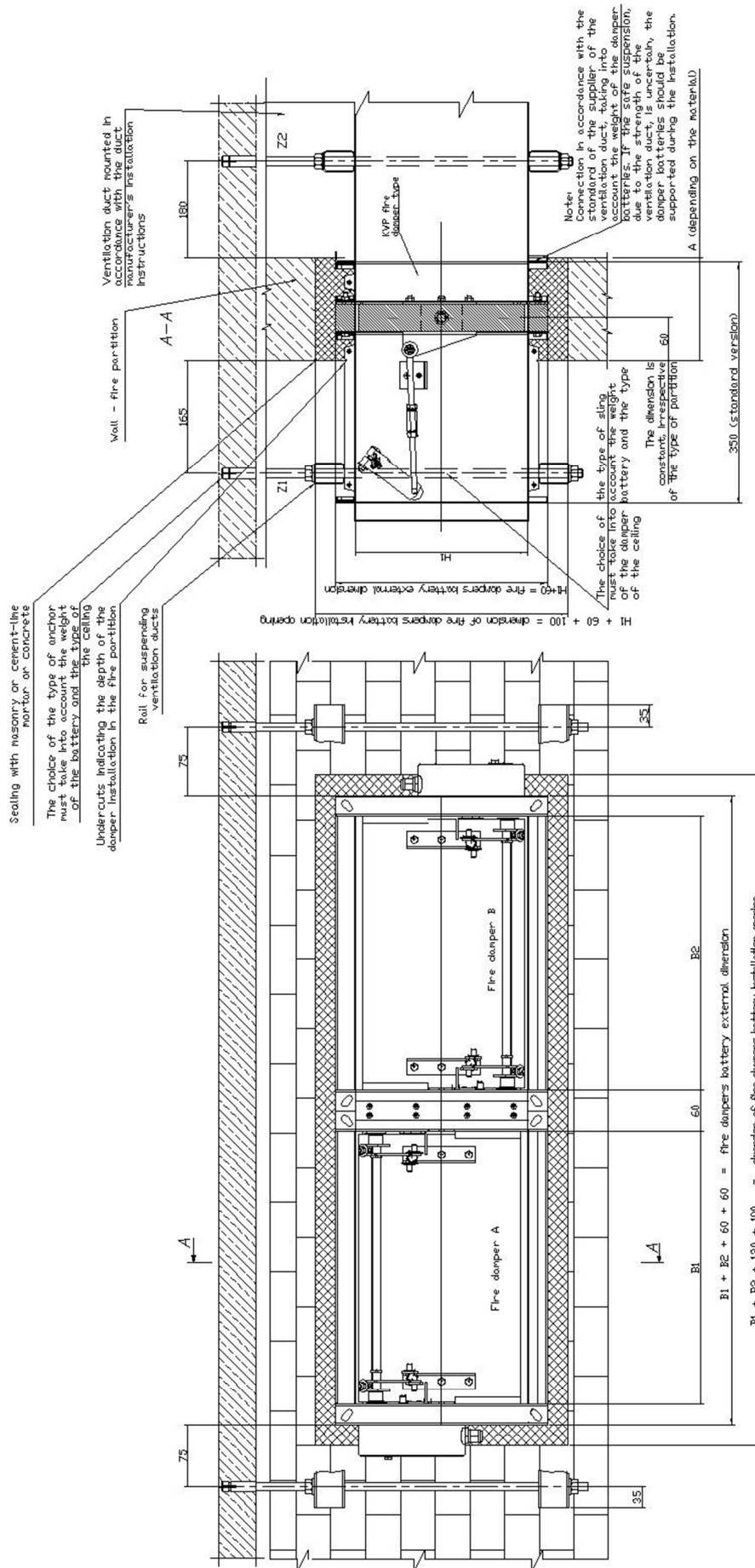


Figure 16. Installation of battery consisting of two fire dampers KWP-O-Ex in horizontal arrangement in wall

