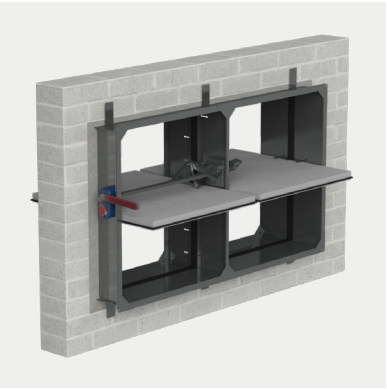
komfovent



RECTANGULAR FIRE DAMPER UVSL

Installation manual

EN

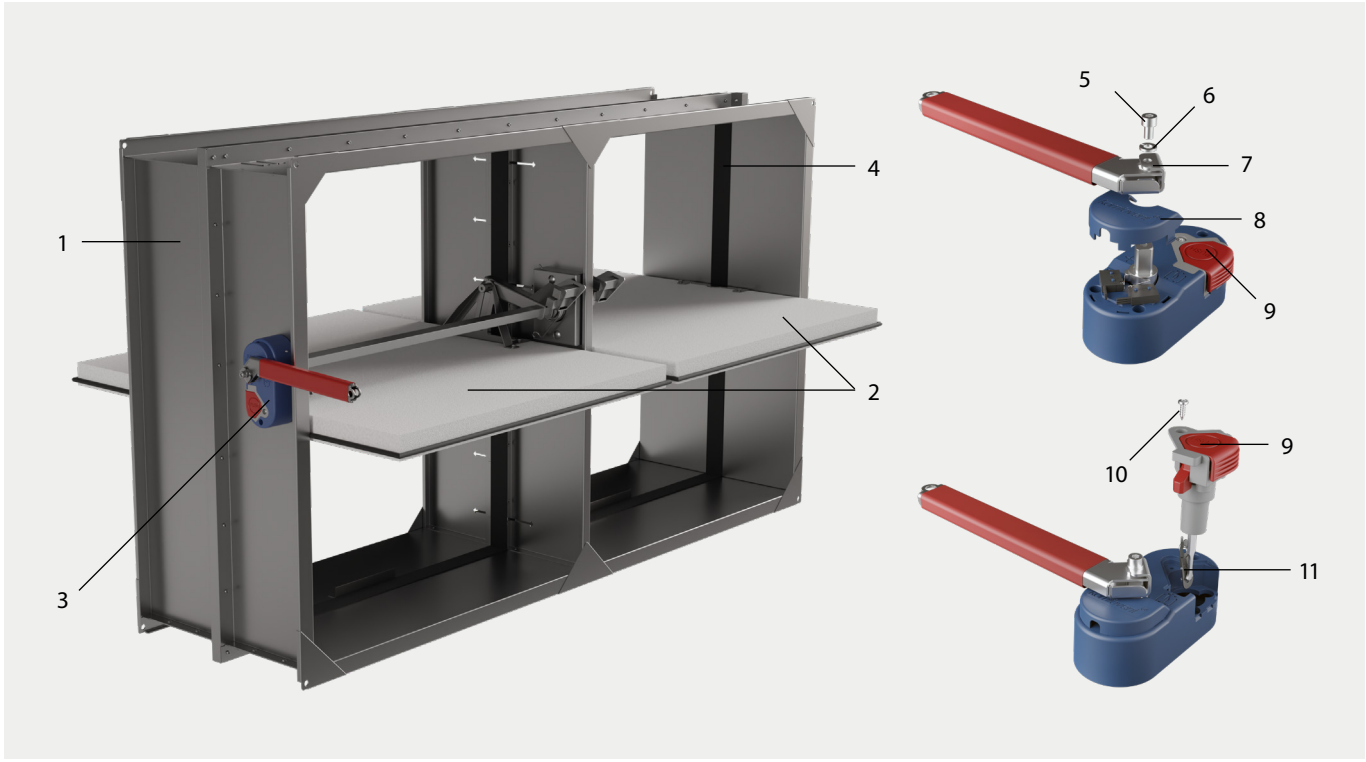
CONTENT

1. DESIGN AND DIMENSIONS 3
2. TECHNICAL DATA 6
2.1. Weight of the dampers 6
2.2. Cross-section area of the dampers 7
2.3. Actuators 7
2.4. Wiring schemes for actuators 8
3. INSTALLATION 10
3.1. Installation in solid wall with mortar EIS 120 10
3.2. Installation in solid ceiling with mortar EIS 120 11
4. SAFETY REQUIREMENTS 13
5. INSTALLATION SE QUENCE 14
5.1. End position switches installation instructions for fire dampers UVSL-H 18
6. PERIODICAL INSPECTIONS 19

