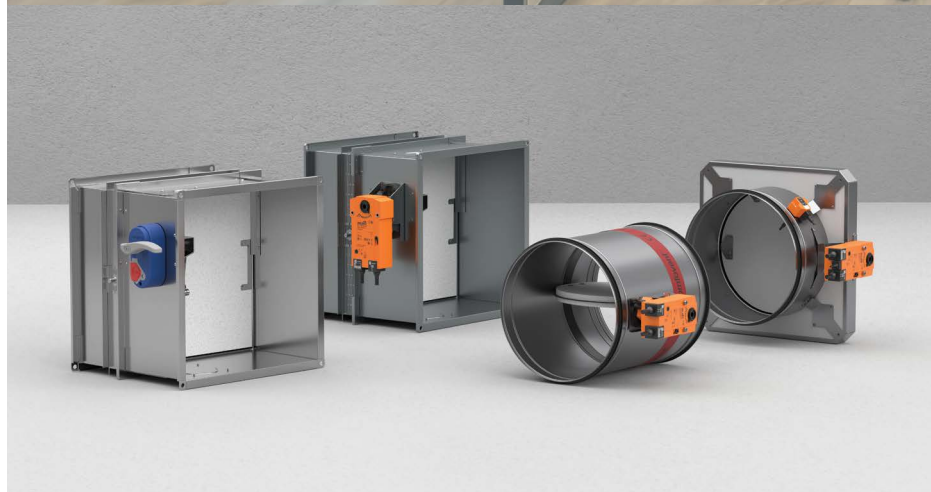


***komfovent***

# FIRE DAMPERS

PRODUCT CATALOGUE  
VERSION 2026-02



Fire Dampers –  
certified  
quality, reliable  
performance

# Content

|                                                             |           |                                                        |           |
|-------------------------------------------------------------|-----------|--------------------------------------------------------|-----------|
| <b>ABOUT US .....</b>                                       | <b>5</b>  | <b>RECTANGULAR FIRE DAMPERS WITH DOUBLE –</b>          |           |
| <b>INTRODUCTION .....</b>                                   | <b>6</b>  | <b>BLADE DESIGN UVSL.....</b>                          | <b>32</b> |
| Fire safety.....                                            | 6         | Rectangular fire damper UVSL-H.....                    | 33        |
| Performances.....                                           | 7         | Rectangular fire damper UVSL-M .....                   | 33        |
| <b>PRODUCT RANGE SUMMARY.....</b>                           | <b>8</b>  | Dimensions.....                                        | 34        |
| Fire dampers.....                                           | 8         | Usage of the electric actuators in UVSL-M dampers..... | 35        |
| General technical parameters .....                          | 9         | Extend beyond the blade .....                          | 35        |
| Operating principles .....                                  | 10        | Weight of the dampers.....                             | 36        |
| <b>CERTIFIED INSTALLATION TYPES AND STANDARDS ..</b>        | <b>12</b> | Effective cross-section area of the dampers .....      | 37        |
| <b>CIRCULAR FIRE DAMPERS UVA .....</b>                      | <b>14</b> | Pressure drop for UVSL fire dampers .....              | 37        |
| Circular fire damper with fuse element UVA-H.....           | 15        | Order code for UVSL dampers .....                      | 38        |
| Circular fire damper with electric actuator UVA-M .....     | 15        | <b>ACTUATING MECHANISM DETAILED INFORMATION ..</b>     | <b>39</b> |
| Dimensions.....                                             | 16        | Manual spring-return mechanism .....                   | 39        |
| Extend beyond the blade .....                               | 17        | Electric actuators .....                               | 41        |
| Weight of the dampers.....                                  | 17        | Connection and power supply units .....                | 43        |
| Free area of the damper.....                                | 17        | <b>CONTROLLER FOR FIRE DAMPERS OR</b>                  |           |
| Used actuators for UVA-M dampers.....                       | 17        | <b>SMOKE EXHAUST DAMPERS FDC-S .....</b>               | <b>44</b> |
| Pressure drop and sound power level for UVA fire dampers .. | 18        | FDC-S controller .....                                 | 44        |
| Order code for UVA dampers .....                            | 19        | FDC-S series functionality with BMS control.....       | 46        |
| <b>CIRCULAR FIRE DAMPERS WITH INSTALLATION</b>              |           | <b>ACCESSORIES FOR UVA DAMPERS .....</b>               | <b>47</b> |
| <b>FLANGE UVAF .....</b>                                    | <b>20</b> | US wall installation tool .....                        | 47        |
| Design and dimensions .....                                 | 21        | UL ceiling installation tool.....                      | 47        |
| Extend beyond the blade .....                               | 21        | Usage of mounting accessories.....                     | 48        |
| Weight of the dampers.....                                  | 21        | SMR dry installation kit.....                          | 48        |
| Free area of the damper.....                                | 21        | Flexible connection JLA .....                          | 49        |
| Used actuators for UVAF dampers .....                       | 21        | End position switches .....                            | 49        |
| Pressure drop and sound power level for UVAF fire dampers.  | 22        | <b>DOCUMENTATION .....</b>                             | <b>50</b> |
| Order code for UVAF dampers .....                           | 22        |                                                        |           |
| <b>RECTANGULAR FIRE DAMPERS WITH CIRCULAR</b>               |           |                                                        |           |
| <b>CONNECTION.....</b>                                      | <b>23</b> |                                                        |           |
| Dimensions.....                                             | 24        |                                                        |           |
| Design elements.....                                        | 24        |                                                        |           |
| Order code for UVS-D dampers .....                          | 25        |                                                        |           |
| <b>RECTANGULAR FIRE DAMPERS UVS .....</b>                   | <b>26</b> |                                                        |           |
| Design and dimensions .....                                 | 27        |                                                        |           |
| Extend beyond the blade .....                               | 27        |                                                        |           |
| Weight of the dampers.....                                  | 28        |                                                        |           |
| Free area of the damper.....                                | 29        |                                                        |           |
| Usage of the electric actuators in UVS-M dampers.....       | 30        |                                                        |           |
| Pressure drop and sound power level for UVS fire dampers .. | 30        |                                                        |           |
| Order code for UVS dampers .....                            | 31        |                                                        |           |





## About us

KOMFOVENT was established in Lithuania in 1997 and specializes in the development, production and distribution of air ventilation systems. Over more than twenty-five years of successful operation, the company has grown into an international group uniting 11 companies in Lithuania and other European countries. Today, it employs more than 1000 people who design and manufacture high-quality ventilation equipment and components.

The company's product portfolio includes a wide range of energy-efficient air handling units as well as various ventilation system components – from air ducts to advanced VAV (Variable Air Volume) dampers. Beyond ensuring comfortable indoor climate, KOMFOVENT products also play an important role in fire safety, offering reliable fire and smoke dampers, fire-resistant ducts and other essential safety accessories. By continuously investing in modern technologies, KOMFOVENT provides solutions for diverse sectors – from industrial facilities, offices, hotels, restaurants and cafés to individual homes and apartments.



In 2018, the company expanded further and opened a modern factory in Riga, Latvia. This facility focuses on the development, testing, production and sales of fire safety equipment and ventilation system accessories, specializing in fire and smoke dampers, fire-resistant ducts, VAV dampers, diffusers and other related products. Today, KOMFOVENT is the largest ventilation system manufacturer in the Baltics and continues to strengthen its position across Europe, offering innovative, reliable and comfort-oriented solutions.



## Introduction

### Fire safety

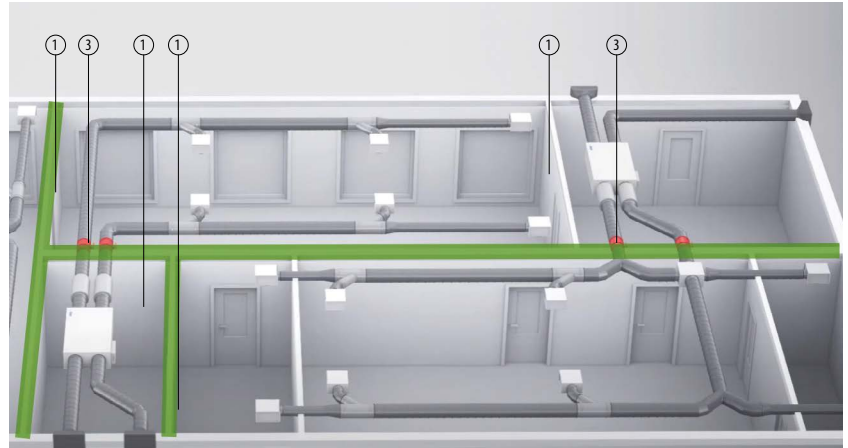
In accordance with fire safety guidelines one of the passive fire protection methods is fire compartmentation. Fire compartment is an enclosed space, comprising one or more separate spaces, bounded by elements of construction – walls and ceiling panels having a specified fire resistance and intended to prevent the spread of fire (in either direction) for a given period of time.

