



Fire dampers

2020

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About us

KOMFOVENT Group of Companies

KOMFOVENT brand unites a group of 12 companies operating in Lithuania and abroad, employing more than 700 people. KOMFOVENT entirely concentrates on ventilation equipment, ventilation systems and fire safety products – both manufacturing and sales.

Product quality

KOMFOVENT is a member of the international associations Eurovent (European Humidification Industry, Indoor Climate (HVAC)) and RLT (Herstellerverband Raumluftechnische Geräte e.V.). The quality of products is certified by EUROVENT Certification, RLT + TÜV SÜD, PASSIVE HOUSE certificates.



FACTORIES

LITHUANIA

 >600
 30000 m²

LATVIA

 >100
 7000 m²

RUSSIA

 >100
 7000 m²



Since 1997, the company operating in Vilnius (Lithuania) has been running successfully and growing for more than twenty years. In the end of 2018 a new modern factory was opened in Riga (Latvia). The factory is focusing on manufacturing and sales of fire safety and ventilation system accessories products including: ducts, fittings, fire dampers, VAV dampers, diffusers etc.

Fire dampers – how it works?

Purpose of the fire dampers

Fire dampers are usually a part of HVAC (heating, ventilation, and air conditioning) system and being installed together with ducts. These kind of dampers are used for *passive* fire protection.

The main aims of fire dampers are:

- ✓ to prevent spreading toxic gases, fumes, and fire;
- ✓ to reduce property damage;
- ✓ to increase effectiveness of other fire protection systems.

Conformity with the Standards

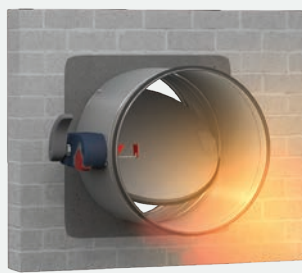
Standards and guidelines for KOMFOVENT fire dampers are fully compliant with:

- EN 15650:2010 Ventilation for buildings – Fire dampers
- EN 1366-2:2015 Fire resistance tests for service installations – Fire dampers
- EN 13501-3:2010 Fire classification of construction products and building elements
- EN 1751:2014 Ventilation for buildings. Air terminal devices. Aerodynamic testing of damper and valves

How it works?



Normal conditions, ventilation system is running, fire damper is open.



Fire breaks out, the temperature reaches 72 °C degrees. Fire damper closes because of melted fusible link.



Fire stopping sealant expands, seals the gaps and prevents spreading the fire and smoke to other compartments or premises.

All KOMFOVENT fire dampers housing and all inner parts are made only from fireproof materials. The housing is made of galvanized steel sheet or stainless steel. KOMFOVENT fire damper closing mechanism can be two types:

- Manual type (H). In this case the fire damper activated by melting fuse at temperature +72 °C. The fuse element made of two brass plates with thin layer of special meltable material in between. The fuses are for one-time use, and have to be replaced after actuation (in case of melting the fuse).
- Electromechanical (M). Electric actuator can be – 24 V, 230 V, with or without thermo-sensor.

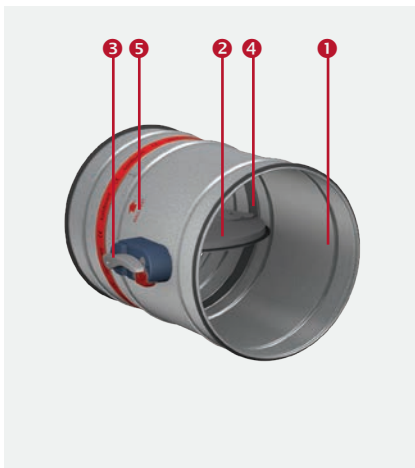
When a ventilation system is running, a damper's blade is open. In case of a fire, the temperature rises. When the temperature reaches +72 °C damper's fuse will melt closing damper's blade. Fire stopping sealant expands, seals the gaps and prevents spreading the fire and smoke to other compartments or premises. In actuator-controlled models (M), fire damper will close upon receiving a signal, activated by a smoke detector; or will close automatically, if actuator is fitted with thermo-sensor.

Fire dampers – how it works?

Fuse mechanism

KOMFOVENT fuse element mechanism has a special design that ensures the best maintenance experience. All inside mechanisms are covered and protected from external damage and dust. Fuse element is easily replaceable due to KOMFOVENT elaborated design.

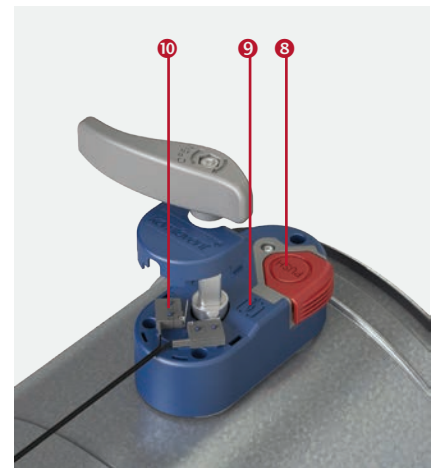
Mechanical fire damper with meltable fuse mechanism



- ① Casing
- ② Blade
- ③ Opening device with spring
- ④ Expanding sealant
- ⑤ Installation marking



- ③ Opening device with spring
- ⑥ Opening lever
- ⑦ Melting fuse
- ⑧ Test button



- ⑧ Test button
- ⑨ Marking of blade position
- ⑩ End position switch

Fire dampers – how it works?

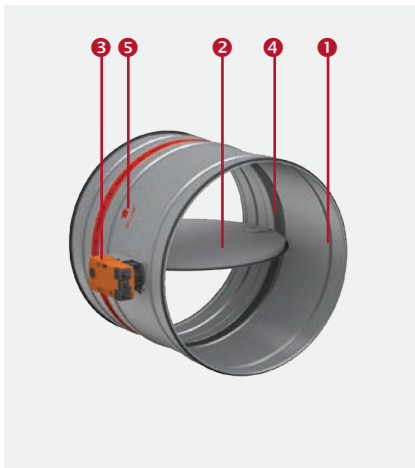
Electromechanical actuator

Electromechanical actuators are used for the automation of fire dampers to ensure efficiency and complexity of maintenance process.

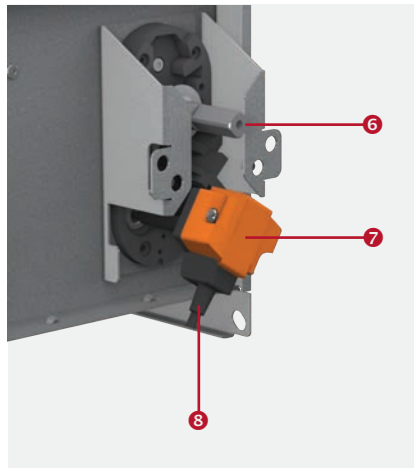
Fire dampers have special reliability requirements so they require regular inspection. The inspection process is simplified by using dampers with electromechanical actuators, which are controlled remotely from the central control panel. In case of fire, the dampers are closed

automatically receiving a signal from the central control panel. If the dampers are equipped with additional temperature sensors, the signal comes from the sensor. Depending on the size of the fire damper, they are supplied with the appropriate torque actuators. All actuators have integrated end position switches, which are used not only for damper position indication but also for regular check-ups.

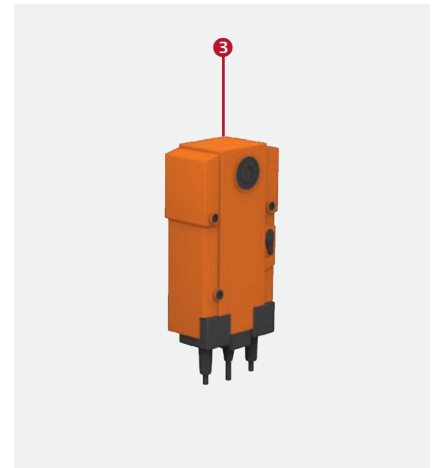
Fire damper with an electromechanical actuator and thermo sensor



- ① Casing
- ② Blade
- ③ Electrical actuator with spring
- ④ Expanding sealant
- ⑤ Installation marking



- ⑥ Axis of the blade
- ⑦ Temperature sensor (only with 24T/230T actuators)
- ⑧ Connection cables



- ③ Electrical actuator with spring

Fire dampers – how it works?

End position switch

The end position switches send signal to the control panel and the operating manager sees if the dampers blades are in the correct position. If for some reason the damper triggers in the absence of a fire, it will be immediately noticed and the fault will be repaired. It is recommended to order factory-fitted end position switches together with manually operated dampers. But it also can be fitted later on site. The end position switches may be ordered and purchased separately.

Low torque mechanism

Manually operated fire dampers have an additional option – end position switches which allow to identify the blades position from a distance. For each position of the blade (OPEN / CLOSE) one end switch is needed. Meaning in total it will be two end position switches for one fire damper.

It is easy to mount end positions switches on fire dampers with plastic actuation mechanism – only one additional plastic part must be installed (please see picture below). This plastic part is included together with the switches.



End position switch electric diagram

High torque mechanism

For rectangular fire dampers with metal actuation mechanism there is a special end switch installation kit, which can be mounted in the factory or purchased separately. When ordering fire damper, the code H-EP refers to pre-installed end position switches for CLOSED and OPEN positions (two end switches). It is also possible to install only one switch. In this case, please contact sales support. For dampers without pre-installed end position switches it is possible to buy them and mount separately.



Accessories

If ordered separately:

EP1 – includes one switch, one plastic detail and instruction (for fire dampers with low torque actuating mechanism)

EP2 – includes two switches, one plastic detail and instruction (for fire dampers with low torque actuating mechanism)

EP3 – includes two switches and mounting bracket (for rectangular fire dampers with high torque actuating mechanism only)

Product range

KOMFOVENT fire dampers:

- ✓ Certified for most types of walls and ceilings.
- ✓ Compliant with European Standards.
- ✓ Easy to install and seal using standard materials.
- ✓ Have highest airflow characteristics.



Circular fire dampers UVA

Wide range of fire dampers

Fire dampers produced by KOMFOVENT are divided in two groups – circular and rectangular. Both groups of fire dampers can be manual type (H) or motorized (M) with electrical actuator.