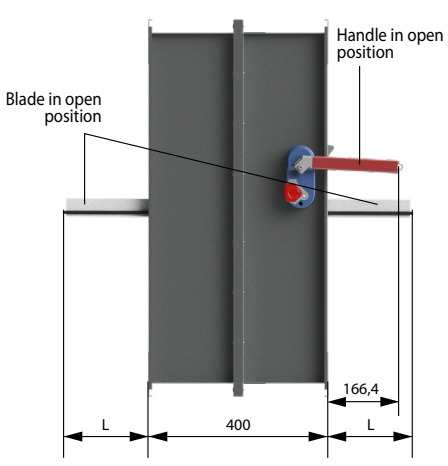
1. DESIGN AND DIMENSIONS

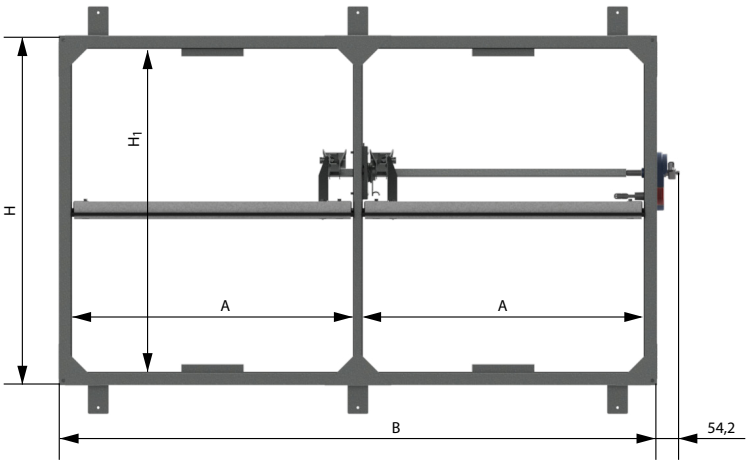
The rectangular fire dampers UVSL are an emergency application type dampers having two synchronously moving blades. UVSL-H are equipped with manual mechanism and fuse link and are available in size range width (B) x height (H) from 1050 x 350 mm to 1600 x 1000 mm; UVSL-M dampers are equipped with electric actuator and available in sized from 1050 x 200 mm to 1600 x 1000 mm.

MAIN PARTS AND DIMENSIONS OF UVSL-H FIRE DAMPER:



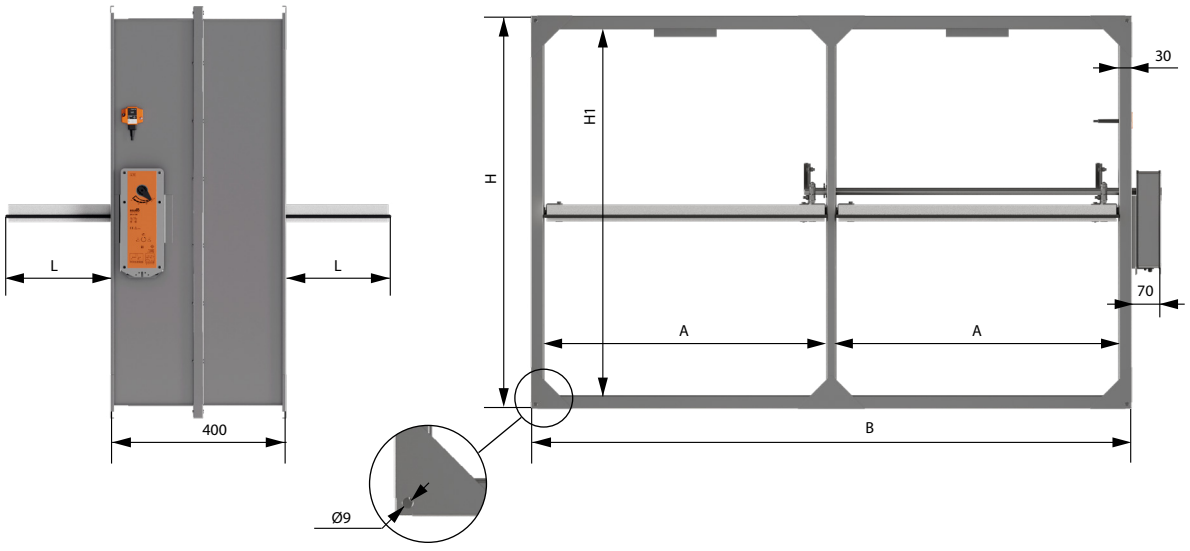
1 – casing, 2 – blade, 3 – opening device with spring, 4 – intumescent seal, 5 – handle attaching screw, 6 – spring washer, 7 – handle of the opening device, 8 – microswitch cap, 9 – PUSH button mechanism (replacing part), 10 – screw, 11 – Fuse element 72˚





MAIN PARTS AND DIMENSIONS OF UVSL-M FIRE DAMPER:

1 – casing, 2 – blade, 3 – spring return actuator BFN24-T/BFN24-T-ST/BFN230-T or BF24-T/BF24-T-ST/BF230-T,
4 – intumescent seal, 5 – thermal bridge, 6 – blade rotation axle; 7 – connecting flange



All relevant dimensions for UVSL-H and UVSL-M dampers are given in the tables below:

H_{nom}, mm	H, mm	H1, mm	L, mm
200	240	180	0
250	290	230	0
300	340	280	0
350	390	330	0
400	440	380	0
450	490	430	15
500	540	480	40
550	590	530	65
600	640	580	90
650	690	630	115
700	740	680	140
750	790	730	165
800	840	780	190
850	890	830	215
900	940	880	240
950	990	930	265
1000	1040	980	290

B_{nom}, mm	A, mm	B, mm
1050	505	1090
1100	530	1140
1150	555	1190
1250	580	1240
1300	630	1340
1350	655	1390
1400	680	1440
1450	705	1490
1500	730	1540
1550	755	1590
1600	780	1640

2. TECHNICAL DATA

2.1. WEIGHT OF THE DAMPERS

Weights of the UVSL-H dampers:

	Weight, kg											
H \ B	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600
350	27,8	28,7	29,5	32,7	33,6	34,5	35,4	36,2	37,1	38	38,9	39,8
400	31,9	32,9	33,8	34,8	35,7	36,8	37,7	38,7	39,6	40,6	41,5	42,5
450	33,9	35	35,9	37	38	39,1	40,1	41,1	42,1	43,2	44,1	45,2
500	35,8	37	38	39,2	40,2	41,3	42,4	43,5	44,6	45,7	46,7	47,9
550	37,8	39	40,1	41,3	42,4	43,6	44,7	45,8	47	51,4	52,6	53,7
600	39,7	40,9	42,1	43,4	44,5	45,8	50,2	51,5	52,6	52,3	53,5	54,7
650	41,7	42,9	44,2	45,6	50,5	51,8	50,9	52,3	53,5	54,8	56,1	57,3
700	43,6	44,9	49,5	50,9	50,6	52	53,2	54,7	55,9	57,3	58,6	60
750	45,6	48,5	49,9	51,3	52,7	54,1	55,5	57	58,4	59,8	61,2	62,6
800	50,6	50,5	51,9	53,4	54,9	56,4	57,8	59,4	60,8	62,3	63,7	65,2
850	50,7	52,3	53,9	55,4	57	58,4	60,1	61,8	63,3	64,8	66,3	67,9
900	52,4	54,1	55,7	57,3	59	60,4	62,4	64,2	65,7	67,3	68,8	70,5
950	54,2	55,9	57,6	59,4	61,1	62,5	64,7	66,5	68,2	69,8	71,4	73,2
1000	55,9	57,8	59,6	61,4	63,2	64,6	67	68,9	70,6	72,3	73,9	75,8