The fire wall or fire ceiling are intended to have specified fire-resistant properties – mechanical stability and thermal insulation. This compartmentation is disturbed by making a technological opening the fire compartment intended for airducts, cabling or other infrastructures of the building. To achieve the designed fire protection level, opening for the airducts are protected by using the fire dampers, ensuring the certified installation methods for:

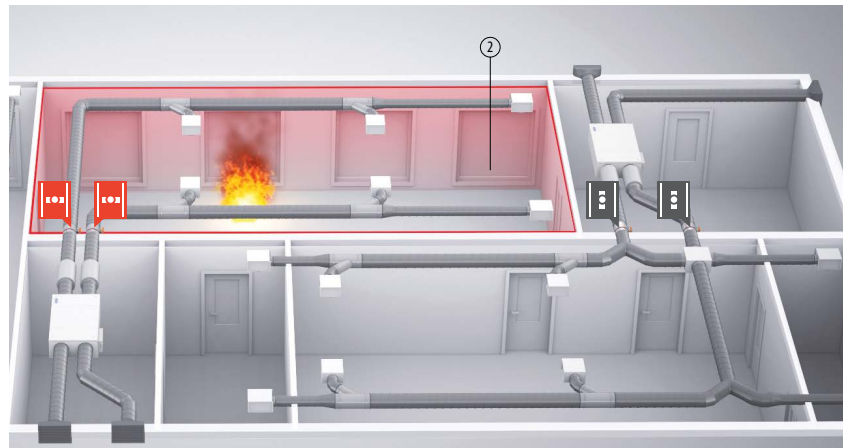
- Different type and size off damper;
- Different constructions;
- Different constructions thickness;
- Different sealing materials.

Fire damper – a device that automatically (or remotely) closes an opening in a building barrier, channel or duct during a fire and prevents the spread of fire and smoke during a specified time.

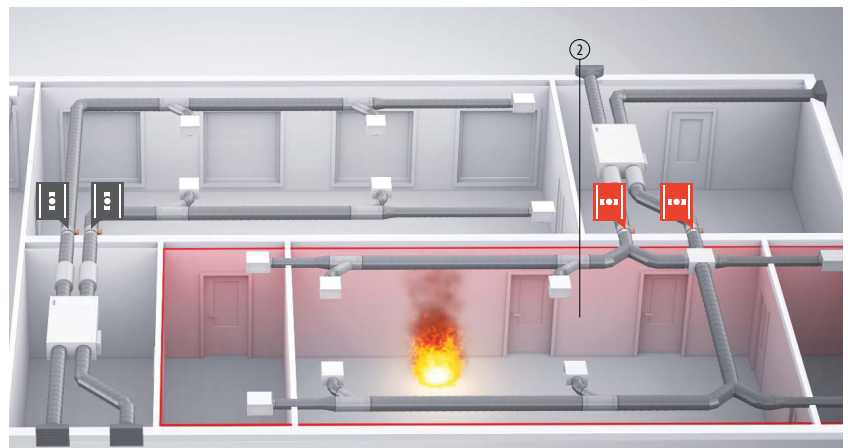
#### Normal conditions:



#### Fire case 1:



#### Fire case 2:



- ① Fire wall
- ② Closed fire compartmentation
- ③ Fire damper

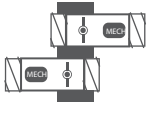
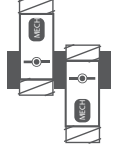
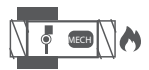
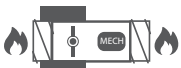
## Performances

Fire dampers conform to the harmonized EN 15650 standard and meet all the requirements of its Annex ZA, i.e., have known fire resistance characteristics (E, I, S), tested operational reliability, sensing element load-bearing capacity and response temperature, and are cycle-tested.

All dampers have **CE certificate of conformity**, such that compliance with the above conditions is achieved. **Declaration of Performance**, signed by the manufacturer's representative, indicates the performance of fire dampers in relation to the relevant technical specifications.

The fire damper manufacturer's **Installation Instructions** provide proof of the respective installation conditions. e.g., inside and remote from walls or ceilings, along with the basic characteristics such as size, support structure, design and installation type, and the respective classes of performance in accordance with the classification standard EN 13501-3.

Depending on the application, fire dampers are classified from: EI 60 ( $v_e \leftrightarrow o$ ) S to EI 120 ( $v_e, h_o \leftrightarrow o$ ) S. Meaning of the symbols stands for:

|                                         |                                                                                     |                                                                                                                                                       |
|-----------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>E</b>                                |    | <b>Mechanical integrity</b> – indicates the ability to maintain mechanical characteristics with no flames and hot gases passing to the unexposed side |
| <b>I</b>                                |   | <b>Heat insulation</b> – indicates the temperature insulation properties of the fire damper                                                           |
| <b>60</b>                               |  | Time period for which E, I and S criteria are performed                                                                                               |
| <b><math>v_e</math></b>                 |  | Fire damper suitable for <b>vertical</b> (wall) installation                                                                                          |
| <b><math>h_o</math></b>                 |  | Fire damper suitable for <b>horizontal</b> (ceiling) installation                                                                                     |
| <b><math>i \rightarrow o</math></b>     |  | Damper tested for fire spreading from the actuating mechanism (exposed) side                                                                          |
| <b><math>i \leftarrow o</math></b>      |  | Damper tested for fire spreading to the actuating mechanism (unexposed) side                                                                          |
| <b><math>i \leftrightarrow o</math></b> |  | Damper tested for fire spreading from the both sides (exposed and unexposed)                                                                          |
| <b>S</b>                                |  | Smoke leakage – indicates the ability to function as smoke and hot gases barrier, by the limits of leakage criteria                                   |

## Product range summary

### Fire dampers

#### UVA Circular fire dampers



##### UVA-H

Standard circular fire damper with manual spring mechanism  
(d100 ÷ 630 mm)



##### UVA-M

Standard circular fire damper with electric actuator  
(d100 ÷ 630 mm)



##### UVAF-M

Circular shortened fire damper with flange and electric actuator  
(d100 ÷ 315 mm)

#### UVS Rectangular fire dampers



##### UVS-H-D

Rectangular fire damper with factory installed two asymmetrical circular connections with manual spring mechanism  
(d710 ÷ 1250 mm)



##### UVS-M-D

Rectangular fire damper with factory installed two asymmetrical circular connections with electric actuator  
(d710 ÷ 1250 mm)



##### UVS-H

Standard rectangular fire damper with manual spring mechanism  
(150 × 150 ÷ 1200 × 1000 mm)



##### UVS-M

Standard rectangular fire damper with electric actuator  
(150 × 150 ÷ 1200 × 1000 mm)



##### UVSL-H

Rectangular large-sized fire damper with two blades and manual spring mechanism  
(1250 × 300 ÷ 1600 × 1000 mm)



##### UVSL-M

Rectangular large-sized fire damper with two blades and electric actuator  
(1250 × 300 ÷ 1600 × 1000 mm)



## General technical parameters

|                                                                           |                                                                                                                                                                                                                                                                                                                                                                 |
|---------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Pressure under fire test</b>                                           | 300 Pa                                                                                                                                                                                                                                                                                                                                                          |
| <b>Maximum operating pressure</b>                                         | 1200 Pa                                                                                                                                                                                                                                                                                                                                                         |
| <b>Maximum air velocity</b>                                               | 12 m/s                                                                                                                                                                                                                                                                                                                                                          |
| <b>Operating temperature</b>                                              | -20 °C to +50 °C                                                                                                                                                                                                                                                                                                                                                |
| <b>Response temperature for fuse element</b>                              | 72 °C                                                                                                                                                                                                                                                                                                                                                           |
| <b>Response temperature for electric tripping device</b>                  | 72 °C                                                                                                                                                                                                                                                                                                                                                           |
| <b>Response time</b>                                                      | Damper with fuse element – 240 s for 25 °C initial temperature, damper with thermoelectric tripping device <60 s                                                                                                                                                                                                                                                |
| <b>Actuator types</b>                                                     | For UVA-M and UVAF-M d100 ÷ 560 mm dampers: BFL24-T, BFL230-T, BFL24-T-ST;<br>For UVA-M d 630 mm damper: BFN24-T, BFN230-T, BFN24-T-ST;<br>For UVS-M dampers: BFL24-T, BFL230-T, BFL24-T-ST or BFN24-T, BFN230-T, BFN24-T-ST depending on size;<br>For UVSL-M dampers: BFN24-T, BFN230-T, BFN24-T-ST or BF24-T, BF230-T, BF24-T-ST depending on size            |
| <b>Casing leakage measurement and classification</b>                      | According to EN 1751 casing leakage class ATC3                                                                                                                                                                                                                                                                                                                  |
| <b>End position switches</b>                                              | Dampers with electric actuators M24T, M230T, M24TST have integrated microswitches to identify the position of the blade;<br>Dampers with fuse element in HEP version have 2 microswitches;<br>Dampers with fuse element in HEC version have 1 microswitch for CLOSED position;<br>Dampers with fuse element in HEO version have 1 microswitch for OPEN position |
| <b>Closed damper leakage measurement and classification</b>               | According to EN 1751 blade leakage class 3                                                                                                                                                                                                                                                                                                                      |
| <b>Fire resistance classes</b>                                            | EIS 60, EIS 90, EIS 120                                                                                                                                                                                                                                                                                                                                         |
| <b>Operational reliability</b>                                            | Cycling: 300 or 10 200 cycles according to EN 15650                                                                                                                                                                                                                                                                                                             |
| <b>Classification of the resistance to fire performance</b>               | EN 13501-3                                                                                                                                                                                                                                                                                                                                                      |
| <b>Durability of operational reliability</b>                              | Opening closing cycle: 50 cycles prior the fire test according to EN 15650                                                                                                                                                                                                                                                                                      |
| <b>Standard version</b>                                                   | All metal parts are made of DX51D+Z275 galvanized steel, according to EN 10346                                                                                                                                                                                                                                                                                  |
| <b>Fire resistance tests for service installations – Fire dampers</b>     | EN 1366-2                                                                                                                                                                                                                                                                                                                                                       |
| <b>UVA-H, UVA-M, UVS-H, UVS-M dampers Hygienic performance (optional)</b> | VDI 6022, sheet 1 (01/2018), SWKI VA 104-1 (01/2019), ÖNORM H 6021 (01/2023)                                                                                                                                                                                                                                                                                    |