Rectangular fire dampers UVS



UVA 120 H



UVA 120 M



UVA 60 H



UVA 60 M



UVS 60/120 H



UVS 60/120 M



UVS 60/120 H



UVS 60/120 M



UVS 120 M

Model	Dimensions mm	Length mm	Fire resistance*	Tested in ceiling slab (concrete, gypsum) 500Pa	Tested in rigid wall (concrete, gypsum) 500Pa	Tested in the wall with fire resistant mineral wool insulation 300Pa	Actuator type	Manual fuses unblock mechanism
UVA 120 H	Ø 100-315	386	EI 120 (ve, ho i↔o)S	●	●	EI 60 (ho i↔o)S		●
	Ø 355-560	505	EI 120 (ve, ho i↔o)S					
UVA 120 M	Ø 100-315	386	EI 120 (ve, ho i↔o)S	●	●	EI 60 (ho i↔o)S	●	
	Ø 355-560	505	EI 120 (ve, ho i↔o)S					
UVA 60 H	Ø 355-560	505	EI 60 (ve, ho i↔o)S		●			●
UVA 60 M	Ø 355-560	505	EI 60 (ve, ho i↔o)S		●		●	
UVS 60 H	B 200-1000 H 200-800	385	EI 60 (ve, ho i↔o)S		●			●
	Ø 630-1000	655-805						
UVS 60 M	B 200-1000 H 200-800	400	EI 60 (ve, ho i↔o)S		●		●	
	Ø 630-1000	655-805						
UVS 120 H	B 200-1000 H 200-800	400	EI 120 (ve, ho i↔o)S	●	●			●
	Ø 630-1000	655-805						
UVS 120 M	B 200-1000 H 200-800	400	EI 120 (ve, ho i↔o)S	●	●		●	
	Ø 630-1000	655-805						
UVS 120 M	B 1050-1600 H 200-1000	400	EI 90 (ve, ho i↔o)S EI 120 (ho i↔o)S EI 120 (ve i↔o)S	●	●		●	

* According to EN13501-3: 2015, ho – horizontal mounting, ve – vertical mounting, i↔o – when operating from inside to outside and from outside to inside.

Circular fire dampers

Circular fire dampers are designed for circular duct ventilation systems.



Main characteristics:

- Nominal sizes: Ø100–1000 mm;
- Fire resistance up to EI120S;
- CE certified acc. to EN 15650;
- Tested acc. to EN 1366-2;
- External Casing leakage class C acc. to EN 12237;
- Internal leakage class 3 acc. to EN 1751;
- The UVA housing is made of galvanized steel sheet EN 10142.

Ordering sample

UVA -120-M24-T-200 -AISI316L

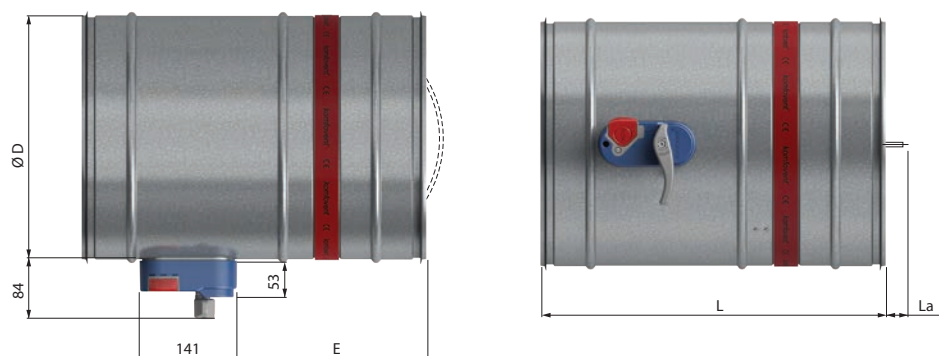
1 2 3 4 5 6

- ① **Fire damper:** UV
- ② **Model:** A – circular; S – rectangular
- ③ **Fire resistance EI acc. to EN13501-3:** 60–60 min.; 120–120 min.
- ④ **Mechanism type**
 - H – manual mechanism
 - H-EP – manual mechanism with two end position switches for blade position CLOSED and OPEN
 - M24 – Belimo actuator 24 V
 - M230 – Belimo actuator 230 V
 - M24-T – Belimo actuator 24 V with thermoelectric tripping device
 - M230-T – Belimo actuator 230 V with thermoelectric tripping device
 - M24-ST – Belimo actuator 24 V with connecting plugs for control and monitoring systems
 - M24-T-ST – Belimo actuator 24 V with thermoelectric tripping device and connecting plugs for control and monitoring systems
- ⑤ **Dimensions:** circular D100 - D1000; rectangular B 200-1600 x H 200-1000
- ⑥ **AISI*:** 304; 316L – stainless steel grade

* Only for fire dampers made of stainless steel.

Circular fire dampers

Sizes and weights of small and medium circular fire dampers



Dimensions, mm				
D	L	La	E	Weight, kg 120min. (60min.)
100	386	-	196	1.5
125	386	-	196	1.7
160	386	-	196	2.1
200	386	-	196	2.5
250	386	-	196	3.1
315	386	28	196	3.9
355	505	34	274	9.8 (7.9)
400	505	56	274	11.4 (9.0)
450	505	81	274	13.4 (10.4)
500	505	106	274	15.6 (11.9)
560	505	136	274	18.5 (13.7)

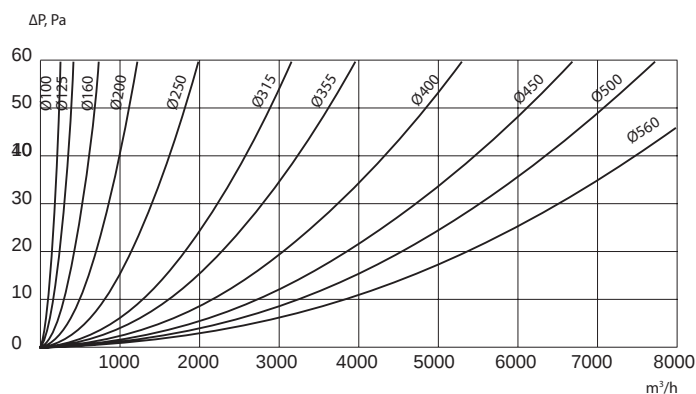
Effective cross area

UVA60, UVA60M	
Diameter D, mm	Effective cross area A, m ²
355	0,0832
400	0,1079
450	0,1390
500	0,1740
560	0,2212

UVA120, UVA120M	
Diameter D, mm	Effective cross area A, m ²
100	0,0040
125	0,0074
160	0,0138
200	0,0234
250	0,0390
315	0,0640
355	0,0832
400	0,1079
450	0,1390
500	0,1740
560	0,2212

Circular fire dampers

Pressure loss



For bigger parameters (630–1000 mm), please refer to the rectangular fire dampers section.

UVA 60 H														
UVA 60H-355			UVA 60H-400			UVA 60H-450			UVA 60H-500			UVA 60H-560		
355			400			450			500			560		
PSTP	QSTP	v	PSTP	QSTP	v	PSTP	QSTP	v	PSTP	QSTP	v	PSTP	QSTP	v
Pa	m³/h	m/s	Pa	m³/h	m/s	Pa	m³/h	m/s	Pa	m³/h	m/s	Pa	m³/h	m/s
0.66	212.283	0.60	0.7	272.1	0.60	0.3	188.8	0.33	0.7	399.8	0.57	0.7	399.4	0.45
0.99	427.995	1.20	1.0	547.3	1.21			0.00	1.0	803.1	1.14	0.7	804.4	0.91
1.99	650.364	1.83	1.6	819.4	1.81	1.0	602.9	1.05	1.7	1192.0	1.69	1.3	1195.0	1.35
2.98	865.312	2.43	2.6	1083.6	2.40	1.3	805.6	1.41	2.6	1605.4	2.27	2.0	1613.3	1.82
4.30	1075.433	3.02	4.0	1367.3	3.02	1.6	1002.3	1.75	3.6	2002.0	2.83	2.6	2001.0	2.26
6.29	1279.291	3.59	5.9	1635.6	3.62	2.3	1194.0	2.09	5.3	2381.1	3.37	4.0	2383.4	2.69
8.60	1517.468	4.26	7.9	1906.8	4.22	2.6	1407.2	2.46	7.3	2809.4	3.97	5.3	2802.9	3.16
11.24	1732.499	4.86	10.2	2167.7	4.79	3.3	1613.3	2.82	9.6	3194.3	4.52	6.6	3190.5	3.60
14.22	1937.665	5.44	13.2	2422.2	5.35	4.3	1806.3	3.15	12.6	3570.5	5.05	8.6	3565.0	4.02
17.19	2146.407	6.02	15.8	2714.7	6.00	5.3	2000.6	3.49	15.9	4002.4	5.66	10.9	4009.9	4.52
20.83	2351.021	6.60	18.8	2982.1	6.59	6.3	2195.9	3.84	18.8	4405.0	6.23	13.2	4404.0	4.97
24.46	2550.403	7.16	22.1	3232.8	7.15	7.6	2381.4	4.16	22.1	4802.2	6.79	16.2	4800.3	5.41
30.08	2790.917	7.83	25.7	3492.7	7.72	8.6	2572.6	4.49	26.8	5180.7	7.33	18.5	5191.9	5.86
34.38	2998.387	8.41	29.3	3743.6	8.28	10.6	2797.0	4.89	30.7	5563.1	7.87	21.5	5579.3	6.29
39.66	3205.177	9.00	34.9	4080.5	9.02	11.9	2990.0	5.22	34.4	5948.4	8.42	25.1	5954.8	6.72
44.95	3404.443	9.55	40.5	4347.1	9.61	13.5	3186.2	5.56	39.0	6309.2	8.93	29.1	6317.7	7.13
49.25	3605.736	10.12	45.4	4609.8	10.19	15.2	3375.8	5.90	47.9	6833.6	9.67	32.7	6852.9	7.73
54.87	3803.776	10.67	50.0	4882.1	10.79	16.8	3562.5	6.22	52.9	7238.5	10.24	36.7	7244.5	8.17
64.12	4101.514	11.51	55.6	5139.6	11.36	19.1	3744.0	6.54	56.9	7621.3	10.78	40.7	7626.8	8.60
71.06	4305.917	12.08	61.5	5403.0	11.94	21.1	3996.7	6.98	64.8	7984.6	11.30	45.9	7990.0	9.01
						24.1	4187.6	7.31						
						26.1	4392.2	7.67						
						28.4	4598.0	8.03						
						30.7	4792.6	8.37						
						34.6	4971.7	8.68						
						35.3	5183.8	9.05						
						38.3	5361.3	9.36						
						42.6	5551.3	9.70						
						43.6	5756.3	10.05						
						45.5	5947.6	10.39						
						50.2	6124.5	10.70						
						54.1	6282.0	10.97						
						58.7	6623.0	11.57						
						62.4	6830.3	11.93						