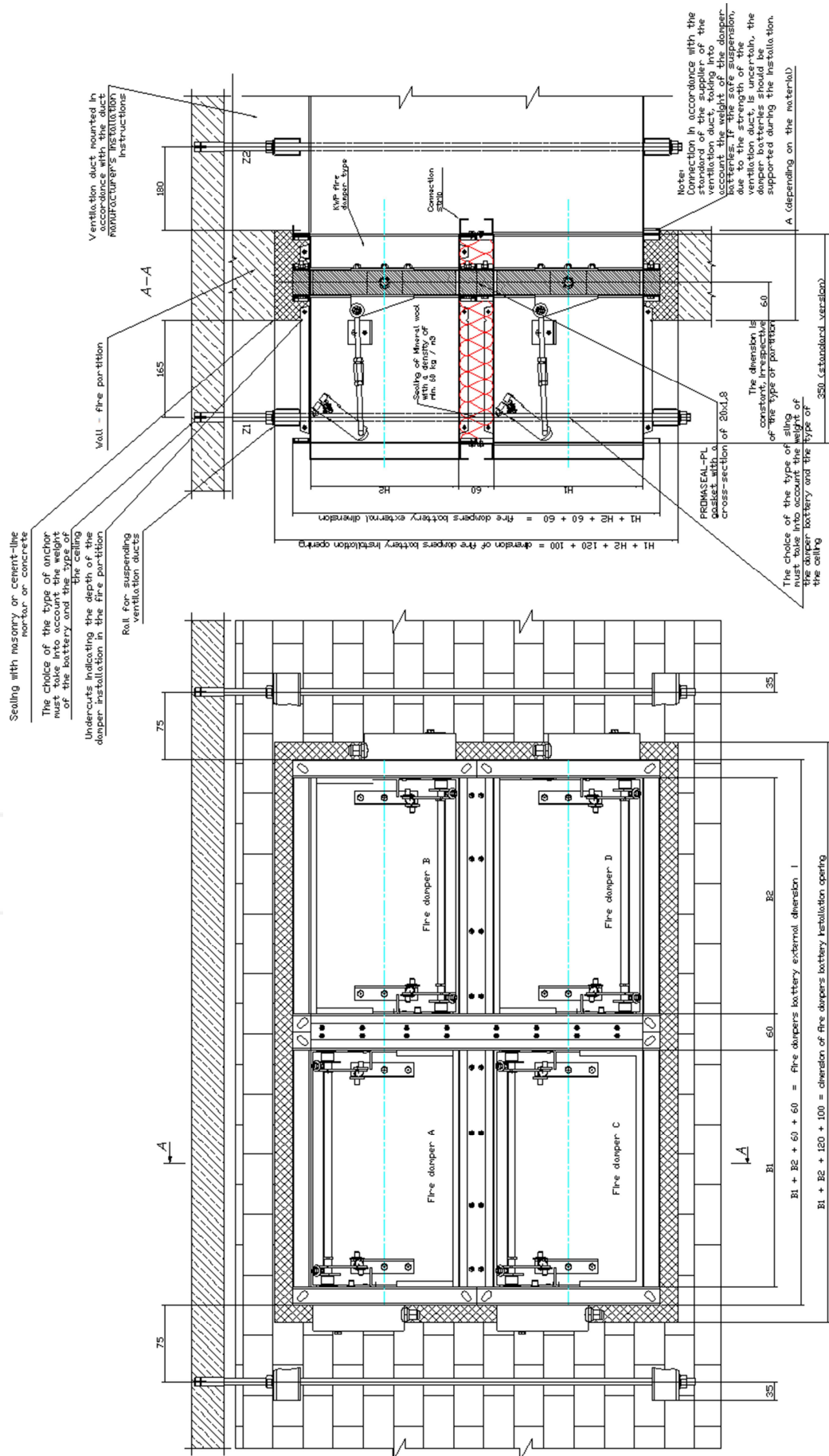


Figure 17. Installation of a battery consisting of four fire dampers KWP-O-Ex in wall