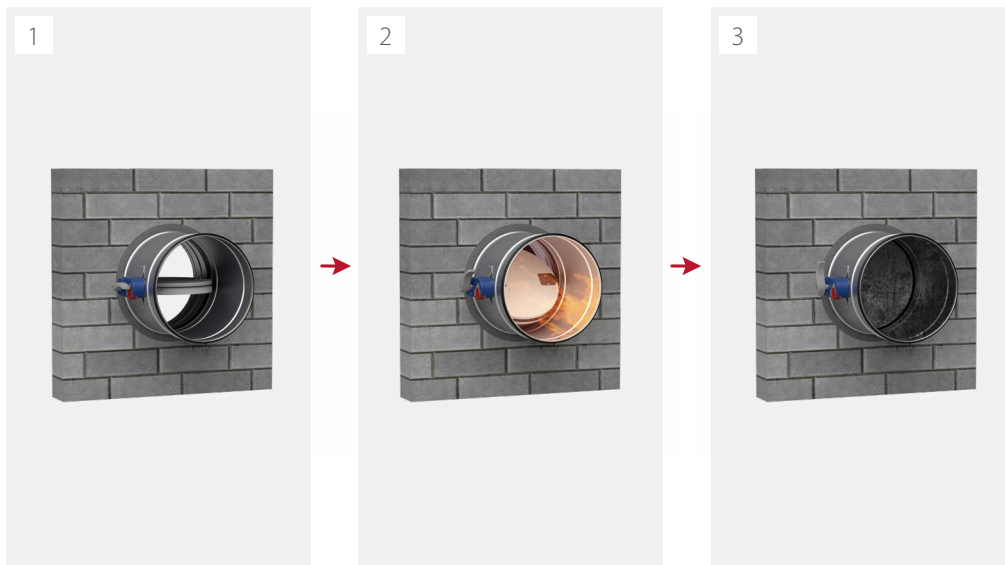
The damper has one inspection hole, which is accessible by taking out button mechanism with fuse element (for UVA-H) or thermoelectric tripping device (for UVA-M). The diameter of free inspection hole is 20 mm.

UVS-H and UVS-M fire dampers are equipped with two large inspection hatches located at the top and bottom of the main mechanism.

Dampers are tested for both exposed and unexposed fire conditions (actuating mechanism is located on the exposed or unexposed fire side). Dampers can be used for both airflow directions. Position of the blade of the damper in the case of fire: the blade is closed. Damper with fuse element: spring mechanism is protected against damages and contamination with plastic cover.

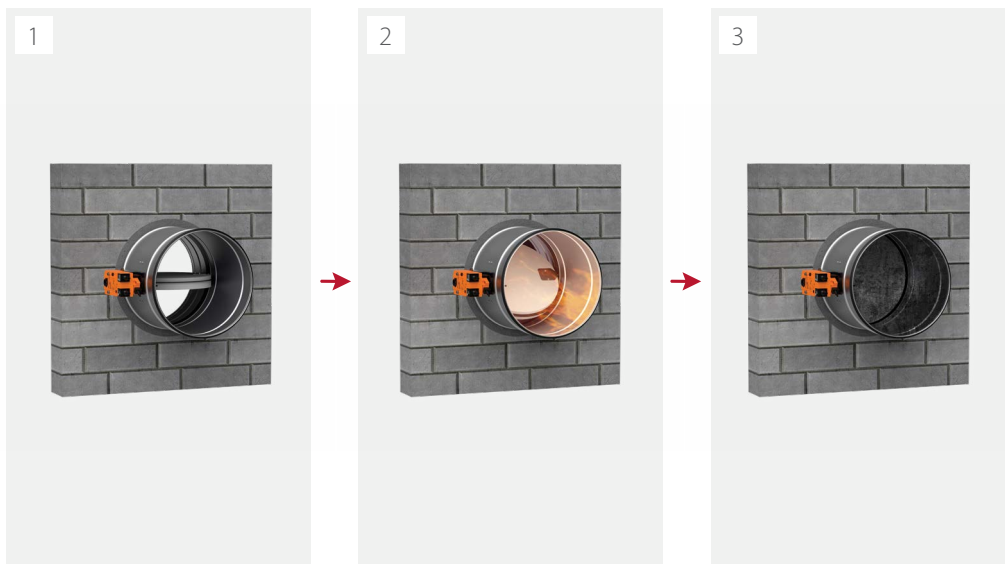
## Operating principles

### Fire damper with manual spring return mechanism and thermal fuse element:



- 1. Normal conditions:** The fire damper is in the open position when the ventilation system is operating.
- 2. Emergency case triggered:** In the event of fire, the fusible element melts, and the fire damper closes by spring force.
- 3. Closed:** Special material expands, seals gap and prevents fire and smoke passing through damper.

### Fire damper with motorized spring return mechanism and thermoelectric tripping device:



- 1. Normal conditions:** The fire damper is in the open position when the ventilation system is operating and electric actuator power supply is on.
- 2. Emergency case triggered:** The electric actuator releases a spring mechanism, which, through a system of levers, moves the damper blade to the CLOSED position when the power supply is interrupted.
- 3. Closed:** Special material expands, seals gap and prevents fire and smoke passing through damper.



**The motorized damper is closing if any of following event happens:**

- Temperature inside the airduct reaches 72°C and internal thermal fuse blows the power source (this fuse is a replacement part).
- Temperature outside the airduct reaches 72°C and outer thermal fuse blows the power source (this fuse cannot be replaced).
- Test button is pressed on thermoelectric tripping device.
- Building Management System conducts an emergency or test power shutdown.
- Centralized or local system conducts an emergency or test power shutdown via communication units.

**IMPORTANT**

- *Closing tightness is ensured by sealing rubber, which is located around the blade of the damper. The inside perimeter of the blade is protected by expansion of the fire-stopping sealant.*
- *To prevent heat passage through the casing of the damper, the perforation is used as a thermal bridge. The result is prevented the possibility of spread of fire and smoke to other fire compartments or premises through a duct system.*
- *Electric actuator is equipped with thermoelectric tripping device (T), containing two separate fuse elements placed inside and outside of the airduct for two-sided temperature measuring. If outer thermal fuse blows, this fuse cannot be replaced, and need to replace thermoelectric tripping device (T).*
- *All fire dampers with electric actuator have an integrated end position switches by default. Manual spring return mechanism has optional end position switches.*
- *The fuse element is single use only and should be replaced with a new one after activation.*