Circular fire dampers

Pressure loss

UVA 120 H																	
UVA120H-100			UVA120H-125			UVA120H-160			UVA120H-200			UVA 120H-250			UVA 120H-315		
PSTP Pa	QSTP m³/h	v m/s	PSTP Pa	QSTP m³/h	v m/s	PSTP Pa	QSTP m³/h	v m/s	PSTP Pa	QSTP m³/h	v m/s	PSTP Pa	QSTP m³/h	v m/s	PSTP Pa	QSTP m³/h	v m/s
0.3	18.9	0.67	0.3	26.2	0.59	0.7	57.9	0.80	0.7	90.1	0.80	0.3	99.8	0.56	0.66	207.344	0.74
1.6	39.8	1.41	1.0	49.9	1.13	1.6	115.7	1.60	1.6	178.6	1.58	1.0	197.1	1.12	1.32	417.538	1.49
2.9	60.2	2.13	2.0	74.8	1.69	3.0	172.6	2.38	2.9	270.4	2.39	1.6	300.8	1.70	2.63	634.012	2.26
5.6	80.2	2.84	3.3	99.9	2.26	5.6	232.8	3.22	4.9	361.1	3.19	2.3	398.8	2.26	4.28	844.944	3.01
8.8	100.1	3.54	5.2	124.9	2.83	8.9	290.9	4.02	8.2	448.4	3.96	3.6	494.6	2.80	6.58	1051.539	3.75
12.8	119.9	4.24	7.2	149.1	3.37	12.5	348.8	4.82	11.8	544.4	4.81	5.3	604.3	3.42	9.54	1249.466	4.45
17.7	139.6	4.94	9.8	173.3	3.92	17.1	405.2	5.60	16.1	634.4	5.61	7.6	706.2	4.00	13.16	1478.489	5.27
22.6	158.9	5.62	12.8	196.9	4.46	22.0	461.7	6.38	21.3	726.3	6.42	9.9	804.5	4.55	17.10	1686.528	6.01
28.2	178.4	6.31	16.7	225.1	5.10	27.2	514.8	7.11	26.6	815.1	7.21	12.5	903.1	5.11	21.38	1891.339	6.74
34.4	197.0	6.97	21.0	250.6	5.67	34.8	581.1	8.03	32.5	903.2	7.99	15.1	1000.6	5.66	26.31	2092.406	7.46
42.9	220.1	7.78	25.3	276.1	6.25	42.4	639.5	8.84	38.7	987.9	8.73	18.1	1096.9	6.21	31.57	2296.400	8.19
51.1	240.6	8.51	30.2	300.9	6.81	50.2	699.8	9.67	45.9	1077.0	9.52	21.4	1192.7	6.75	36.83	2490.877	8.88
60.3	260.3	9.21	34.8	325.8	7.37	58.8	756.0	10.44	53.4	1160.9	10.26	24.6	1283.2	7.26	45.37	2731.737	9.74
69.5	280.6	9.93	40.3	350.2	7.93	68.0	813.3	11.24	61.6	1246.3	11.02	30.2	1410.0	7.98	51.95	2932.114	10.45
79.6	300.2	10.62	46.6	374.4	8.48	77.8	871.4	12.04	73.4	1357.7	12.00	34.2	1507.9	8.53	59.18	3132.797	11.17
90.1	319.7	11.31	52.8	398.3	9.02							39.4	1606.4	9.09	66.42	3331.860	11.88
102.0	339.4	12.00	59.1	422.9	9.57							44.0	1703.8	9.64			
0.0			66.0	447.3	10.12							48.6	1799.0	10.18			
			72.5	469.9	10.64							54.2	1900.6	10.76			
			80.1	493.0	11.16							59.8	1992.9	11.28			
			87.9	516.4	11.69							66.7	2088.2	11.82			

Actuators for circular dampers

Fire dampers are equipped with electrical actuators with spring return mechanism and integrated end position switch. In case of power failure, fire dampers will close

automatically. Actuators of different torque are available depending on the damper diameter.

Classification according to actuators type

Diameter, mm															
100	125	160	200	250	315	355	400	450	500	560	630	710	800	900	1000

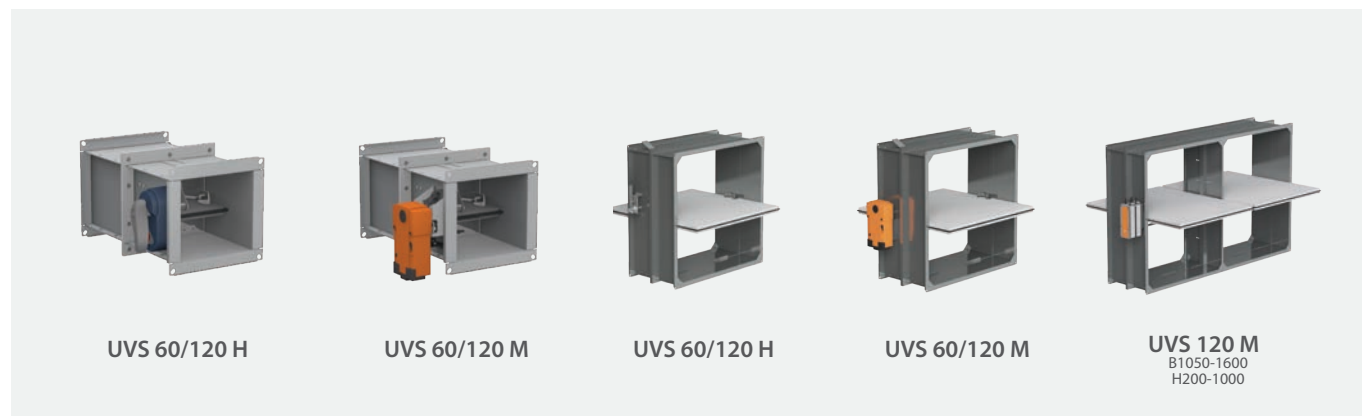
 BFL24 / BFL230
(4Nm) actuator

 BFN24 / BFN230
(9Nm) actuator

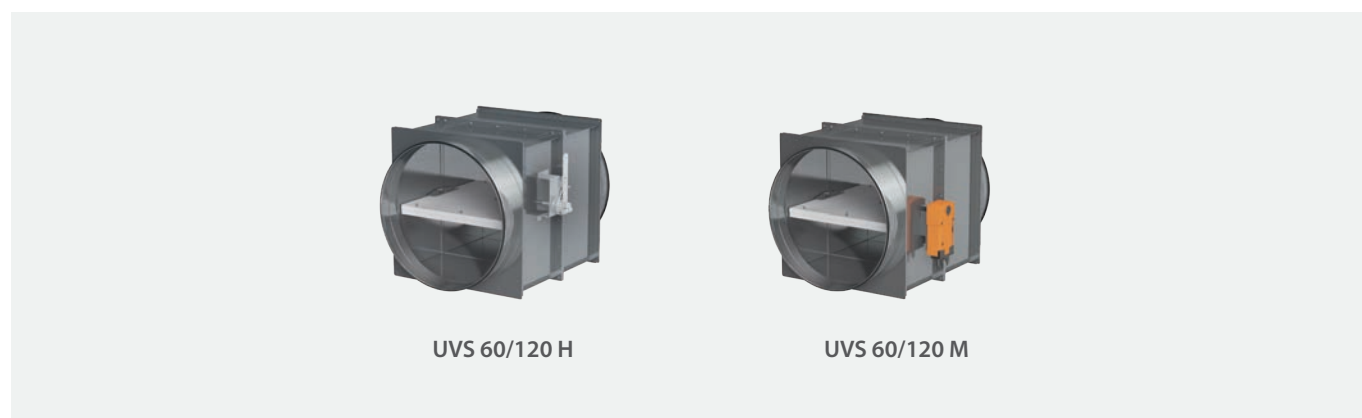
 BF24 / BF230
(18Nm) actuator

Rectangular fire dampers

Rectangular fire dampers for rectangular duct ventilation systems



Rectangular fire dampers for circular duct connection



Main characteristics

- Rectangular dampers from 200×200 mm to 1600×1000 mm;
- CE certified according to EN 15650;
- Tested according to EN 1366-2;
- Fire resistance up to EN 120S;
- External casing leakage – class C acc. to EN 1507;
- Internal blade leakage – class 3 acc. to EN 1751;
- The UVS housing is made of galvanized steel sheet EN 10142.

Ordering sample:

UVS -120-M24-T-200 -AISI316L

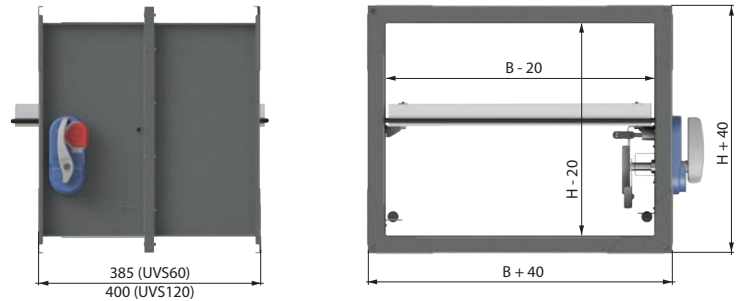
① ② ③ ④ ⑤ ⑥

- ① **Fire damper:** UV
- ② **Model:** A – circular; S – rectangular
- ③ **Fire resistance** El acc. to EN13501-3: 60–60 min.; 120–120 min.
- ④ **Mechanism type**
 - H – manual mechanism
 - H-EP – manual mechanism with two end position switches for blade position CLOSED and OPEN
 - M24 – Belimo actuator 24 V
 - M230 – Belimo actuator 230 V
 - M24-T – Belimo actuator 24 V with thermoelectric tripping device
 - M230-T – Belimo actuator 230 V with thermoelectric tripping device
 - M24-ST – Belimo actuator 24 V with connecting plugs for control and monitoring systems
 - M24-T-ST – Belimo actuator 24 V with thermoelectric tripping device and connecting plugs for control and monitoring systems
- ⑤ **Dimensions:** circular D100 - D1000; rectangular B 200-1600 × H 200-1000
- ⑥ **AISI*:** 304; 316L – stainless steel grade

* Only for fire dampers made of stainless steel.

Rectangular fire dampers

Sizes and weights



Weight of rectangular fire dampers UVS for 60 min. manual* (blade 20 mm)

		Dimensions, mm															
H \ B	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
200	4.7	5.2	5.8	6.4	6.9	7.9	8.4	8.9	9.4	10	10.5	11	11.5	12	12.6	13.1	13.6
250	5.2	5.8	6.3	7	8	8.6	9.1	9.7	10.2	10.8	11.3	11.9	12.4	13	13.6	14.1	14.7
300	6.0	6.6	7.2	8.3	8.9	9.5	10.1	10.7	11.3	11.8	12.4	13.0	13.6	14.2	14.8	15.4	16.0
350	6.5	7.1	8.2	8.9	9.5	10.2	10.8	11.4	12.0	12.7	13.3	13.9	14.5	15.2	15.8	16.4	17.0
400	7.0	8.1	8.8	9.5	10.2	10.9	11.5	12.2	12.8	13.5	14.2	14.8	15.5	16.1	16.8	17.4	18.0
450	8.0	8.7	9.4	10.1	10.8	11.6	12.2	12.9	13.6	14.3	15.0	15.7	16.4	17.0	17.7	18.4	19.1
500	8.5	9.2	9.9	10.8	11.5	12.2	13.0	13.7	14.4	15.2	15.9	16.8	17.5	18.2	18.9	19.6	20.3
550	9.0	9.8	10.5	11.4	12.2	12.9	13.7	14.5	15.2	16.0	16.9	17.7	18.4	19.2	19.9	20.6	21.4
600	9.5	10.3	11.1	12.0	12.8	13.6	14.4	15.2	16.0	16.8	17.8	18.6	19.3	20.1	20.9	21.6	22.4
650	10.3	11.1	11.9	12.7	13.5	14.3	15.1	16.0	17.0	17.8	18.6	19.4	20.2	21.0	21.8	22.6	23.4
700	10.8	11.7	12.8	13.6	14.4	15.3	16.1	17.0	17.8	18.6	19.5	20.3	21.1	22	22.8	23.6	24.5
750	11.4	12.2	13.3	14.2	15.1	15.9	16.8	17.7	18.6	19.4	20.3	21.2	22	22.9	23.8	24.6	25.5
800	11.9	12.8	13.9	14.8	15.7	16.6	17.5	18.4	19.3	20.2	21.1	22.0	22.9	23.8	24.7	25.6	26.5