CAUTION:
 - An integral part of the drawing is the description of the fire damper. Installation guidelines recommended by SMAY
 - The Z1 and Z2 suspensions can be removed 72 hours after the fire damper assembly
 - Instead of the Z1 and Z3 suspensions, other suspension or support systems can be used for the time of assembly

9. REPLACING THE THERMAL FUSE ELEMENT IN KWP-O-S-EX

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

- Release the spring **7** from the spring mechanism plate **1**.
- 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 the nut and put into console. When you put the thermal fuse, release the hook and push the lever of hand mechanism.
- Install the assembly of thermal fuse with the bolt **14**.
- Pull the spring onto spring mechanism plate **1**.
- Open the fire damper and check that it opens and closes correctly after push the hand release lever **11**.

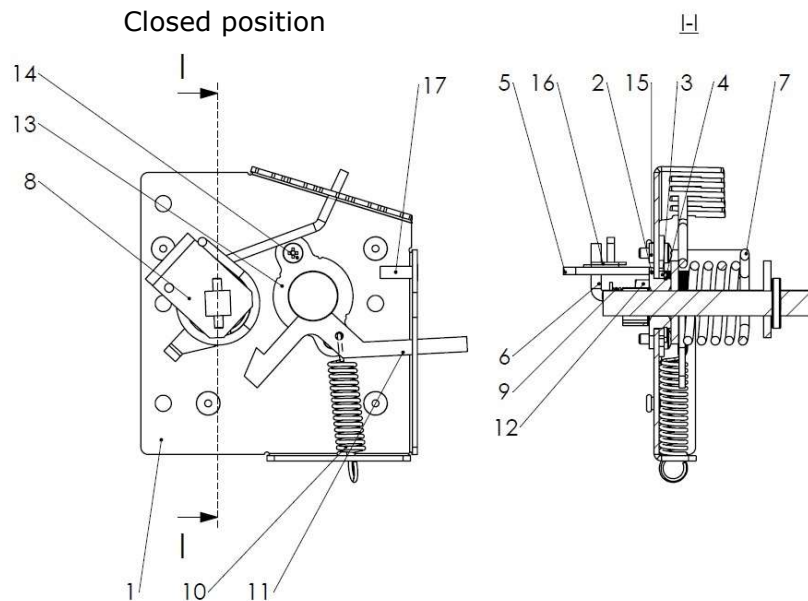


Figure 18. Spring mechanism – replacement of the thermal fuse element

10. 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-O-E(S)-Ex 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-O-E(S)-Ex dampers. A copy of this document should be sent electronically to the manufacturer (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-O-E(S)-Ex 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>
--	-----------------------------------

OBJECT / INSTALLATION LOCATION	INSTALLATION AND COMMISSIONING EXECUTION																
Object Name: Object Address:.....	<table style="width:100%;"> <tr> <td rowspan="5" style="vertical-align: middle; text-align: center;">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> <tr> <td colspan="3">Commissioning Date</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																	
3																	
4																	
5																	
6																	
7																	
8																	
9																	
10																	
11																	
12																	

13																	
14																	
15																	
16																	
17																	
18																	
19																	
20																	

Remarks:

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

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.				

11. 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-O-E(S)-Ex damper resulting from failure to comply with the guidelines contained in the documentation will not be covered by warranty repairs.

After installing KWP-O-E(S)-Ex 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.


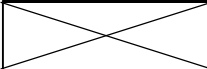
Failure to implement the above guidelines regarding periodic inspection results in the device not being allowed for further operation. Simultaneously such a device loses the manufacturer's warranty protection in accordance with the OWG

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-O-E(S)-Ex 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.

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



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

* If they occur in the controlled type of damper

No.	Dampers			Power supply voltage [V]	Visual inspection of the damper (A-F)		Damper actuator check (G-I)		Trigger control check (J-K)		Damper operation check (L-O)		Location	Remarks
	Labeling	Type	Serial number		Positive	Negative	Positive	Negative	Positive	Negative	Positive	Negative		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		

12. 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.

13. 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



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 → **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 → **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).