## Certified Installation types and standards

|                                                                            |                              | <b>UVA-H/-M</b><br>Ø100...315<br> | <b>UVA-H/-M</b><br>Ø355...630 (560)<br> | <b>UVAF-M</b><br>Ø100...315<br> | <b>UVS-H/-M-D</b><br>Ø710...1250<br> | <b>UVS-H/-M</b><br>150x150...1200x1000<br> | <b>UVSL-H/-M</b><br>1250x300...1600x1000<br> |
|----------------------------------------------------------------------------|------------------------------|--------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------|
| <b>CE STANDARDS:</b><br>Testing<br>Classification<br>Certification         |                              | EN 1366-2<br>EN 13501-3<br>EN 15650                                                                                | EN 1366-2<br>EN 13501-3<br>EN 15650                                                                                      | EN 1366-2<br>EN 13501-3<br>EN 15650                                                                              | EN 1366-2<br>EN 13501-3<br>EN 15650                                                                                    | EN 1366-2<br>EN 13501-3<br>EN 15650                                                                                           | EN 1366-2<br>EN 13501-3<br>EN 15650                                                                                             |
| <b>DECLARATION OF PERFORMANCE</b>                                          |                              | EID-2022FD/15                                                                                                      | EID-2022FD/16                                                                                                            | EID-2021FD/12                                                                                                    | EID-2022FD/13<br>EID-2022FD/14                                                                                         | EID-2022FD/13<br>EID-2022FD/14                                                                                                | EID-2022FD/21<br>EID-2022FD/22                                                                                                  |
| <b>OTHER STANDARDS/REGISTERS:</b><br>VDI 6022-1, VDI 3803-1<br>eBVD<br>VKF |                              | +                                                                                                                  | +                                                                                                                        | -                                                                                                                | +                                                                                                                      | +                                                                                                                             | -                                                                                                                               |
| <b>LEAKAGE CLASS</b>                                                       |                              | Casing: ATC 3<br>Blade: 3 (acc. to EN 1751)                                                                        | Casing: ATC 3<br>Blade: 3 (acc. to EN 1751)                                                                              | Casing: ATC 3<br>Blade: 3 (acc. to EN 1751)                                                                      | Casing: ATC 3<br>Blade: 3 (acc. to EN 1751)                                                                            | Casing: ATC 3<br>Blade: 3 (acc. to EN 1751)                                                                                   | Casing: ATC 3<br>Blade: 3 (acc. to EN 1751)                                                                                     |
| <b>SOLID WALL</b><br>b≥100 mm                                              | Mortar                       | EI 120, b≥115 mm<br>EI 90, b≥100 mm                                                                                | EI 120, Ø355-Ø560,<br>b≥115 mm<br>EI 90, Ø355-Ø630,<br>b≥100 mm                                                          | n/a                                                                                                              | EI 120                                                                                                                 | EI 120                                                                                                                        | EI 120                                                                                                                          |
|                                                                            | Fire Batt                    | EI 90                                                                                                              | EI 90                                                                                                                    | n/a                                                                                                              | EI 90, max size d800                                                                                                   | EI 90, max size 1200x800                                                                                                      | EI 60                                                                                                                           |
|                                                                            | Min distance between dampers | EI 60 with mortar, ≥40 mm<br>EI 90 with fire batt, ≥40 mm                                                          | EI 60 with fire batt, ≥40 mm                                                                                             | -                                                                                                                | EI 90, with fire batt, ≥60 mm                                                                                          | EI 90, with fire batt, ≥60 mm                                                                                                 | -                                                                                                                               |
|                                                                            | Remote installation          | EI 60                                                                                                              | -                                                                                                                        | n/a                                                                                                              | -                                                                                                                      | -                                                                                                                             | -                                                                                                                               |
|                                                                            | Any angle                    | Same EI class                                                                                                      | Same EI class                                                                                                            | -                                                                                                                | EI 90                                                                                                                  | EI 90                                                                                                                         | -                                                                                                                               |
|                                                                            | Dry Montage                  | EI 60 with SMR kit                                                                                                 | -                                                                                                                        | EI 60                                                                                                            | -                                                                                                                      | -                                                                                                                             | -                                                                                                                               |
|                                                                            | AISI 304                     | Same EI class                                                                                                      | Same EI class                                                                                                            | -                                                                                                                | EI 60                                                                                                                  | EI 60                                                                                                                         | -                                                                                                                               |
| <b>FLEXIBLE WALL</b><br>b≥100 mm                                           | Mortar                       | EI 90                                                                                                              | EI 90                                                                                                                    | n/a                                                                                                              | EI 120                                                                                                                 | EI 120                                                                                                                        | -                                                                                                                               |
|                                                                            | Fire batt                    | EI 90                                                                                                              | EI 90                                                                                                                    | n/a                                                                                                              | EI 90, max size d800                                                                                                   | EI 90, max size 1200x800                                                                                                      | EI 60                                                                                                                           |
|                                                                            | Min distance between dampers | EI 60 with mortar, ≥40 mm<br>EI 90 with fire batt, ≥40 mm                                                          | EI 60 with fire batt, ≥40 mm                                                                                             | -                                                                                                                | EI 90, with fire batt, ≥60 mm                                                                                          | EI 90, with fire batt, ≥60 mm                                                                                                 | -                                                                                                                               |
|                                                                            | Remote installation          | EI 60                                                                                                              | -                                                                                                                        | n/a                                                                                                              | -                                                                                                                      | -                                                                                                                             | -                                                                                                                               |
|                                                                            | Any angle                    | Same EI class                                                                                                      | Same EI class                                                                                                            | -                                                                                                                | EI 90                                                                                                                  | EI 90                                                                                                                         | -                                                                                                                               |
|                                                                            | Dry montage                  | -                                                                                                                  | -                                                                                                                        | EI 60                                                                                                            | -                                                                                                                      | -                                                                                                                             | -                                                                                                                               |
|                                                                            | AISI 304                     | Same EI class                                                                                                      | Same EI class                                                                                                            | -                                                                                                                | EI 60                                                                                                                  | EI 60                                                                                                                         | -                                                                                                                               |
| <b>FLOOR / CEILING EI 120</b><br>(thickness 150 mm)                        | Mortar                       | EI 120                                                                                                             | EI 120                                                                                                                   | -                                                                                                                | EI 120                                                                                                                 | EI 120                                                                                                                        | EI 120                                                                                                                          |
|                                                                            | Fire batt                    | EI 90                                                                                                              | EI 90                                                                                                                    | n/a                                                                                                              | -                                                                                                                      | -                                                                                                                             | -                                                                                                                               |
|                                                                            | Min distance between dampers | EI 120 with mortar, ≥40 mm                                                                                         | EI 120 with mortar, ≥40 mm                                                                                               | -                                                                                                                | -                                                                                                                      | -                                                                                                                             | -                                                                                                                               |
|                                                                            | Remote installation          | EI 60                                                                                                              | -                                                                                                                        | -                                                                                                                | -                                                                                                                      | -                                                                                                                             | -                                                                                                                               |
|                                                                            | Dry montage                  | -                                                                                                                  | -                                                                                                                        | EI 90                                                                                                            | -                                                                                                                      | -                                                                                                                             | -                                                                                                                               |
|                                                                            | AISI 304                     | Same EI class                                                                                                      | Same EI class                                                                                                            | -                                                                                                                | EI 60                                                                                                                  | EI 60                                                                                                                         | -                                                                                                                               |
| <b>SANDWICH WALL EI 90</b><br>b≥100 mm                                     | Fire batt                    | EI 90                                                                                                              | EI 90                                                                                                                    | -                                                                                                                | EI 60                                                                                                                  | EI 60                                                                                                                         | -                                                                                                                               |
|                                                                            | Any angle                    | Same EI class                                                                                                      | Same EI class                                                                                                            | -                                                                                                                | Same EI class                                                                                                          | Same EI class                                                                                                                 | -                                                                                                                               |
|                                                                            | AISI 304                     | Same EI class                                                                                                      | Same EI class                                                                                                            | -                                                                                                                | Same EI class                                                                                                          | Same EI class                                                                                                                 | -                                                                                                                               |

**IMPORTANT**

- *The installation of the damper must comply with the manufacturer's installation instructions. All other installation solutions are beyond the scope of certification. Only qualified staff is allowed to perform installation works.*
- *The fire resistance classification is applicable for supporting constructions and materials with fire resistance, thickness, and density equal to or greater than the solution shown in the installation instructions.*
- *The damper should be accessible for inspection and maintenance procedures during the whole period of operation at least twice per year (or even more often under local requirements) and shall be conducted in accordance with manufacturer's Inspection and Maintenance procedures.*
- *Modifying the fire damper is not permitted and will void the terms of guarantee.*
- *Fire damper cannot be used as a smoke control damper and in commercial kitchens' air exhaust systems.*

## Circular fire dampers UVA



Circular UVA fire dampers are available in 2 main configurations: dampers with fuse element (UVA-H) and dampers with an electric actuator with spring return mechanism (UVA-M).

When it is necessary UVA-H dampers can additionally be equipped with end position switches, but UVA-M dampers – with electric power supply and communication unit.

UVA dampers can be delivered in hygienic version that meets the VDI 6022 Sheet 1 standard requirements.