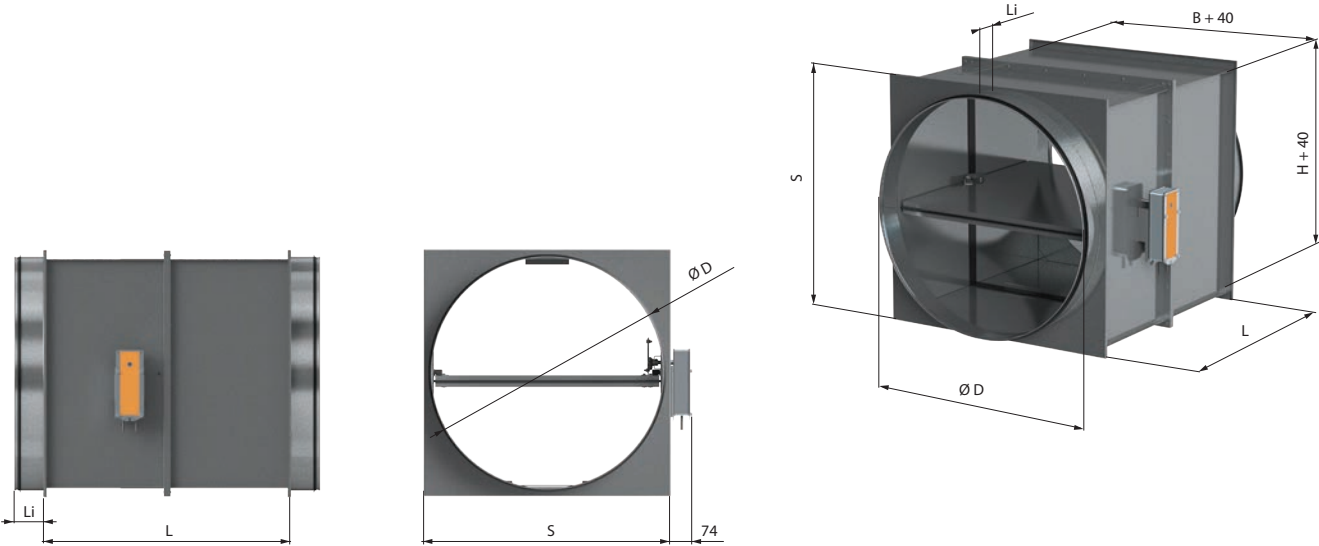
Weight of rectangular fire dampers UVS for 120 min. manual* (blade 40 mm)

		Dimensions, mm																						
H \ B	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
200	5.4	6.0	6.8	7.6	8.2	9.4	10.0	10.7	11.3	12.1	12.7	13.4	14.0	14.7	15.4	16.1	16.8	21.1	21.9	22.5	23.3	23.9	24.7	25.3
250	6.0	6.8	7.5	8.4	9.6	10.4	11.1	11.9	12.5	13.3	14.0	14.8	15.5	16.3	17.1	17.8	18.6	23.1	23.9	24.6	25.3	26.1	27.1	27.7
300	7.0	7.8	8.6	9.9	10.8	11.6	12.4	13.2	14.0	14.8	15.7	16.5	17.3	18.1	18.9	19.7	20.5	25.0	25.9	26.6	27.3	28.3	29.5	30.0
350	7.7	8.5	9.8	10.8	11.7	12.6	13.5	14.4	15.2	16.1	17.0	17.9	18.8	19.6	20.5	21.4	22.3	27.0	27.9	28.7	31.9	32.8	33.7	34.6
400	8.3	9.7	10.6	11.7	12.6	13.6	14.6	15.5	16.5	17.4	18.4	19.3	20.3	21.2	22.2	22.8	23.7	31.1	32.1	33.0	34.0	34.9	36.0	36.9
450	9.4	10.4	11.5	12.6	13.6	14.6	15.7	16.7	17.7	18.7	19.7	20.7	21.8	22.5	23.4	24.4	25.4	33.1	34.2	35.1	36.2	37.2	38.3	39.3
500	10.1	11.2	12.3	13.5	14.5	15.7	16.7	17.8	18.9	20.0	21.1	22.1	23.2	24.2	25.3	26.3	27.4	35.0	36.2	37.2	38.4	39.4	40.5	41.6
550	10.8	11.9	13.1	14.3	15.5	16.7	17.8	19.0	20.1	21.3	22.5	23.5	24.6	25.7	26.8	27.9	29.1	37.0	38.2	39.3	40.5	41.6	42.8	43.9
600	11.5	12.7	13.9	15.2	16.4	17.7	18.9	20.1	21.3	22.3	23.7	24.9	26.1	27.2	28.4	29.6	30.8	38.9	40.1	41.3	42.6	43.7	45.0	49.4
650	12.3	13.6	14.8	16.1	17.3	18.5	21.0	21.0	22.5	23.8	25.0	26.2	27.5	28.7	29.9	31.2	32.5	40.9	42.1	43.4	44.8	49.7	51.0	51.7
700	13.0	14.3	15.9	17.2	18.5	19.8	22.4	22.4	23.7	25.0	26.3	27.6	28.9	30.2	31.5	32.8	34.2	42.8	44.1	48.7	50.1	51.4	52.8	54.0
750	13.7	15.0	16.7	18.0	19.4	20.8	23.5	23.5	24.9	26.2	27.6	29.0	30.3	31.7	33.1	34.4	35.9	44.8	49.3	50.7	52.1	53.5	54.9	56.3
800	14.3	15.8	17.4	18.9	20.3	21.7	24.6	24.6	26.1	27.5	28.9	30.3	31.8	33.2	34.7	36.1	37.6	49.8	51.3	52.7	54.2	55.7	57.2	58.6
850																		51.5	53.1	54.7	56.2	57.8	59.2	60.9
900																		53.2	54.9	56.5	58.1	59.8	61.2	63.2
950																		55.0	56.7	58.4	60.2	61.9	63.3	65.5
1000																		56.7	58.6	60.4	62.2	64.0	65.4	67.8

*Weight with electric actuators is + 1,5kg.

Rectangular fire dampers

Rectangular fire dampers for circular duct connection



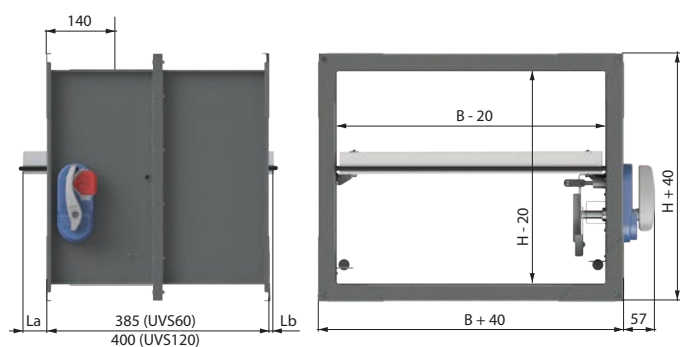
Dimensions, mm								
B×H-D	L		Li	S	Weight, kg			
	60H/60M	120H/120M			60H	60M	120H	120M
630×630-630	660	675	80	675	28,7	29,7	34,7	35,7
700×700-710	730	745	100	745	34,5	25,6	39,6	41,6
800×800-800	830	845	100	845	43,0	44,0	48,0	49,0
900×800-900	1030	1045	100	945	48,0	49,4	54,4	55,4
1000×800-1000	1070	1085	120	1 045	52,0	53,6	57,6	58,6

EXAMPLE FOR ORDERING: fire damper UVS120H-630×630-630.

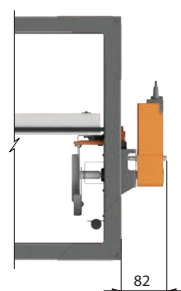
Rectangular fire dampers

Blade exposition according to damper size and type

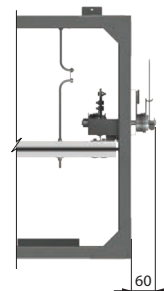
UVS 60/120 H
single blade
low torque mechanism



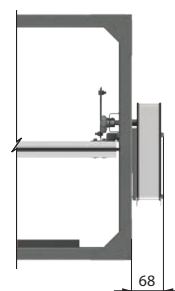
UVS 60/120 M
single blade
low torque mechanism



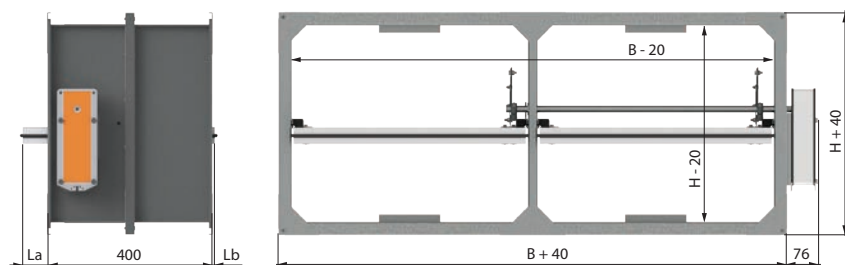
UVS 60/120 H
single blade
high torque mechanism



UVS 60/120 M
single blade
high torque mechanism



UVS 120 M
double blade
high torque mechanism



H	Low torque mechanism			Double blade, high torque mechanism, only with electric actuator		
	La	Lb (UVS60)	Lb (UVS120)	La	Lb (UVS60)	Lb (UVS120)
200-350	-	-	-	-	-	-
400	4	-	-	10	-	-
450	29	-	-	35	-	-
500	54	26	12	60	20	6
550	79	51	37	85	45	31
600	104	76	62	110	70	56
650				135	95	81
700				160	120	106
750				185	145	131
800				210	170	156
850				235	195	181
900				260	220	206
950				285	245	231
1000				310	270	256

Rectangular fire dampers

Classification according to the design type UVS 60 / UVS 120, UVS 120M

[illegible]

UVS 60 / UVS 120
single blade,
small torque mechanism



UVS 60 / UVS 120
single blade,
large torque mechanism



UVS 120 M
double blade,
only with electric actuators

Classification according to the installed actuators type

[illegible][illegible]