Weights of the UVSL-M dampers:

	Weight, kg											
H \ B	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600
350	28,5	29,4	30,2	33,4	34,3	35,2	36,1	36,9	37,8	38,7	39,6	40,5
400	32,6	33,6	34,5	35,5	36,4	37,5	38,4	39,4	40,3	41,3	42,2	43,2
450	34,6	35,7	36,6	37,7	38,7	39,8	40,8	41,8	42,8	43,9	44,8	45,9
500	36,5	37,7	38,7	39,9	40,9	42,0	43,1	44,2	45,3	46,4	47,4	48,6
550	38,5	39,7	40,8	42,0	43,1	44,3	45,4	46,5	47,7	52,1	53,3	54,4
600	40,4	41,6	42,8	44,1	45,2	46,5	50,9	52,2	53,3	54,6	55,8	57,0
650	42,4	43,6	44,9	46,3	51,2	52,5	53,2	54,6	55,8	57,1	58,4	59,6
700	44,3	45,6	50,2	51,6	52,9	54,3	55,5	57,0	58,2	59,6	60,9	62,3
750	46,3	50,8	52,2	53,6	55,0	56,4	57,8	59,3	60,7	62,1	63,5	64,9
800	51,3	52,8	54,2	55,7	57,2	58,7	60,1	61,7	63,1	64,6	66,0	67,5
850	53,0	54,6	56,2	57,7	59,3	60,7	62,4	64,1	65,6	67,1	68,6	70,2
900	54,7	56,4	58,0	59,6	61,3	62,7	64,7	66,5	68,0	69,6	71,1	72,8
950	56,5	58,2	59,9	61,7	63,4	64,8	67,0	68,8	70,5	72,1	73,7	75,5
1000	58,2	60,1	61,9	63,7	65,5	66,9	69,3	71,2	72,9	74,6	76,2	78,1

2.2. CROSS-SECTION AREA OF THE DAMPERS

Effective cross-section area for both UVSL-H and UVSL-M dampers:

Cross – section area A, m²

H \ B	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600
200	0,14	0,15	0,15	0,16	0,17	0,18	0,18	0,19	0,20	0,20	0,21	0,22
250	0,19	0,20	0,21	0,22	0,23	0,24	0,25	0,26	0,27	0,28	0,29	0,30
300	0,24	0,25	0,27	0,28	0,29	0,30	0,31	0,33	0,34	0,35	0,36	0,37
350	0,29	0,31	0,32	0,34	0,35	0,36	0,38	0,39	0,41	0,42	0,44	0,45
400	0,34	0,36	0,38	0,39	0,41	0,43	0,44	0,46	0,48	0,50	0,51	0,53
450	0,39	0,41	0,43	0,45	0,47	0,49	0,51	0,53	0,55	0,57	0,59	0,61
500	0,44	0,47	0,49	0,51	0,53	0,55	0,58	0,60	0,62	0,64	0,66	0,69
550	0,49	0,52	0,54	0,57	0,59	0,62	0,64	0,67	0,69	0,71	0,74	0,76
600	0,54	0,57	0,60	0,63	0,65	0,68	0,71	0,73	0,76	0,79	0,81	0,84
650	0,60	0,62	0,65	0,68	0,71	0,74	0,77	0,80	0,83	0,86	0,89	0,92
700	0,65	0,68	0,71	0,74	0,77	0,81	0,84	0,87	0,90	0,93	0,97	1,00
750	0,70	0,73	0,77	0,80	0,83	0,87	0,90	0,94	0,97	1,01	1,04	1,08
800	0,75	0,78	0,82	0,86	0,89	0,93	0,97	1,01	1,04	1,08	1,12	1,15
850	0,80	0,84	0,88	0,92	0,96	0,99	1,03	1,07	1,11	1,15	1,19	1,23
900	0,85	0,89	0,93	0,97	1,02	1,06	1,10	1,14	1,18	1,23	1,27	1,31
950	0,90	0,94	0,99	1,03	1,08	1,12	1,17	1,21	1,25	1,30	1,34	1,39
1000	0,95	1,00	1,04	1,09	1,14	1,18	1,23	1,28	1,32	1,37	1,42	1,47

2.3. ACTUATORS

Usage of electric actuators for UVSL-M dampers depending on the size of the damper:

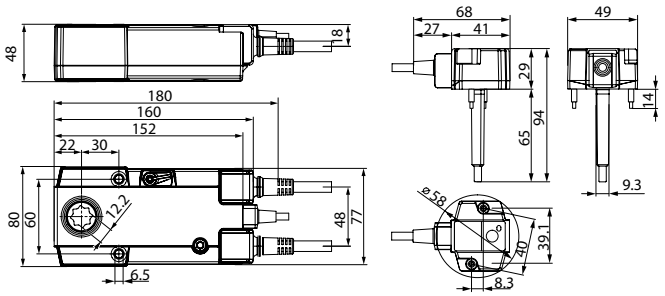
H \ B	1050	1100	1150	1200	1250	1300	1350	1400	1450	1500	1550	1600
200												
250												
300												
350												
400												
450												
500												
550												
600												
650												
700												
750												
800												
850												
900												
950												
1000												