### Parameters:

|                                            |                                                                              |
|--------------------------------------------|------------------------------------------------------------------------------|
| <b>Nominal diameter</b>                    | Ø100–Ø630 mm                                                                 |
| <b>Length of the casing</b>                | 285 mm (d100 ÷ 315 mm) or 505 mm (d355 ÷ 630 mm)                             |
| <b>Duct connection</b>                     | 40 mm (d100 ÷ 315 mm) or 60 mm (d355 ÷ 630 mm) connection with rubber gasket |
| <b>Weight</b>                              | From 1,7 to 23 kg depending on size and specification                        |
| <b>Free area</b>                           | From 0,0059–0,2852 m <sup>2</sup>                                            |
| <b>Pressure drop of open blade</b>         | From 0–135 Pa depending on size and air velocity                             |
| <b>Noise level of open blade</b>           | <45 dB(A) depending on size and air velocity                                 |
| <b>Working temperature</b>                 | From -20 to +50 °C                                                           |
| <b>Release (blade closing) temperature</b> | 72 °C                                                                        |
| <b>Material</b>                            | Galvanized, Stainless steel AISI304                                          |
| <b>Fire resistance classification</b>      | EI60 - EI120                                                                 |

### Highlights:

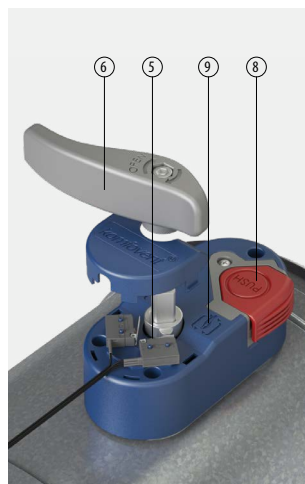
- Advanced laser welding of metal casing.
- Perforation used as a thermal break.
- Inspection available by removing thermoelectric tripping device for motorized models (UVA-M models) and by removing fuse element/test button mechanism for manual models (UVA-H models).
- Casing leakage class: ATC 3(acc. to EN 1751).
- Closed blade leakage class: 3 (acc. to EN 1751).
- Installation: in solid, flexible, sandwich walls and floor/ceiling, any angle, remote installation, close distance.
- 24V or 230 V electric actuator with thermoelectric tripping device for motorized dampers (UVA-M models).
- End position switches are integrated in actuators for motorized dampers (UVA-M models).
- Easy replacement of fuse element.

### Options:

- Limit position switches available for dampers with manual mechanism (UVA-H dampers).
- Dampers can be equipped with actuators with ST connection plugs for simple integration in control and monitoring systems or bus networks via communication and power supply units (Belimo type BKN230-24-MOD, BKN230-24MP).
- Dampers can be supplied with platform for BKN (Belimo type BKN230-24-MOD, BKN230-24MP) communication and power supply units.
- Dampers can be supplied with BKN (Belimo type BKN230-24-MOD, BKN230-24MP) communication and power supply unit.
- Larger diameters available by using rectangular dampers with integrated circular connections 710, 800, 900 and 1250 mm.
- Installation accessories available.
- FDC series controllers with power supply function (till 4 Fire Dampers) are available.
- Fast installation dry montage kit SMR can be supplied separately or preinstalled of factory.

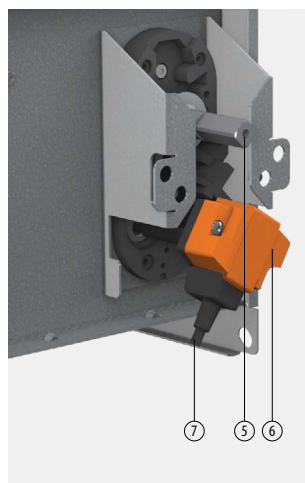
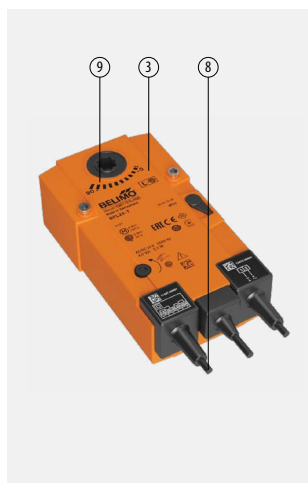


## Circular fire damper with fuse element UVA-H



- ① Casing
- ② Blade
- ③ Opening device with spring
- ④ Intumescent gasket
- ⑤ End position switches (optional)
- ⑥ Opening handle
- ⑦ Fuse element
- ⑧ Test button
- ⑨ Marking of blade position

## Circular fire damper with electric actuator UVA-M



- ① Casing
- ② Blade
- ③ Actuator BFL24-T/BFL24-T-ST / BFL230-T / BFN24-T / BFN24-T-ST / BFN230-T
- ④ Intumescent seal
- ⑤ Axle of the blade
- ⑥ Thermoelectric tripping device 72°
- ⑦ Connection cable
- ⑧ Actuator's connection cables
- ⑨ Marking of blade position

**Fuse of thermoelectric tripping device**

Closing of the blade in UVA-M fire damper with electric actuator occurs as a result of the release of spring mechanism through the system of levers. Electric actuator is equipped with thermoelectric tripping device, containing two separate fuse elements placed inside and outside of the airduct for two-sided temperature measuring.

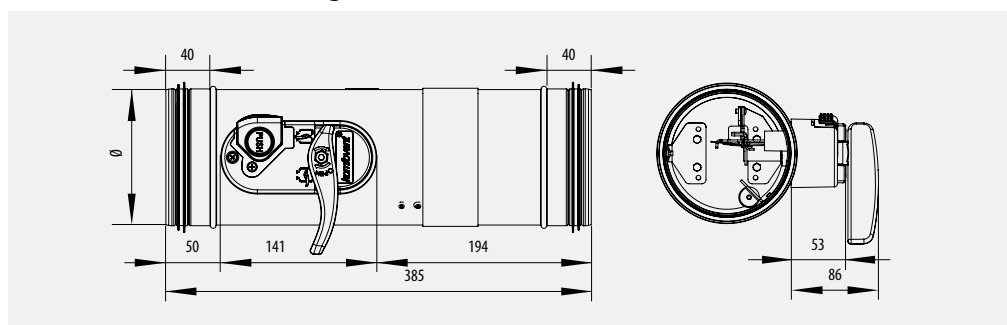
*a – TEST button.*

*b – Inner fuse – placed inside the damper.*

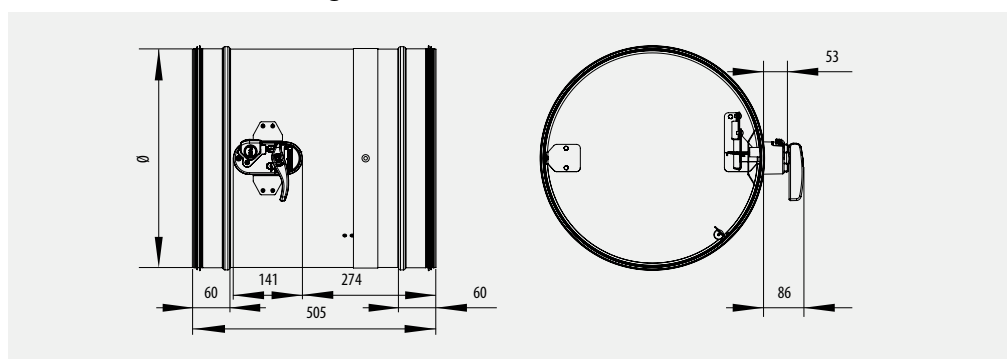
## Dimensions

Circular UVA dampers are available in size range Ø100, Ø125, Ø160, Ø200, Ø315, Ø355, Ø400, Ø450, Ø500, Ø560 and Ø630 mm. Transitional sizes are available on request. Dimensions of the damper for size ranges Ø100 ÷ 315 mm and Ø355 ÷ 630 mm differ significantly - see figures below:

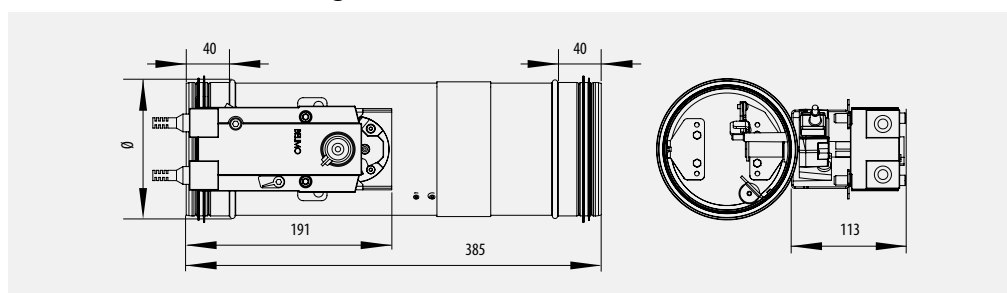
### UVA-H dimensions for size range Ø100 ÷ 315 mm