BFL24 / BFL230
BFL (4 Nm) actuator



BFN24 / BFN230
BFN (9 Nm) actuator



BF24 / BF230
BF (18 Nm) actuator

Rectangular fire dampers

Effective cross area and resistance rate

UVS 60/120 H, UVS 60/120 M effective cross area m²

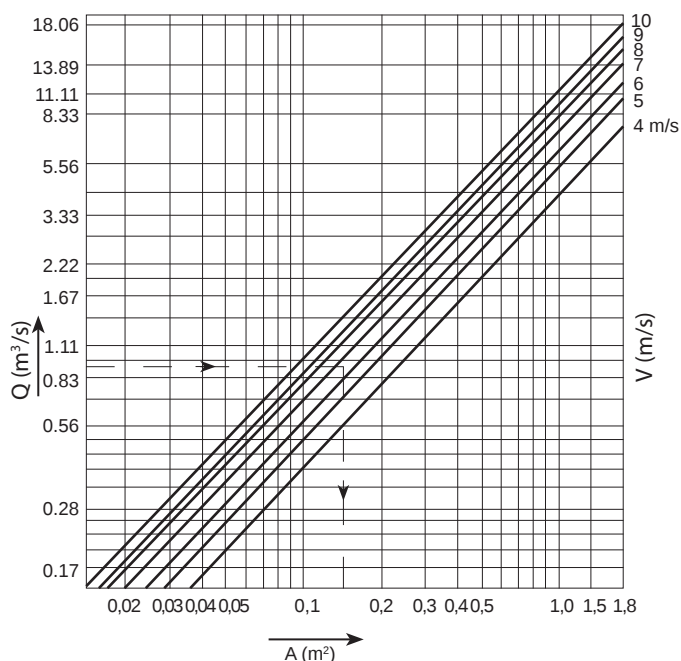
		Dimensions, mm															
B	H	200	250	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600
200	200	0,018	0,026	0,033	0,047	0,044	0,054	0,065	0,075	0,086	0,097	0,101	0,112	0,122	0,133	0,144	0,154
250	250	0,027	0,036	0,046	0,065	0,067	0,082	0,098	0,114	0,129	0,145	0,153	0,169	0,184	0,200	0,216	0,231
300	300	0,035	0,047	0,059	0,084	0,090	0,111	0,131	0,152	0,172	0,193	0,205	0,226	0,246	0,267	0,288	0,308
400	400	0,051	0,068	0,086	0,120	0,136	0,167	0,198	0,228	0,259	0,289	0,309	0,340	0,370	0,401	0,432	0,462
500	500	0,068	0,090	0,112	0,156	0,183	0,223	0,264	0,305	0,345	0,386	0,413	0,454	0,494	0,535	0,576	0,616
600	600	0,084	0,111	0,138	0,193	0,229	0,280	0,330	0,381	0,432	0,482	0,517	0,568	0,618	0,669	0,720	0,770
700	700	0,100	0,133	0,165	0,229	0,276	0,336	0,397	0,457	0,518	0,579	0,621	0,682	0,742	0,803	0,864	0,924
800	800	0,117	0,154	0,191	0,266	0,322	0,393	0,463	0,534	0,604	0,675	0,725	0,796	0,866	0,937	1,008	1,078
900	900											0,793	0,874	0,954	1,035	1,116	1,196
1000	1000											0,893	0,984	1,074	1,165	1,256	1,346

UVS 60/120 H, UVS 60/120 M – resistance degree ζ

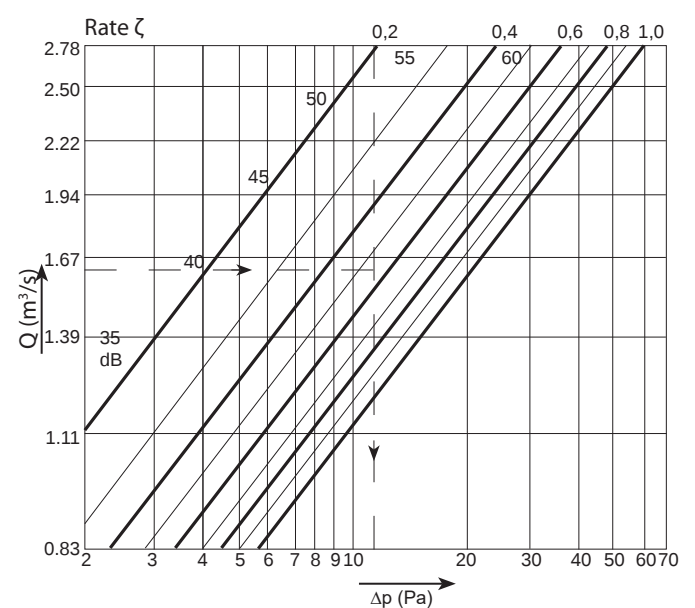
		Dimensions, mm															
B	H	200	250	300	400	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600
200	200	0,99	0,98	0,87	0,85	0,84	0,75	0,73	0,71	0,69	0,66	0,65	0,64	0,61	0,58	0,55	0,53
250	250	0,95	0,89	0,85	0,74	0,73	0,71	0,66	0,65	0,64	0,61	0,59	0,55	0,54	0,53	0,52	0,51
300	300	0,93	0,85	0,80	0,73	0,71	0,68	0,65	0,63	0,62	0,59	0,56	0,54	0,52	0,48	0,47	0,46
400	400	0,92	0,87	0,79	0,72	0,70	0,66	0,64	0,62	0,61	0,58	0,55	0,53	0,51	0,47	0,46	0,45
500	500	0,91	0,85	0,78	0,71	0,69	0,67	0,63	0,61	0,59	0,57	0,54	0,52	0,50	0,45	0,43	0,42
600	600	0,90	0,83	0,76	0,70	0,68	0,66	0,62	0,60	0,58	0,56	0,53	0,51	0,49	0,44	0,42	0,41
700	700	0,89	0,81	0,75	0,69	0,67	0,65	0,61	0,58	0,55	0,53	0,50	0,49	0,47	0,43	0,40	0,39
800	800	0,88	0,80	0,73	0,68	0,66	0,64	0,60	0,57	0,54	0,52	0,49	0,48	0,46	0,42	0,39	0,38
900	900											0,47	0,46	0,45	0,41	0,38	0,37
1000	1000											0,45	0,45	0,44	0,40	0,37	0,36

Pressure loss and noise level

Determination of effective cross area A (m²)



Pressure loss and noise level



Electromechanical actuators

BFL and BFL-T, BFL-T-ST actuators

Operation principles of actuators

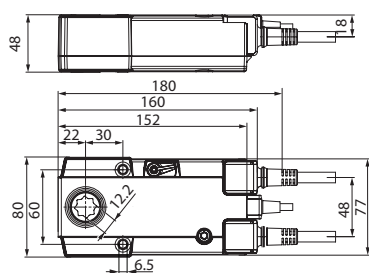
When an electric current is supplied to the actuator, the fire damper is in an open position. When the electricity supply to the actuator is interrupted, the return spring triggers and closes the damper. The actuator can also be controlled manually and fixed in any position.

BFL24-T / BFL230-T actuators control fire dampers after receiving signals from a centralised control system, or in response to a temperature sensor. Once the air

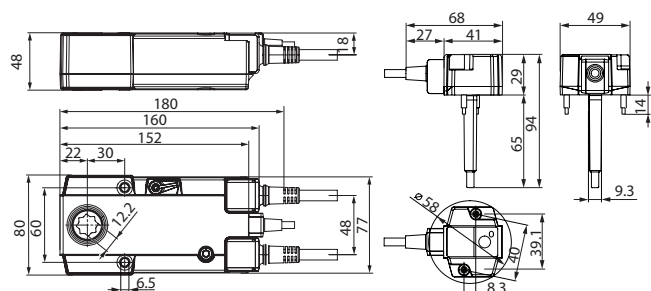
temperature reaches +72 °C, temperature sensors will respond and permanently terminate the power supply to the actuator. After each actuation, temperature sensors must be replaced.

ST model is equipped with connection plugs for simple integration in control and monitoring systems or bus networks via communication and power supply units.

BFL24 / BFL230



BFL24 -T/ BFL230-T

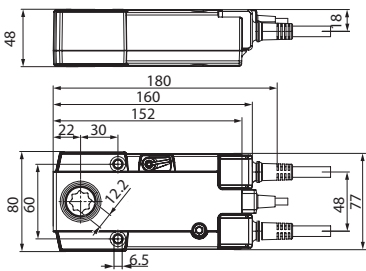


Technical specification	BFL24	BFL24-T	BFL230	BFL230-T
Electric current	AC/DC 24 V 50/60 Hz	AC/DC 24 V 50/60 Hz	AC 230 V 50/60 Hz	AC 230 V 50/60 Hz
Weight	1100 g	1200 g	1100 g	1200 g
Torque: Motor Return spring	min. 4 Nm min. 3 Nm	min. 4 Nm min. 3 Nm	min. 4 Nm min. 3 Nm	min. 4 Nm min. 3 Nm
1000×800-1000	max. 95°	max. 95°	max. 95°	max. 95°
Ambient temperature normal operation	-30...55 °C	-30...55 °C	-30...55 °C	-30...55 °C
Protection class IEC/EN	III Safety extra low voltage	III Safety extra low voltage	III Safety extra low voltage	III Safety extra low voltage
Protection class auxiliary switch IEC/EN	II Protective insulated	III Safety extra low voltage	II Protective insulated	III Safety extra low voltage

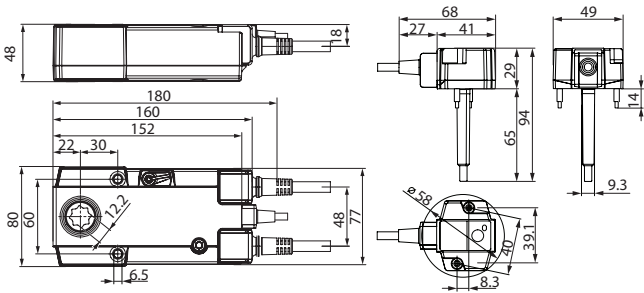
Electromechanical actuators

BFN and BFN-T actuators

BFN24 / BFN230



BFN24-T / BFN230-T



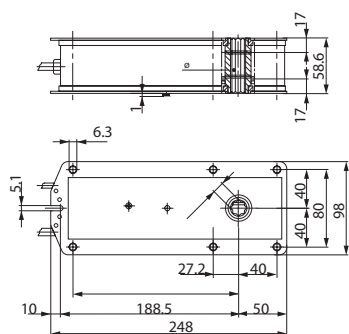
Technical specification	BFN24	BFN24-T	BFN230	BFN230-T
Electric current	AC/DC 24 V 50/60 Hz	AC/DC 24 V 50/60 Hz	AC 230 V 50/60 Hz	AC 230 V 50/60 Hz
Weight	1400 g	1500 g	1400 g	1500 g
Torque: Motor Return spring	min. 9 Nm min. 7 Nm	min. 9 Nm min. 7 Nm	min. 9 Nm min. 7 Nm	min. 9 Nm min. 7 Nm
1000×800-1000	max. 95°	max. 95°	max. 95°	max. 95°
Ambient temperature normal operation	-30...55 °C	-30...55 °C	-30...55 °C	-30...55 °C
Protection class IEC/EN	III Safety extra low voltage	III Safety extra low voltage	III Safety extra low voltage	III Safety extra low voltage
Protection class auxiliary switch IEC/EN	II Protective insulated	II Protective insulated	II Protective insulated	II Protective insulated