BFN24-T/BFN24-T-ST/BFN230-T
9 / 7 Nm

BF24-T/BF24-T-ST/BF230-T
18 / 12 Nm

2.4. WIRING SCHEMES FOR ACTUATORS

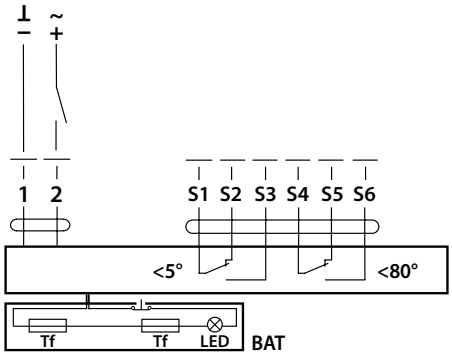
BFN24-T / BFN230-T



Technical specification	BFN24-T	BFN230-T
Electric current	AC/DC 24 V 50/60 Hz	AC 230 V 50/60 Hz
Weight	1500 g	1500 g
Torque: Motor Return spring	 min. 9 Nm min. 7 Nm	 min. 9 Nm min. 7 Nm
Angle of rotation	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

Wiring diagrams

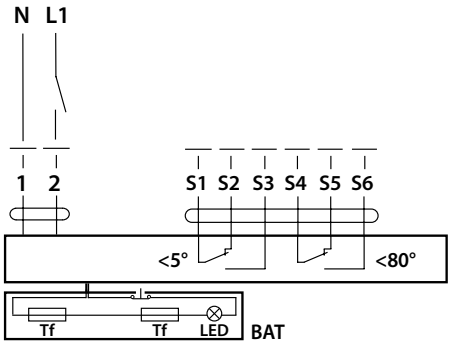
AC/DC 24 V, open/close



Cable colors:

1 = black
2 = red
S1 = violet
S2 = red
S3 = white
S4 = orange
S5 = pink
S6 = grey
Tf: Thermal fuse

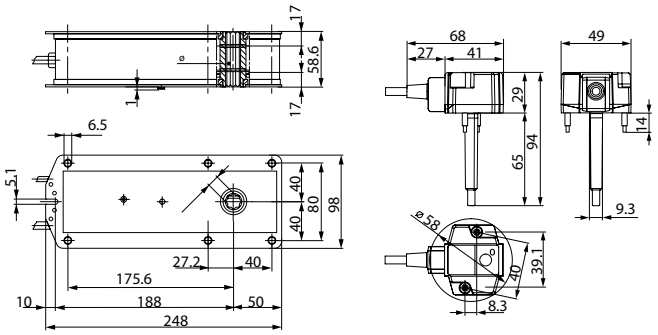
AC 230 V, open/close



Cable colors:

1 = blue
2 = brown
S1 = violet
S2 = red
S3 = white
S4 = orange
S5 = pink
S6 = grey
Tf: Thermal fuse

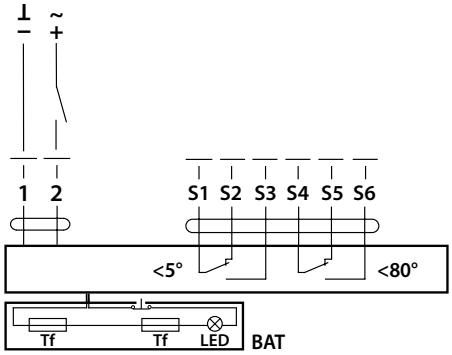
BF24-T / BF230-T



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

Wiring diagrams

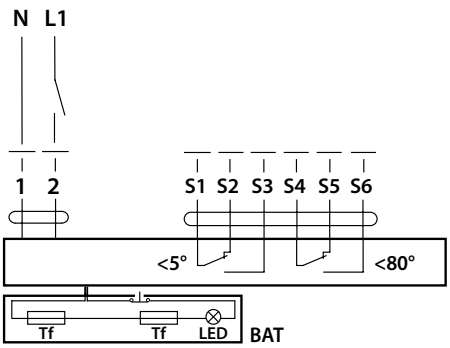
AC/DC 24 V, open/close



Cable colors:

1 = black
2 = white
S1 = violet
S2 = red
S3 = white
S4 = orange
S5 = pink
S6 = grey
Tf: Thermal fuse