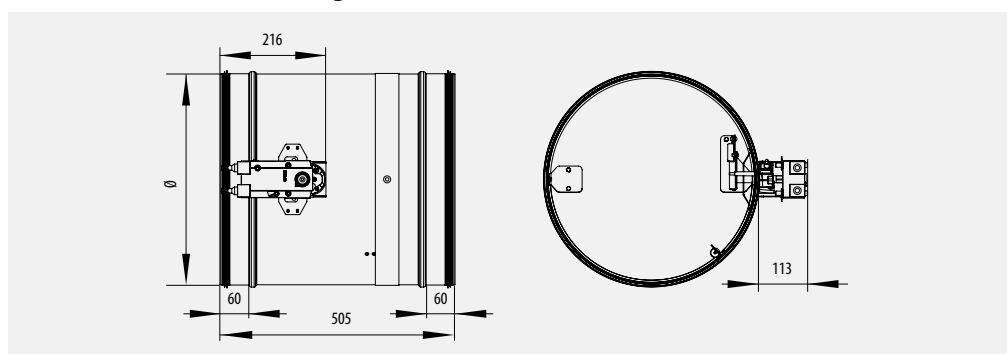
### UVA-H dimensions for size range Ø355 ÷ 630 mm



### UVA-M dimensions for size range Ø100 ÷ 315 mm



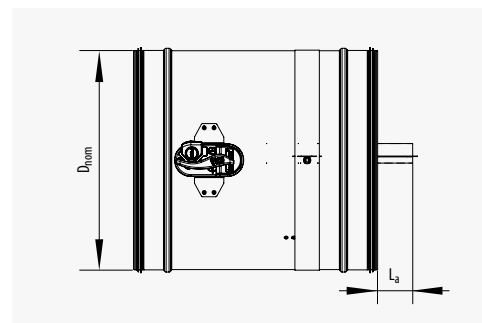
### UVA-M dimensions for size range Ø355 ÷ 630 mm



## Extend beyond the blade

UVA-H and UVA-M fire dampers starting with Ø315 mm have exposition of the blade into the duct within a certain distance:

| Ø, mm               | 315 | 355 | 400 | 450 | 500 | 560 | 630 |
|---------------------|-----|-----|-----|-----|-----|-----|-----|
| L <sub>a</sub> , mm | 28  | 34  | 56  | 81  | 106 | 136 | 171 |



## Weight of the dampers

| Ø, mm          | 100 | 125 | 160 | 200 | 250 | 315 | 355  | 400  | 450  | 500  | 560  | 630  |
|----------------|-----|-----|-----|-----|-----|-----|------|------|------|------|------|------|
| UVA-H, kg      | 1,7 | 2,1 | 2,5 | 2,9 | 3,7 | 4,7 | 9,6  | 11,3 | 13,3 | 15,4 | 18,2 | 21,7 |
| UVA-M .. T, kg | 2,4 | 2,8 | 3,2 | 3,7 | 4,4 | 5,5 | 10,4 | 12,0 | 14,0 | 16,1 | 18,9 | 22,4 |

## Free area of the damper

Free area for completely open blade of UVA damper, m<sup>2</sup>:

| Ø, mm                     | 100    | 125    | 160    | 200    | 250    | 315    | 355    | 400    | 450    | 500    | 560    | 630    |
|---------------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| Free area, m <sup>2</sup> | 0,0059 | 0,0098 | 0,0169 | 0,0274 | 0,0441 | 0,0716 | 0,0847 | 0,1096 | 0,1410 | 0,1763 | 0,2238 | 0,2852 |

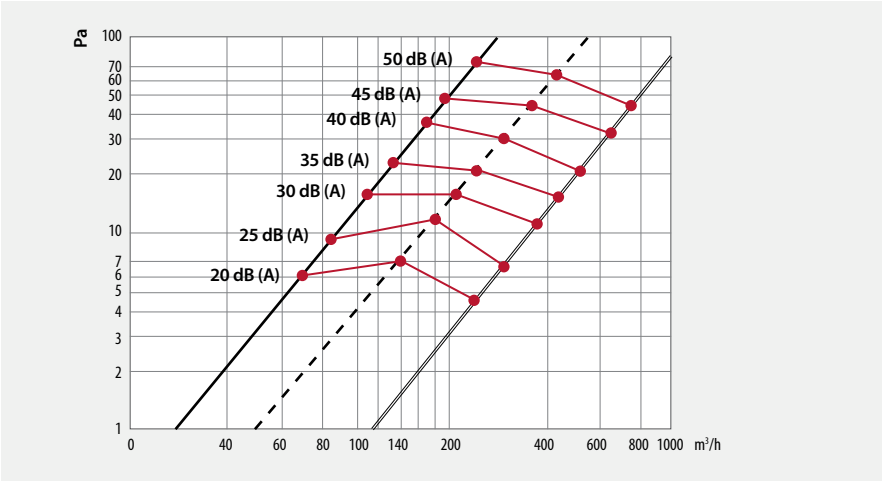
## Used actuators for UVA-M dampers

| Ø, mm     | 100 | 125 | 160 | 200 | 250 | 315 | 355 | 400 | 450 | 500 | 560 | 630 |
|-----------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Actuators |     |     |     |     |     |     |     |     |     |     |     |     |

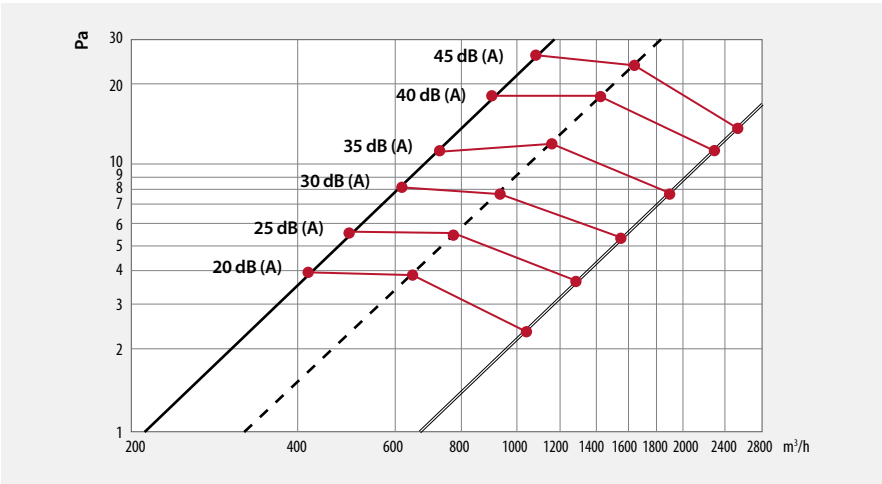
BFL24-T, BFL230-T, BLF24-T-ST

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

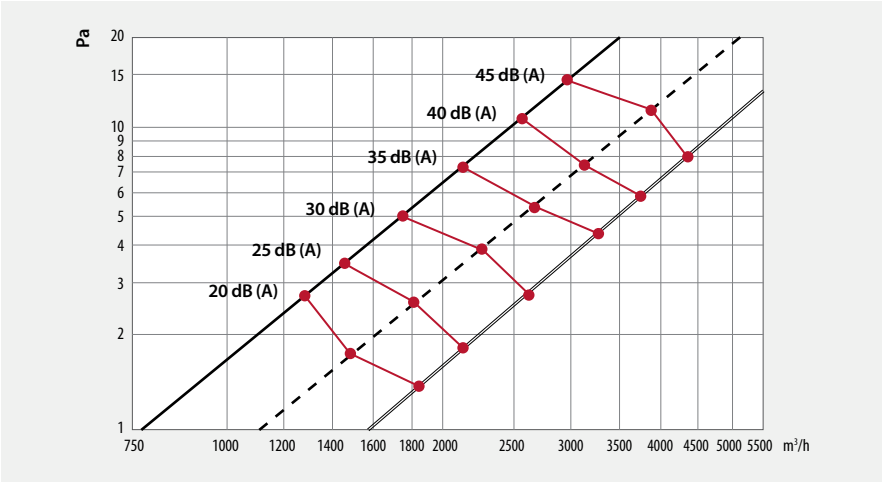
Pressure drop and sound power level for UVA fire dampers