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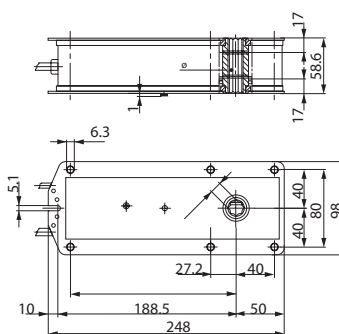
Electromechanical actuators

BF and BF-T actuators

BF24 / BF230



BF24-T / BF230-T



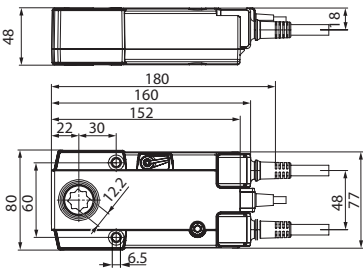
Technical specification	BF24	BF24-T	BF230	BF230-T
Electric current	AC/DC 24 V 50/60 Hz	AC/DC 24 V 50/60 Hz	AC 230 V 50/60 Hz	AC 230 V 50/60 Hz
Weight	2800 g	2800 g	3100 g	3100 g
Torque: Motor Return spring	min. 18 Nm min. 12 Nm	min. 18 Nm min. 12 Nm	min. 18 Nm min. 12 Nm	min. 18 Nm min. 12 Nm
1000x800-1000	max. 95°	max. 95°	max. 95°	max. 95°
Ambient temperature normal operation	-30...50 °C	-30...50 °C	-30...50 °C	-30...50 °C
Protection class IEC/EN	III Safety extra low voltage	III Safety extra low voltage	II Protective insulated	II Protective insulated

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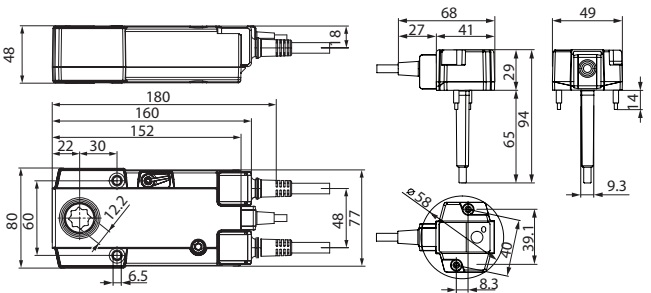
Electromechanical actuators

BFL-ST and BFL-T-ST actuators

BFL24 ST



BFL24-T-ST with connection plugs



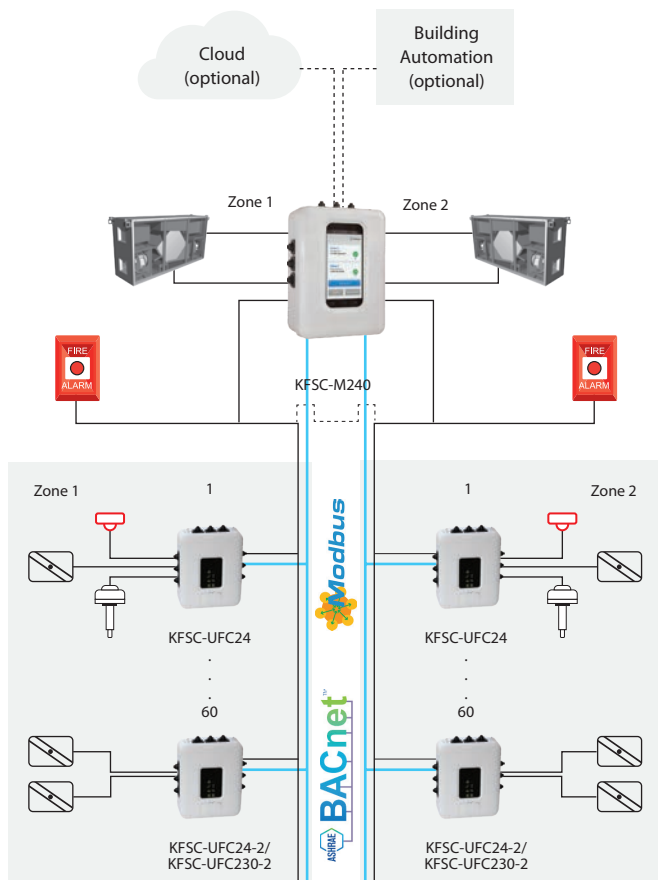
Technical specification	BFL24-ST	BFL24-T-ST
Electric current	AC/DC 24 V 50/60 Hz	AC 24 V 50/60 Hz
Weight	1100 g	1200 g
Torque: Motor Return spring	min. 4 Nm min. 3 Nm	min. 4 Nm min. 3 Nm
1000×800-1000	max. 95°	max. 95°
Ambient temperature normal operation	-30...55 °C	-30...55 °C
Protection class IEC/EN	III Safety extra low voltage	III Safety extra low voltage
Protection class auxiliary switch IEC/EN	II Protective insulated	II Protective insulated

Note. Connection schemes for monitoring and control systems or into bus networks can be found in the corresponding manufacturer technical documentation.

Control system

Fire and smoke dampers should be checked regularly. Doing this manual way is time consuming and requires a lot of human resources. The process can be fully automated with the **KFSC-M240** dedicated controller and **KFSC-UFC** modules. Using this system, the automation will regularly check the status of fire and smoke dampers and inform the user in case of a malfunction.

Fire/Smoke Extraction Damper Controls with Ring-Structure

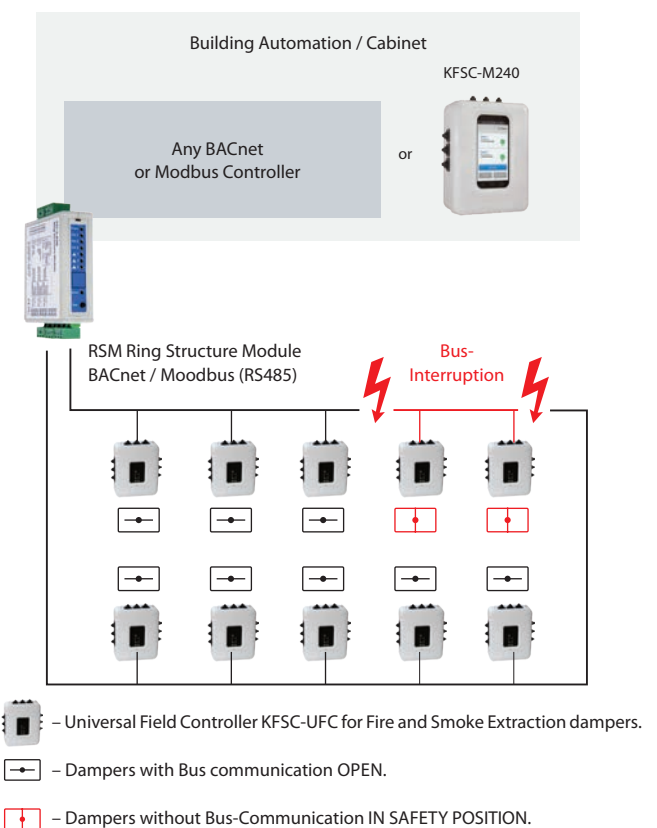


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Functionality:

- Standalone solution for two fire- or two smoke extraction zones or one fire and one smoke extraction zone.
- Up to max. 240 dampers can be controlled via the KFSC-UFC (KFSC-UFC24, KFSC-UFC24-2, KFSC-UFC230-2) devices and together with the KFSC-M240.
- Pre-programmed and tested functionality.
- Self-commissioning of the KFSC-M240 and the connected KFSC-UFC's – saves time and costs at commissioning.
- Automatic test runs, test reports available. Automatic sending by e-mail possible.
- Remote access via cloud as option available – simplification of the physical test at site as one of the advantages.
- Cable length RS-485: up to 1200 m, without repeater.

Most simple Ring Solution for standard RS-495 Bus Systems with 1 Cable



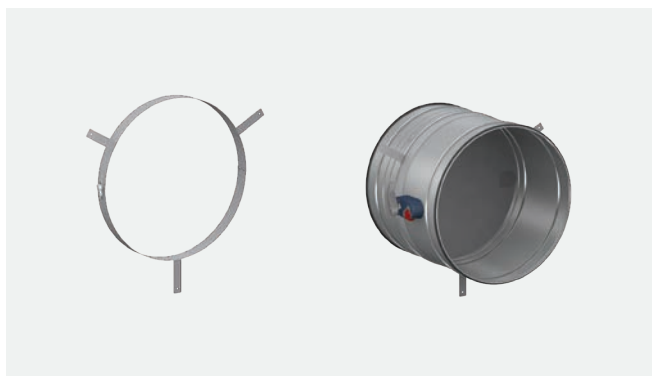
Benefits:

- ✓ Commissioning of the fire damper system including integration of the Fire Alarm Panel and the Ventilators could be completed in a very short time frame;
- ✓ Datapoint test is concluded in a very short time;
- ✓ Remarkable cost savings on the controls system (>50%) by using the bus system.

Accessories

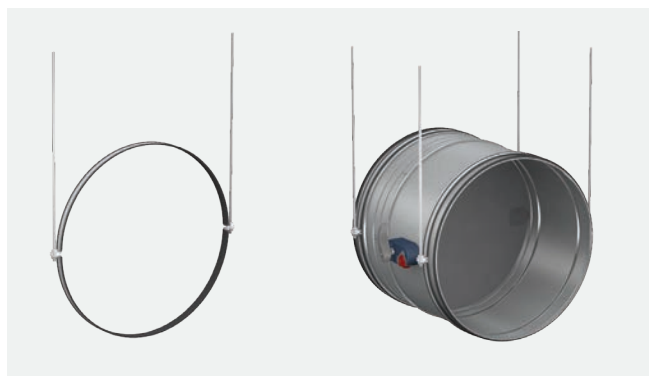
Wall mounting accessories

Simple installation holders, for the best alignment of the fire damper in cut-out opening.



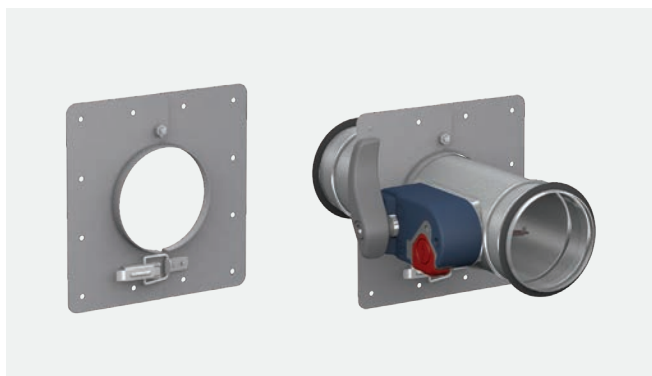
Brackets

This type of brackets is used for tight holding of fire dampers when wall mounting brackets are not allowed.