AC 230 V, open/close

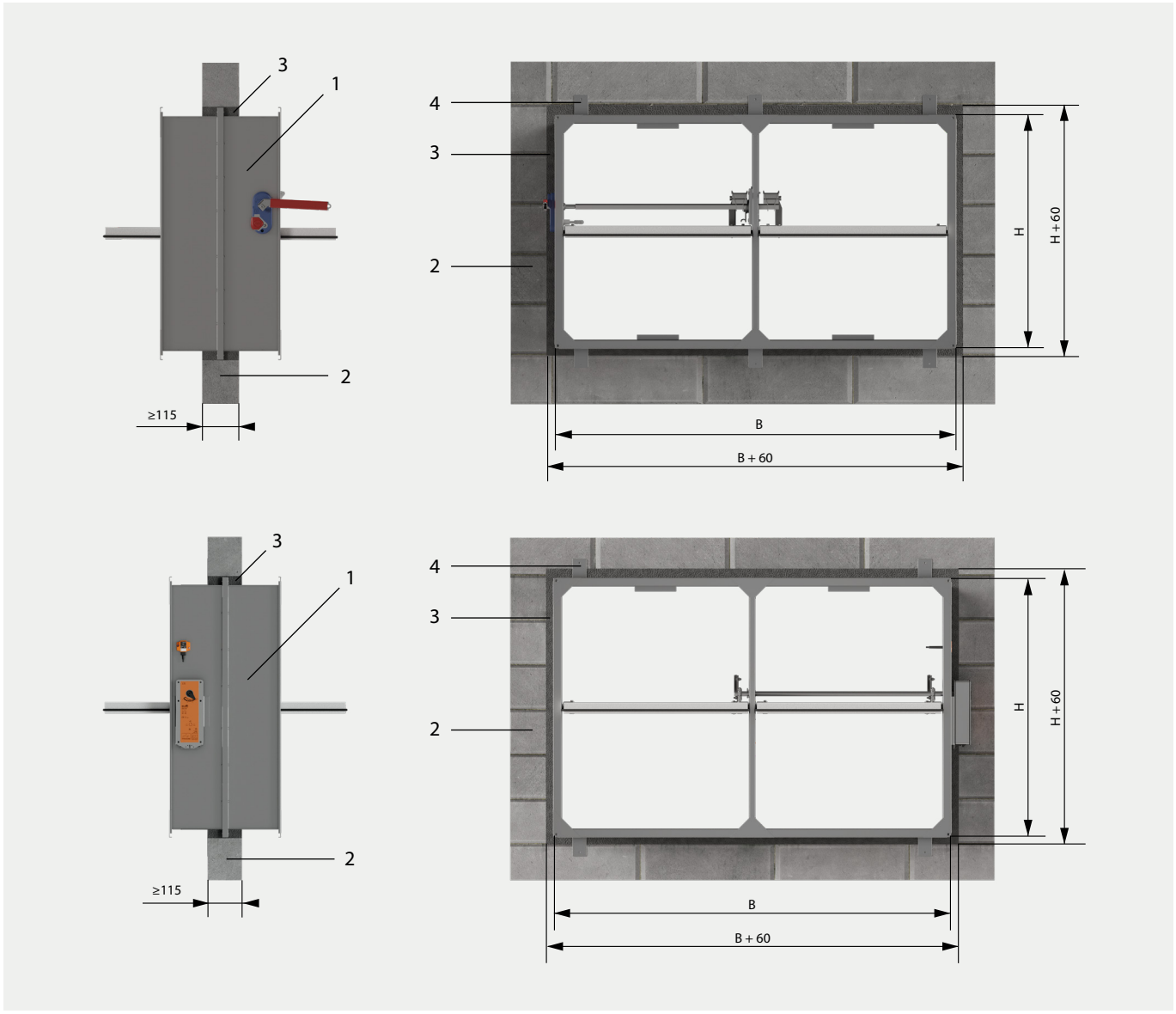


Cable colors:

1 = blue
2 = brown
S1 = violet
S2 = red
S3 = white
S4 = orange
S5 = pink
S6 = grey
Tf: Thermal fuse

3. INSTALLATION

3.1. INSTALLATION IN SOLID WALL WITH MORTAR EIS 120



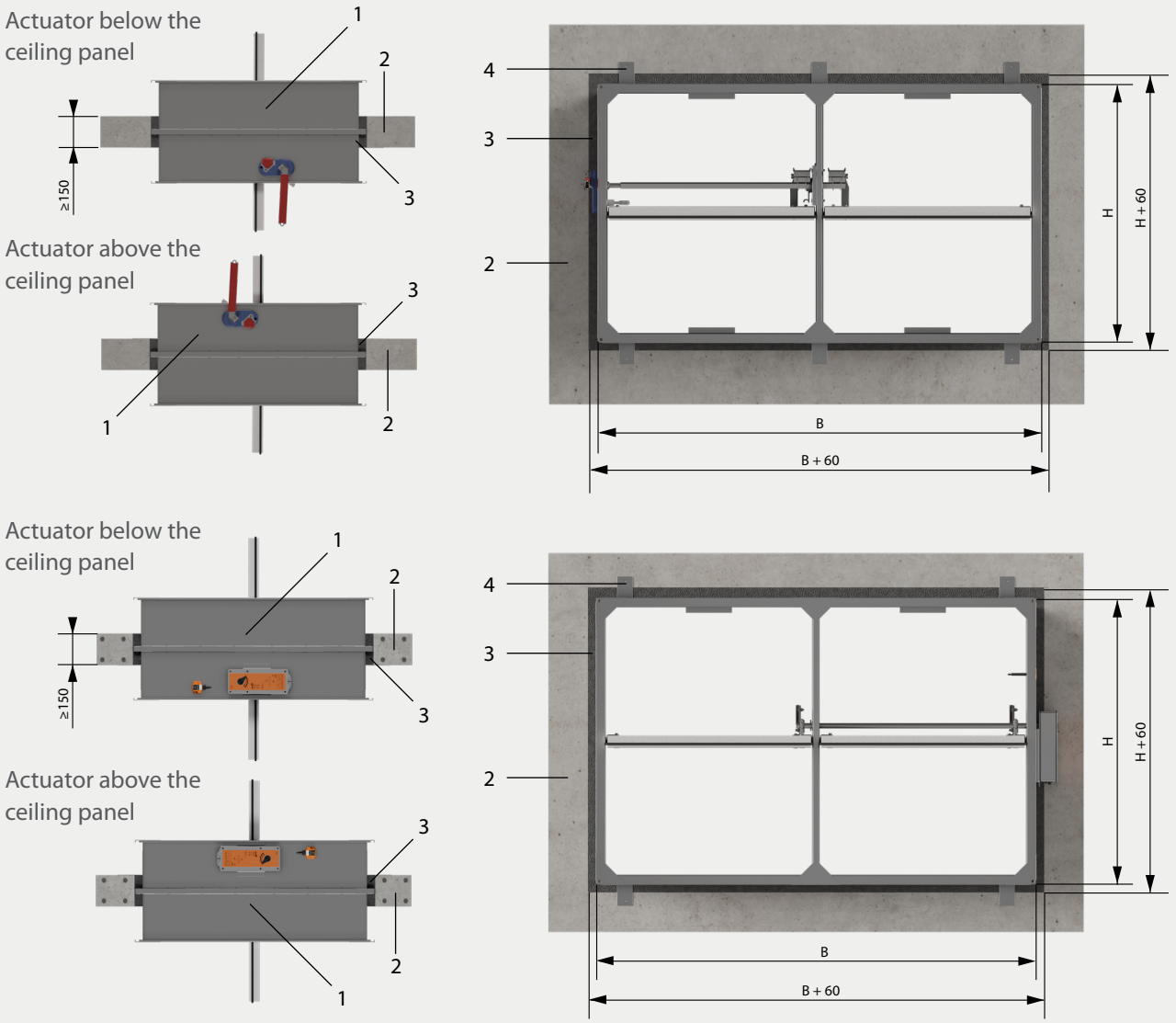
1 – fire damper UVSL-H / UVSL-M, 2 – solid wall in min. thickness 115 mm, 3 – plaster or mortar filling, 4 – mounting plate

INSTALLATION PROCESS:

1. Prepare rectangular installation opening B_{nom} + 60 mm x H_{nom} + 60 mm.
2. Use a mounting plates to secure the damper in the installation opening.
3. Fill the gap between wall and casing of the damper with plaster or mortar.
4. Let the plaster or mortar dry completely before mounting the connecting ductwork.