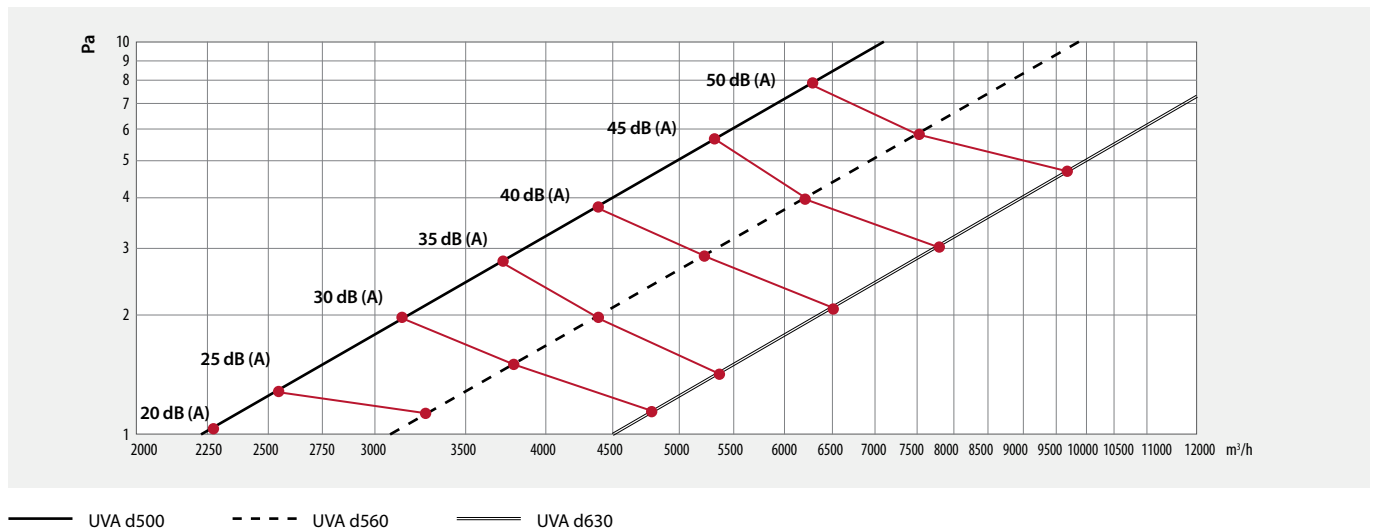
— UVA d100    - - - UVA d125    = = = UVA d160



— UVA d200    - - - UVA d250    = = = UVA d315



— UVA d355    - - - UVA d400    = = = UVA d450



## Order code for UVA dampers

**UVA – M24T – 200 – BKD – HY – A4**

①

②

③

④

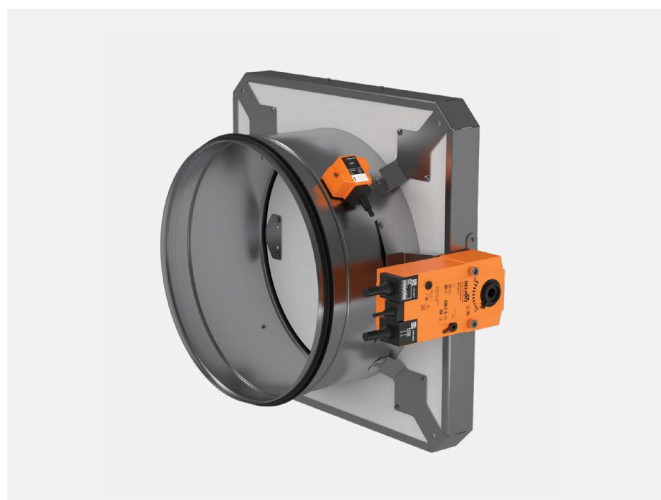
⑤

⑥

- ① **Product type:** UVA – Circular fire damper
- ② **Activation type:** H – manual spring-return mechanism with fusible link  
 HEP – manual spring-return mechanism with fusible link and two end position switches  
 HEC – manual spring-return mechanism with fusible link and one CLOSED end position switch  
 HEO – manual spring-return mechanism with fusible link and one OPEN end position switch  
 M24T – 24 V AC/DC spring-return actuator with thermoelectric tripping device  
 M230T – 230 V AC spring-return actuator with thermoelectric tripping device  
 M24TST – 24 V AC/DC spring-return actuator with thermoelectric tripping device and connection plugs for Communication and power supply unit BKN230-...
- ③ **Dimensions:** d – nominal diameter in mm
- ④ **Pre-installed accessories:** No entry – no preinstalled accessories  
 B – bracket for Communication and power supply unit BKN230-...  
 BKD – bracket with Communication and power supply unit BKN230-24-MOD  
 BKP – bracket with Communication and power supply unit BKN230-24MP
- ⑤ **Hygiene requirements:** No entry – no specific requirements to hygiene standards  
 HY – fire damper meets the VDI 6022 Sheet 1 requirements
- ⑥ **Material:** No entry – galvanized steel  
 A4 – stainless steel AISI304



## Circular fire dampers with installation flange UVAF



UVAF-M damper is equipped with an electric actuator. The fire damper is designed for at-the-surface mounting, using a “dry installation” technique. For this purpose, UVAF-M fire equipped with dry installation fire-resistant flange.



### Parameters:

|                                            |                                                        |
|--------------------------------------------|--------------------------------------------------------|
| <b>Nominal diameter</b>                    | Ø100–Ø315 mm                                           |
| <b>Length of the casing</b>                | 247 mm                                                 |
| <b>Duct connection</b>                     | 40 mm (d100 ÷ 315 mm) connection with rubber gasket    |
| <b>Weight</b>                              | From 3,3 to 7,4 kg depending on size and specification |
| <b>Free area</b>                           | From 0,004–0,068 m <sup>2</sup>                        |
| <b>Pressure drop of open blade</b>         | From 0–135 Pa depending on size and air velocity       |
| <b>Noise level of open blade</b>           | <45 dB(A) depending on size and air velocity           |
| <b>Working temperature</b>                 | From -20 to +50 °C                                     |
| <b>Release (blade closing) temperature</b> | 72 °C                                                  |
| <b>Material</b>                            | Galvanized, Stainless steel AISI304                    |
| <b>Fire resistance classification</b>      | El60                                                   |

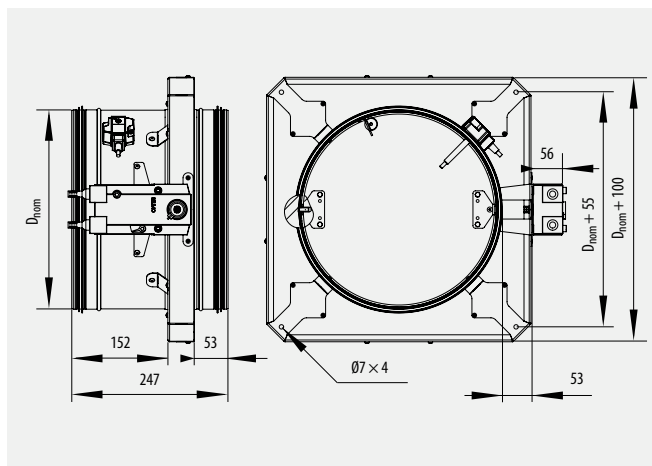
### Highlights:

- Advanced laser welding of metal casing.
- Fast and easy installation.
- Extra-short 247 mm casing.
- Inspection available by removing thermoelectric tripping device.
- Casing leakage class: ATC 3(acc. to EN 1751).
- Closed blade leakage class: 3 (acc. to EN 1751).
- Installation: dry installation in solid or flexible walls and solid floor/ceiling.
- 24 V or 230 V electric actuator with thermoelectric tripping device.
- End position switches are integrated in actuators.

### Options:

- Dampers can be equipped with actuators with ST connection plugs for simple integration in control and monitoring systems or bus networks via communication and power supply units (Belimo type BKN230-24-MOD, BKN230-24MP).
- Dampers can be supplied with platform for BKN (Belimo type BKN230-24-MOD, BKN230-24MP) communication and power supply units.
- Dampers can be supplied with BKN (Belimo type BKN230-24-MOD, BKN230-24MP) communication and power supply unit.
- FDC series controllers with power supply function (till 4 Fire Dampers) are available.

## Design and dimensions



- ① Metal collar
- ② Calcium-silicate fire-resistant flange
- ③ 24 V / 230 V actuator  
BFL24-T / BFL230-T /  
BFL24-T-ST
- ④ Connecting wires
- ⑤ Installation holes
- ⑥ Metal casing
- ⑦ 72 °C thermosensor
- ⑧ Calcium-silicate blade
- ⑨ Casing insulating rubber

## Extend beyond the blade

UVAF fire dampers starting with Ø200 mm have exposition of the blade into the duct within a certain distance:

| Ø, mm               | 100 | 125 | 160 | 200 | 250 | 315 |
|---------------------|-----|-----|-----|-----|-----|-----|
| L <sub>a</sub> , mm | 0   | 0   | 0   | 13  | 38  | 71  |

## Weight of the dampers

| Ø, mm      | 100 | 125 | 160 | 200 | 250 | 315 |
|------------|-----|-----|-----|-----|-----|-----|
| Weight, kg | 3,3 | 3,7 | 4,3 | 5,0 | 6,0 | 7,4 |