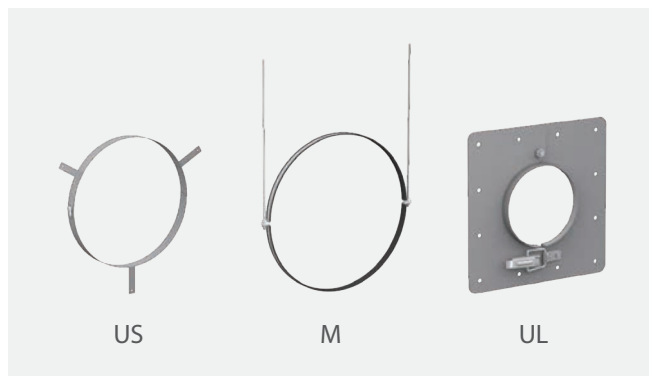
Ceiling slab mounting accessories

Installation holders for mounting in ceiling are very important due to best alignment in cut-out opening and fire-resistant insulation holding.



Ordering

Mounting accessories are ordered separately.



Ordering example:

US - 160
① ②

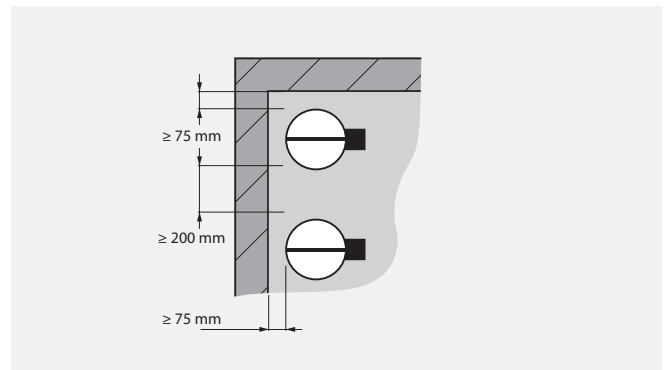
- ① **Mounting accessory:** US, UL, M
- ② **Dimensions:** diameter Ø100–560.

Installation tips

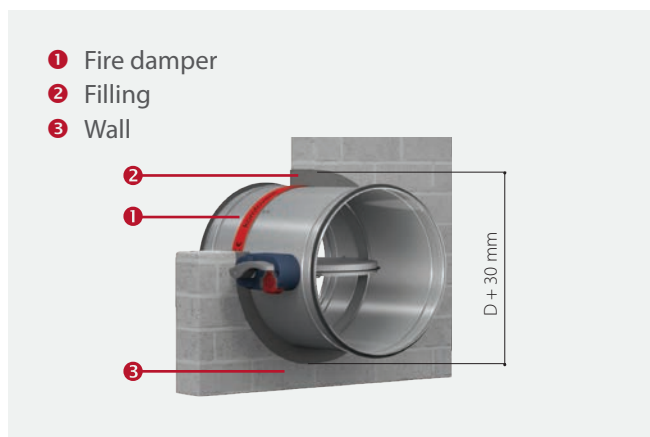
Circular fire damper mounting

Fire damper may be installed in rigid construction in horizontal or vertical position (concrete, aerated blocks, bricks). Minimum thickness of the wall – 115 mm, ceiling – 150 mm. Recommended cut-out hole dimensions is $D+30\text{ mm}$. The free space is filled with gypsum, concrete or any other mortar used in construction practice.

Fire dampers must be installed at least 75 mm from walls, ceiling or partitions and at least 200 mm from other dampers or ducts.



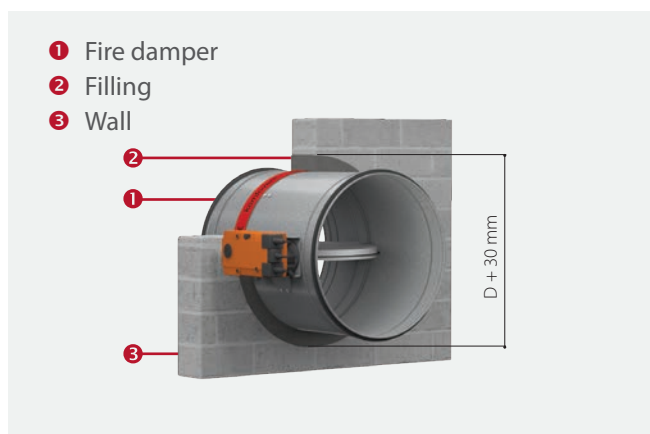
UVA 60 H and UVA 120 H mounting in a rigid wall



UVA 120 H mounting in a ceiling slab



UVA 60 M and UVA 120 M mounting in a rigid wall



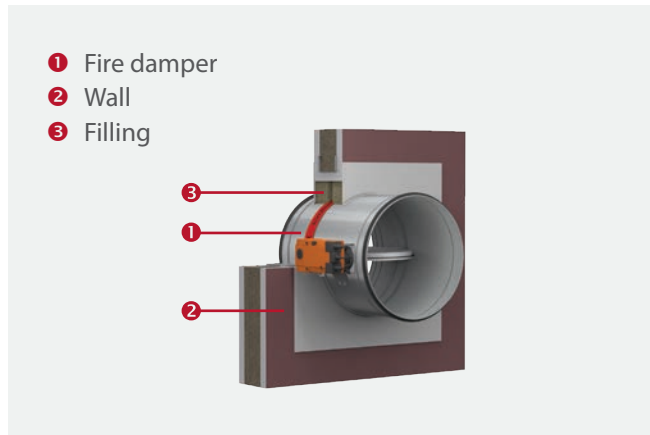
UVA 120 M mounting in a ceiling slab



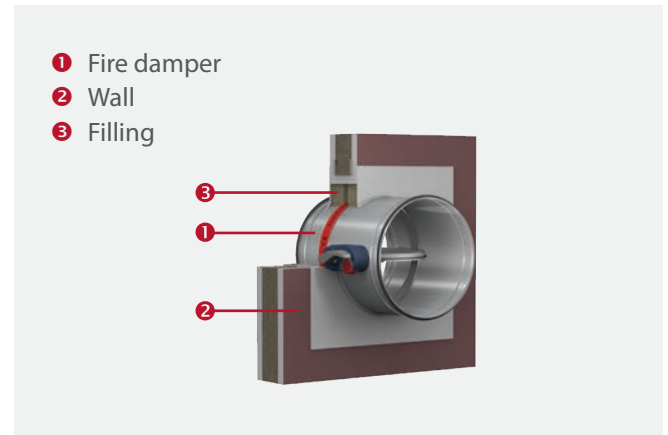
Installation tips

Circular fire damper mounting

UVA 60 M and UVA 120 M mounting in a wall with mineral wool insulation

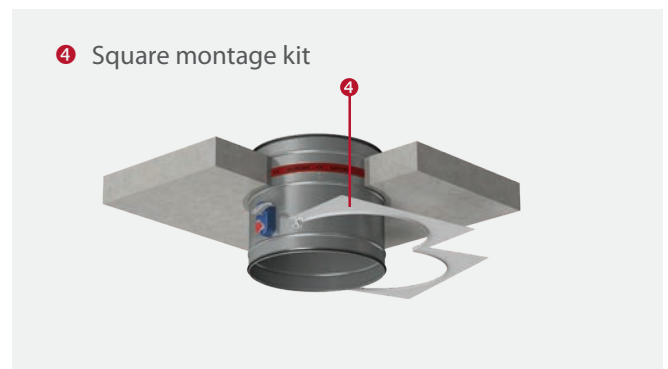


UVA 60 H and UVA 120 H mounting in a wall with mineral wool insulation



Installation steps:

- 1 Cut-out is made in the wall or ceiling with dimensions 30 mm larger than damper diameter.
- 2 In to the cut-out dampers are inserted in a way that installation mark is flush with surface of the wall/ceiling. Axis of the damper blade must be in horizontal position.
- 3 Damper is fixed to the wall using special brackets or ceiling using special montage kit.
- 4 Gap around dampers is sealed with mortar.
- 5 Fire ducts are connected and insulated (if needed) according Fire safety regulations.
- 6 Actuator power supply and limit switch cables are connected.



Installation sample into solid ceiling slabs using special square montage kit.

IMPORTANT!

- Installation of fire dampers and ducts must be handled strictly according to local Fire safety regulations and applicable legislation.
- Fire resistance of the ducts can be different, when used in separate building constructions.
- Duct system components must have its own holding brackets and must be mounted in a way; thus, its weight will not be transferred to the construction of the fire damper.
- Upon completion of installation of the fire damper, check free rotation of the blade and free access to the opening mechanism and fuse for preventive check or replacement.
- For more detailed information on mounting please see an instruction included with the product.

Installation tips

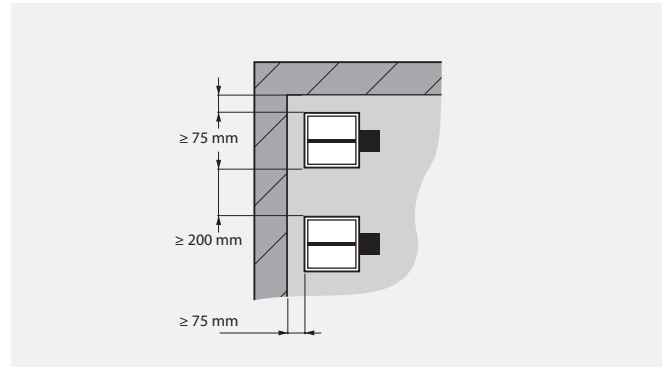
Rectangular fire damper mounting

Rectangular fire damper may be installed in rigid construction in horizontal or vertical position (concrete, aerated blocks, bricks).

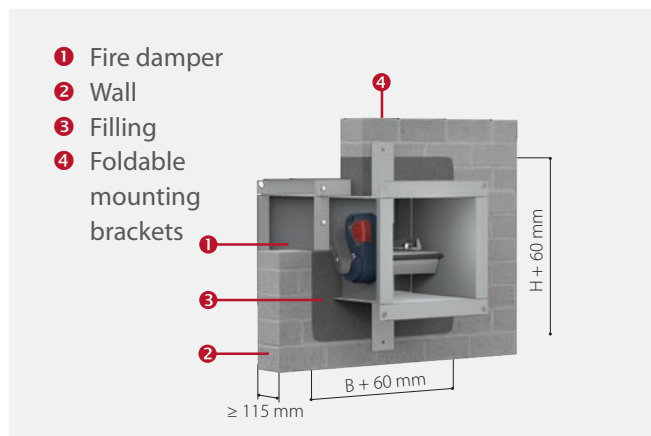
Minimum thickness of the wall – 115 mm, ceiling – 150 mm. Recommended cut-out hole dimensions $H+60 \times B+60$ mm.

The free space is filled with gypsum, concrete or any other mortar used in construction practice.