Small gap size deviations are allowed: the mortar filled gap can be increased by a factor of 4 but is limited to a maximum of 150 mm. Mortar gap decrease is not allowed. Mortar used for penetration seal should comply with EN998-2 up to Class M20 (nominal mix is 1:1.5:3 or one part of cement / 1.5 parts of fine aggregate (sand) / three parts of course aggregate).

3.2. INSTALLATION IN SOLID CEILING WITH MORTAR EIS 120

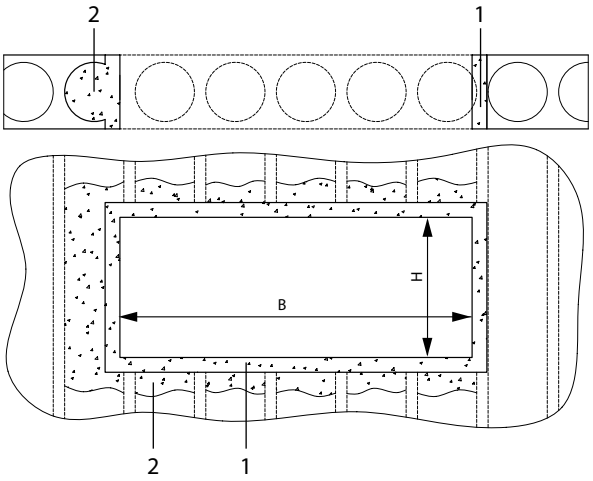


1 – fire damper UVSL-H / UVSL-M, 2 – solid ceiling (monolith or hollow concrete, reinforced concrete min. 150 mm thick panels, min. density 2200 kg/m^3), 3 – plaster or mortar filling, 4 – mounting plate

INSTALLATION PROCESS:

1. Prepare rectangular installation opening B_{nom} + 60 mm x H_{nom} + 60 mm.
2. Use a mounting plates to secure the damper in the installation opening.
3. Fill the gap between wall and casing of the damper with plaster or mortar.
4. Let the plaster or mortar dry completely before mounting the connecting ductwork.

The installation opening in monolithic reinforced or hollowed reinforced ceilings is rectangular. For hollowed types of ceilings hollowness is to be closed up with the same type of mortar:



1 – gap mortar filling, 2 – hollow mortar filling

4. SAFETY REQUIREMENTS

Protective gloves must be worn

Protective gloves protect hands against abrasion, oily environment, sharp metal parts and contact with hot surfaces.

Protective industrial helmet must be worn

Industrial helmets protect the head against impact from objects falling from above, by resisting and deflecting blows to the head.

Protective boots must be worn

Protective boots protect the foot from falling objects or compression and prevent slipping on a slippery floor.

Incorrect use might cause dangerous situations

Cables must not be removed from the device.

The two switches integrated in the actuator are to be operated either on power supply voltage or at safety extra-low voltage. The combination of power supply and voltage/safety extra-low voltage is not permitted. The device contains electrical and electronic components and must not be disposed of as household refuse. All locally valid regulations and requirements must be observed.

The local regulations for health and safety at work and general safety regulations to be applied.

Personal protective equipment must be worn for such types of work: fire damper electrical installation, fire damper mechanical connection to the air duct system (ductwork) and any type of service or maintenance works.

It is important to correctly use the fire damper in prescribed way only:

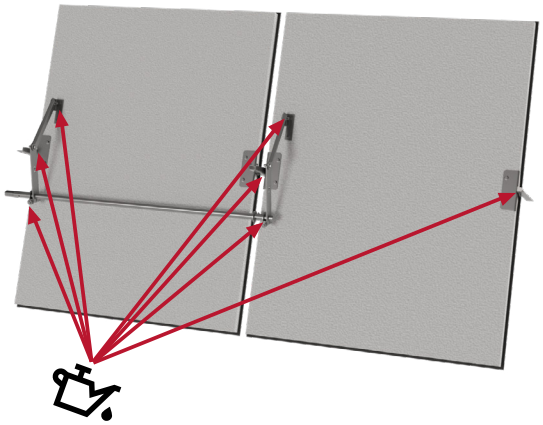
- Fire damper is permitted to use in exhaust or supply air systems.
- Not allowed to operate the fire damper if it do not comply with manufacturer's installation requirements specified in this instruction.
- Any changes or modifications of the fire damper are strictly prohibited, except for using manufacturer's provided replacement parts.
- Qualified staff only are allowed to replace parts or service the fire damper.

5. INSTALLATION SE QUENCE

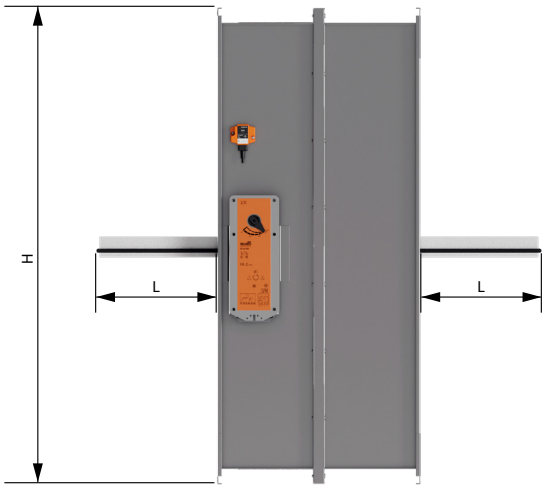
Before starting installation process any fire damper shall be inspected for damages by responsible person!

The installation process must include the following steps:

1. Check if the blades are closing and opening without additional resistance by rotating a hand crank several times. If sticking occurs, lubricate rotation and sliding points as shown below using a suitable amount of grease:



2. Please consider that fire damper has exposition of the blades into the duct within a certain distance in either direction:

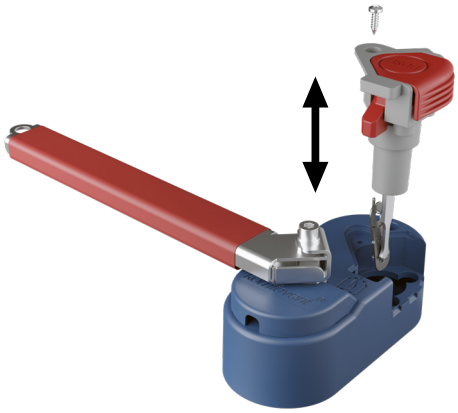


H, mm	L, mm
450	15
500	40
550	65
600	80
650	115
700	140
750	165
800	190
850	215
900	240
950	265
1000	290

3. Close the blade of a fire damper. **If a fire damper has been installed with an open blade, this may cause incomplete closing of the blade or even damage!** Blade position can be easily controlled also after installation by referring to marks located on the casing of locking mechanism:

Blade open

Blade closed



- **The fuse element is single-use only and should be replaced after activation.**
- **The fuse element can be easily accessible by screwing out PUSH button screw and pulling out the thermal release mechanism.**
- **In case the fuse element is melted it can be simply replaced with a new one.**

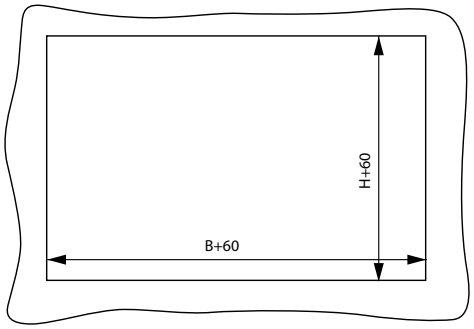
4. Blade position can be controlled by referring to marks located on the actuator's casing: 0˚ is equivalent to Closed position, 90˚ is equivalent to Open position:

a – Without power supply, the actuating mechanism can be operated manually by compressing the spring using included hand crank and fixing it in required position. It can be unlocked manually or automatically by applying the supply voltage.

b – Striker to lock the position of the blade.

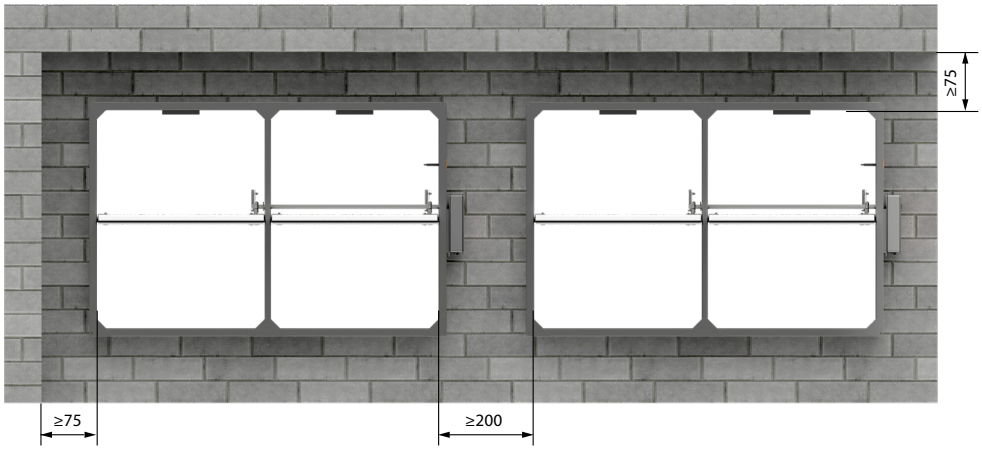
Cover the actuating mechanism (if delivered uncovered) with plastic film or another material to protect it against clogging with construction dust and materials.

5. Prepare installation opening in the solid wall or in the ceiling panel in accordance with the prescriptions:

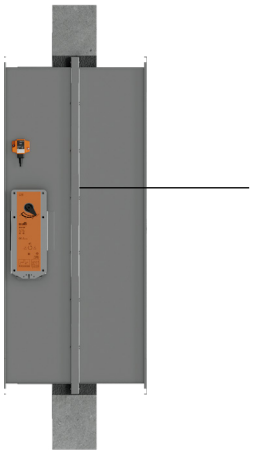


It is highly recommended to install the fire dampers in a way that completely prevents excess load on the dampers and transfer any load from ducts or supporting constructions!

6. The distance between multiple fire damper casings installed close to each other shall be at least 200 mm, as well as damper must not be installed closer than 75 mm to the wall, ceiling or other partitions, but it is recommended to leave the access space to main mechanism at least 300 mm.



Note: for installation of a damper into a wall axle of the blade should be positioned horizontally only! Blade of a damper always has to be placed INSIDE the supporting construction. Main mechanism can be used as a guide to find right damper's position:



It is extremely important that the blades are positioned into the supporting construction, if possible closer to its center.

Thermal bridge of the damper can be used as a guide to identify the position of the blade.

It is important to select only appropriate fastening for fire damper supporting based on its weight (refer to section 2.1).

Please be advised, that after installation of the damper periodical inspections will be held in accordance with chapter 6, it is necessary to ensure access to the main mechanism of a fire damper.

7. Fill in the gap between the casing and supporting construction with prescribed type of the filler and let the filler dry out completely.

8. Visually check that fire damper is securely installed into the supporting construction, check if the fuse element and levers system are undamaged and check if the blades are closing and opening properly several times. The blades must be fully closed and no seizing should be observed.

9. When fire damper is fully installed and verified, make sure it is left in its normal working position with blade OPEN.

10. Please consider that all EU working safety and Fire safety standards must be observed during the installation process.