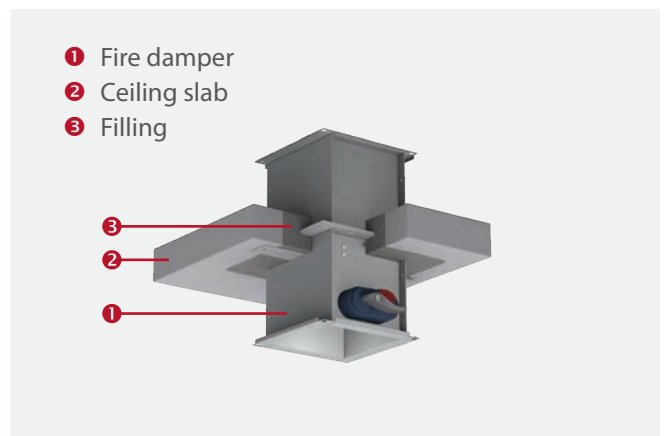
Fire dampers must be installed at least 75 mm from walls, ceiling or partitions and at least 200 mm from other dampers or ducts.



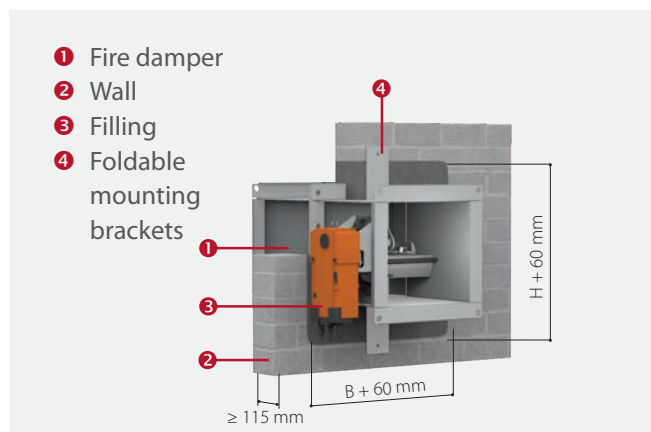
UVS 60 H and UVS 120 H mounting in a rigid wall



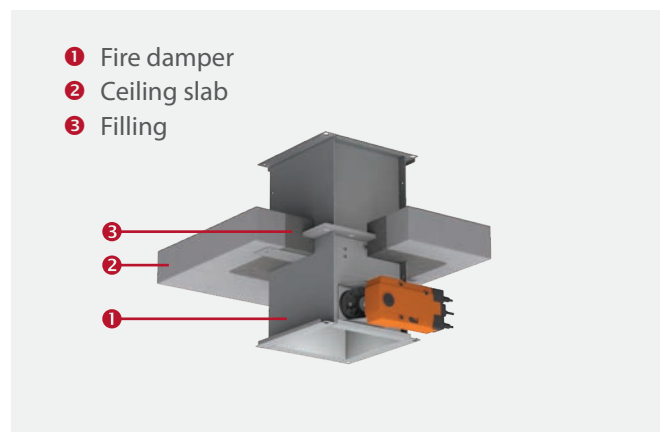
UVS 120 H mounting in a ceiling slab



UVS 60 M and UVS 120 M mounting in a rigid wall



UVS 120 M mounting in a ceiling slab



Installation tips

Rectangular fire damper mounting

Installation steps:

- ❶ Cut-out is made in the wall or ceiling 60 mm larger than damper dimensions
- ❷ Damper mounting brackets are unfolded and damper is inserted in to the cut-out in a way that brackets are touching the wall/ceiling. Axis of the damper blade must be in horizontal position.
- ❸ Damper mounting brackets are fixed to the wall/ceiling.
- ❹ Gap around dampers is sealed with mortar.
- ❺ Fire ducts are connected and insulated (if needed) according Fire safety regulations.
- ❻ Actuator power supply and limit switch cables are connected.

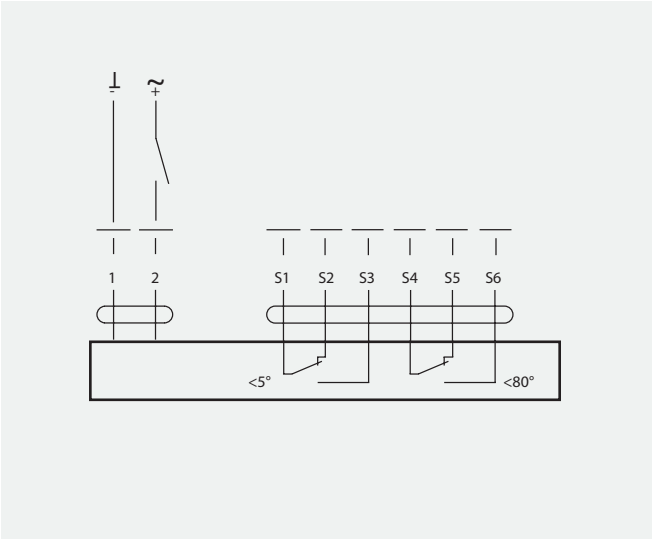
IMPORTANT!

- Installation of fire dampers and ducts must be handled strictly according to local Fire safety regulations and applicable legislation.
- Fire resistance of the ducts can be different, when used in separate building constructions.
- Duct system components must have its own holding brackets and must be mounted in a way, thus its weight will not be transferred to the construction of the fire damper.
- Upon completion of installation of the fire damper, check free rotation of the blade and free access to the opening mechanism and fuse for preventive check or replacement.
- For more detailed information on mounting please see an instruction included with the product.

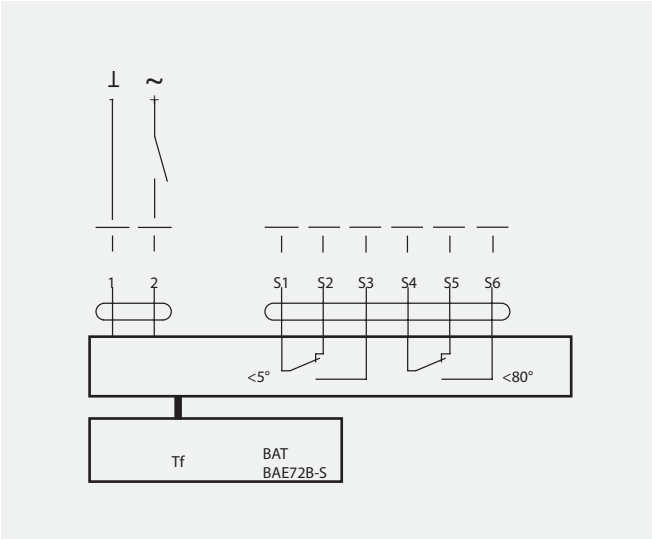
Installation tips

Electric actuators and wiring diagrams

Wiring diagram:
BFL24 / BFN24 / BF24
BFL230 / BFN230 / BF230



Wiring diagram:
BFL24-T / BFN24-T / BF24-T
BFL230-T / BFN230-T / BF230-T



Cable colors

Actuator type	Cable colors
BFL24/BFL24-T BFN24/BFN24-T	1 = black 2 = red S1 = violet S2 = red S3 = white S4 = orange S5 = pink S6 = grey TF (thermal fuse) – BAT
BF24/BF24-T	1 = black 2 = white S1 = white S2 = white S3 = white S4 = white S5 = white S6 = white TF (thermal fuse) – BAE72B-S
BFL230/BFL230-T BFN230/BFN230-T	1 = blue 2 = brown S1 = violet S2 = red S3 = white S4 = orange S5 = pink S6 = grey TF (thermal fuse) – BAT
BF230/BF230-T	1 = blue 2 = brown S1 = white S2 = white S3 = white S4 = white S5 = white S6 = white TF (thermal fuse) – BAE72B-S

Maintenance and inspection

UVA-M

Need to know

All fire dampers within the system may be closed at the same time. Operation of the actuator can regularly be controlled from a centralized control point. Constant control of the fire damper blade position (open or closed) ensures extremely reliable fire protection. In addition, by using actuators with temperature sensors, it is possible to close the dampers when the temperature in the duct reaches 72 °C.

IMPORTANT!

After the fire damper has been mounted, it must be checked whether the damper blade rotates freely and there is good access to the actuator and temperature sensor for their preventive inspection or replacement.

UVA-H

Need to know

These dampers offer simple fuse replacement, and are suitable for use where there is no possibility of installing a centralized control system.

IMPORTANT!

After the fire damper has been mounted, it must be checked whether the damper blade rotates freely and there is good access to the fuse for its preventive inspection or replacement. The release mechanism must be accessible and can be tested from the outside. For testing fire damper, it is necessary to press red button and check the handle by rotation into CLOSED state. Fuses are for one-time use, and have to be replaced after hot actuation (in case of melting the fuse). Inspection of fire damper could be accomplished by using inspection camera through button and fuse element opening.

Inspection

According to EN15650:2010 standard fire damper must be checked twice a year according following table:

Description	Notes
☐ Damper Reference	
☐ Date of inspection	
☐ Clean surfaces of the damper	
☐ Check tightness of damper connections with ducts and gaskets	
☐ Check if the damper blade closes and opens easily	
☐ Check operation of the closing spring	
☐ Remove and inspect melting fuse	
☐ Check operation of limit switches (if connected)	
☐ Inspect cable installation (if connected)	
☐ After works make sure that damper is left in its normal working position	
☐ Date	



BEFORE CARRYING OUT THE TEST, IT IS NECESSARY TO TURN OFF THE VENTILATION SYSTEM (OR REDIRECT THE AIR FLOW THROUGH ANOTHER DUCT), OTHERWISE DAMPER OR DUCT DAMAGE MAY OCCUR.

Conformity with the Standards

Standards and guidelines for KOMFOVENT fire dampers are compliant:

- ✓ KOMFOVENT fire dampers conform to the harmonized EN 15650:2010 standard and meet all the requirements of its Annex ZA. All dampers are denoted with the CE mark. The fire resistance test determines the behavior of a fire damper when it is subject to high temperature and pressure during a fire. The fire dampers have been tested for fire in accordance with the EN 1366-2:2015 and are classified according to the EN 13501-3:2010 standard.
- ✓ All materials used during manufacturing of KOMFOVENT dampers are certified and have its Declarations of Conformity.
- ✓ EI 60 S rated fire dampers correspond to the 60 minutes fire resistance class, while EI 120 S rated fire dampers correspond to the 120 minutes fire resistance class.
- ✓ EN 15650:2010 Ventilation for buildings – Fire dampers.
- ✓ EN 1366-2:2015 Fire resistance tests for service installations – Fire dampers.
- ✓ EN 13501-3:2010 Fire classification of construction products and building elements.
- ✓ EN 1751:2014 Ventilation for buildings. Air terminal devices. Aerodynamic testing of damper and valves.
- ✓ EN 12237: 2003 Ventilation for buildings – Ductwork – Strength and leakage of circular sheet metal ducts.
- ✓ EN 1507: 2006 Ventilation for buildings – Sheet metal air ducts with rectangular section – Requirements for strength and leakage.





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