SELF-TEST IS REQUIRED AFTER THE COMPLETION OF THE FIRE DAMPER INSTALLATION!

If any of the following issues observed after the fire damper installation, it is strictly prohibited to accept it into operation:

- Blade of the fire damper is blocked in open position;
- Casing of the fire damper had been damaged or skewed during installation process;
- The fire damper is fitted without observing the requirements of this instruction;
- Fasteners used during installation process block closing of the fire damper blade;
- Gaps between casing of the fire damper and the supporting construction remain unfilled;
- The damper is installed remotely from the wall or ceiling;
- Construction waste or dust should not be left on the surfaces of the damper;
- Actuator is disconnected or mounted loose on shaft;
- Wires run through the fire damper;
- Inspection hatch of the fire damper is inaccessible.

5.1. END POSITION SWITCHES INSTALLATION INSTRUCTIONS FOR FIRE DAMPERS UVSL-H

If fire damper is additionally assembled by one or two signaling devices (microswitches) and switch cam, simple installation of the parts is required:

— Switch cam – 1 pc.

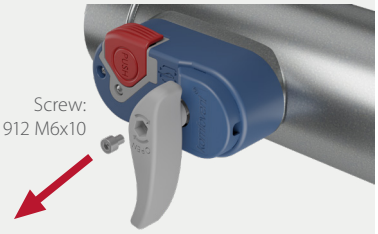
— End position switch – 1 or 2 pcs.

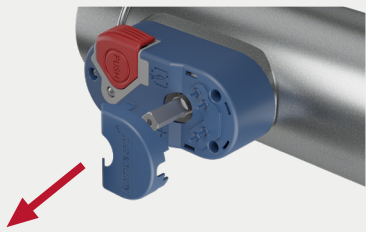
INSTALLATION PROCEDURE:

1

Unscrew damper's handle holding screw DIN 912, then remove handle and cap:

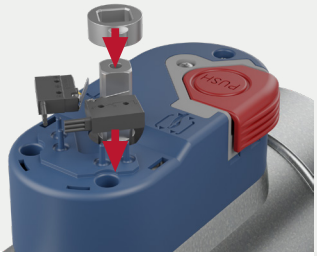
Screw:
DIN 912 M6x10



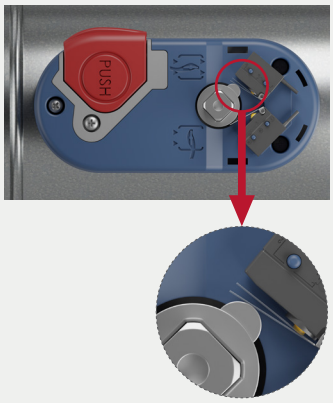


2

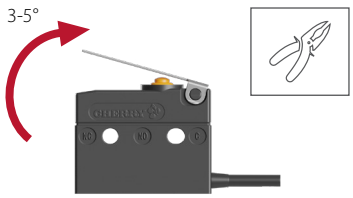
Place switch cam to the axis and one or two microswitches to the indicated positions. Make sure that the cam ledge pushes the microswithes' metal plate.



ACTION SHOULD BE TAKEN IF THE CAM DOESN'T PUSH THE METAL PLATE:



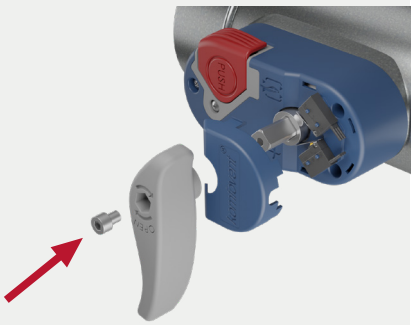
Using an appropriate tool (e.g. pliers), GENTLY fold the metal plate as shown:



Avoid to fold the plate too hard so it can be broken!

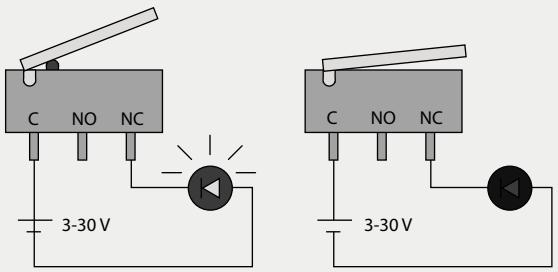
3

Place switch cam and handle back and screw in DIN 912 screw:



4

Connect microswitches to designed way. Each microswitch has NC (normally closed), NO (normally open) and C (common) poles. Connection scheme using signaling device is shown below:



6. PERIODICAL INSPECTIONS

It is a mandatory requirement of EN 15650:2010 standard that all fire dampers must be checked at least twice a year. *Below is Komfovent recommended maintenance inspection checklist.*

Year of inspection	Year 1		Year 2		Year 3		Year 4		Year 5	
Date of inspection	*01.01.21*									
Inspected by										

Installation date:

Checked by / date:

Accepted by / date:

RECORDS OF THE FIRE DAMPER PERIODICAL INSPECTIONS

Fire damper ref. No.		*FD25*		
Location		*Kitchen 21*		
Damper type and size		*UVSL-M 1200x1000*		
Mounted in wall (w) or slab (s) thickness		*W115*		
Access to the damper compliant		*Yes*		
Installation in acc. to manufacturer's instructions		*Yes*		
Correct operation of the fire damper		*Yes*		
Damper cleanness (no accumulated dust, grease)		*Yes*		
Lubricate all moving Parts (Yes/not done)		*Yes*		
Damper condition (corrosion, rust)		*No*		
Fusible link or thermosensor was replaced		*No*		
Damages or modifications		*No*		
Blade and sealing material is undamaged		*Yes*		
Wiring of the end switches are undamaged and connected		*Yes*		
Wiring of the actuator is undamaged and connected		*Yes*		
Pass/fail blade drop test		*Pass*		
End switches indicate blade closing		*Yes*		
Fire damper left in OPEN position		*Yes*		
Year of inspection	**1**	*x*		
	2			
	3			
	4			
	5			
Comments				

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