## Free area of the damper

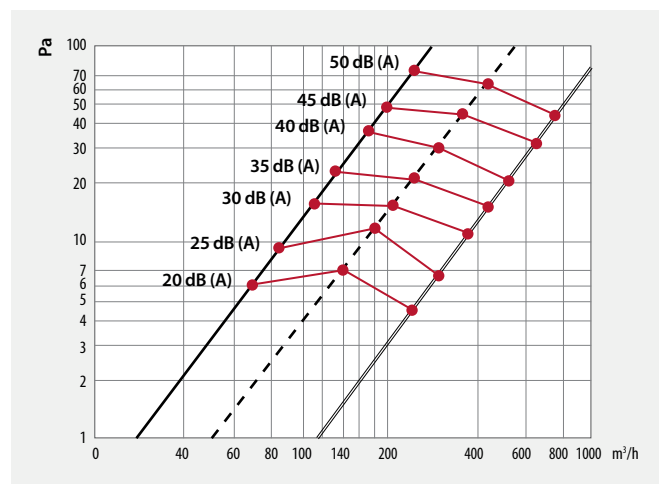
| Ø, mm                     | 100   | 125    | 160   | 200   | 250  | 315   |
|---------------------------|-------|--------|-------|-------|------|-------|
| Free area, m <sup>2</sup> | 0,004 | 0,0075 | 0,015 | 0,025 | 0,04 | 0,068 |

## Used actuators for UVAF dampers

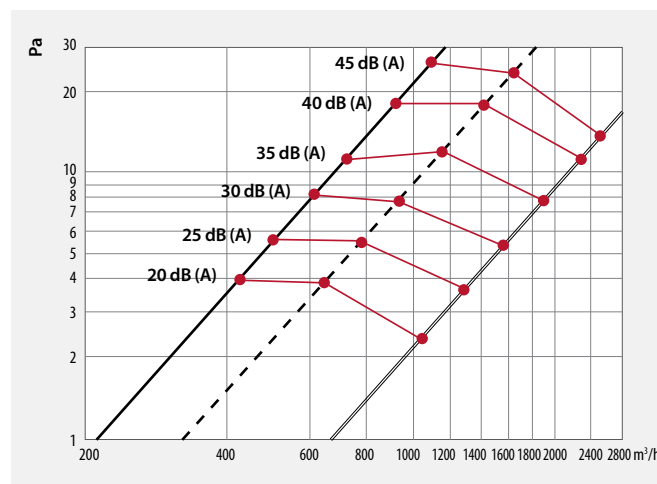
### Used actuators:

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

## Pressure drop and sound power level for UVAF fire dampers



— UVAF d100    - - - UVAF d125    — UVAF d160



— UVAF d200    - - - UVAF d250    — UVAF d315

## Order code for UVAF dampers

**UVAF – M24T – 315 – BKD – A4**

①

②

③

④

⑤

① **Product type:** UVAF – Circular fire damper

② **Mechanism type:** M – automatic actuation

M24T – 24 V AC/DC spring return actuator with thermoelectric tripping device

M230T – 230 V spring return actuator with thermoelectric tripping device

M24TST – 24 V AC/DC spring return actuator with thermoelectric tripping device and connection plugs for Communication and power supply unit BKN230-...

③ **Dimensions:** d – nominal diameter in mm

④ **Pre-installed accessories:** No entry – no preinstalled accessories

B – bracket for Communication and power supply unit BKN230...

BKD – bracket with Communication and power supply unit BKN230-24-MOD

BKP – bracket with Communication and power supply unit BKN230-24MP

⑤ **Material:** No entry –galvanized steel

A4 – stainless steel AISI304

## Rectangular fire dampers with circular connection



UVS-H-D and UVS-M-D specification available.

For integration in duct systems with diameters 710, 800, 900, 1000 and 1250 mm fire damper models with factory installed two asymmetrical circular connections on standard rectangular dampers UVS-H and UVS-M are available.



### Parameters:

|                                                |                                                                        |
|------------------------------------------------|------------------------------------------------------------------------|
| <b>Nominal casing sizes (width) × (height)</b> | From 700 × 700 mm to 1200 × 1000 mm, Connection d710 ÷ 1250 mm         |
| <b>Length of the casing</b>                    | 887–1201 mm with connection adapters                                   |
| <b>Duct connection</b>                         | 100 mm (d710 mm) 135 mm (d800 ÷ 1250 mm) connection with rubber gasket |
| <b>Weight</b>                                  | From 44 to 68 kg depending on size and specification                   |
| <b>Free area</b>                               | From 0,46–0,15 m <sup>2</sup>                                          |
| <b>Pressure drop of open blade</b>             | From 0,99–90 Pa depending on size and air velocity                     |
| <b>Noise level of open blade</b>               | <45 dB(A) depending on size and air velocity                           |
| <b>Working temperature</b>                     | From -20 to +50 °C                                                     |
| <b>Release (blade closing) temperature</b>     | 72 °C                                                                  |
| <b>Material</b>                                | Galvanized, Stainless steel AISI304                                    |
| <b>Fire resistance classification</b>          | EI60 - EI120                                                           |

### Highlights:

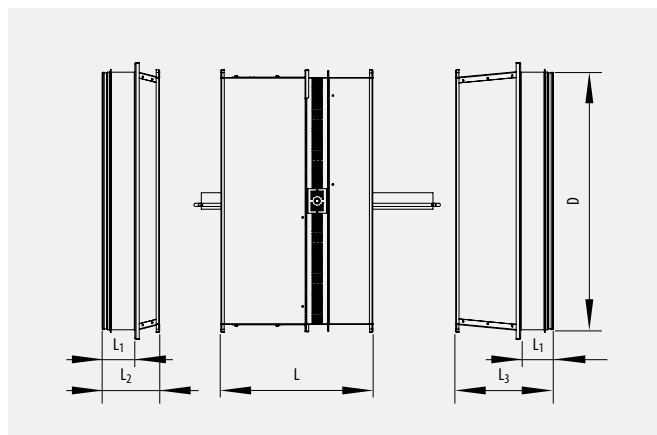
- Circular integrated connections to have an option to install the damper into airduct systems in diameters 710, 800, 900 and 1250 mm.
- Perforation used as a thermal break.
- Inspection hatch is integrated directly into the casing.
- Casing leakage class: ATC 3(acc. to EN 1751).
- Closed blade leakage class: 3 (acc. to EN 1751).
- Installation: in solid, flexible, sandwich walls and floor/ceiling, close distance.
- 24 V or 230 V electric actuator with thermoelectric tripping device for motorized dampers (UVS-M-D models).
- End position switches are integrated in actuators for motorized dampers (UVS-M-D models).
- Easy replacement of fuse element.
- Circular connection with lip seal.

### Options:

- Limit position switches available for dampers with manual mechanism (UVS-H-D dampers).
- Dampers can be equipped with actuators with ST connection plugs for simple integration in control and monitoring systems or bus networks via communication and power supply units (Belimo type BKN230-24-MOD, BKN230-24MP).
- Dampers can be supplied with platform for BKN (Belimo type BKN230-24-MOD, BKN230-24MP) communication and power supply units.
- Dampers can be supplied with BKN (Belimo type BKN230-24-MOD, BKN230-24MP) communication and power supply unit.
- FDC series controllers with power supply function (till 4 Fire Dampers) are available.

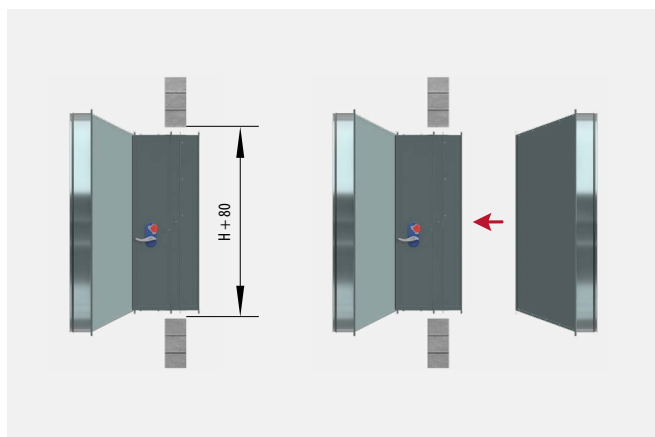
## Dimensions

| Nominal size B × H, mm | Diameter D, mm | L <sub>1</sub> , mm | L <sub>2</sub> , mm | L <sub>3</sub> , mm | The total length of the damper, mm | Weight, kg |
|------------------------|----------------|---------------------|---------------------|---------------------|------------------------------------|------------|
| 700×700                | 710            | 100                 | 207                 | 310                 | 887                                | 44         |
| 800×800                | 800            | 135                 | 261                 | 360                 | 991                                | 51         |
| 900×900                | 900            | 135                 | 309                 | 408                 | 1087                               | 59         |
| 1000×800               | 1000           | 135                 | 280                 | 377                 | 1027                               | 62         |
| 1200×1000              | 1250           | 135                 | 366                 | 465                 | 1201                               | 68         |



## Design elements

Fire dampers with circular connection UVS-D for connection diameters  $D = 1000$  and  $D = 1250$  mm, one of the circular adapters should be disconnected due to the installation features (installation opening is smaller than the overall dimensions of the adapter and it is impossible to fit through the installation opening with pre-installed adapter):



- ① The connected adapter
- ② The adapter that should be disconnected before the installation

For mortar-based installation of the damper (when installation opening is  $B_{nom}+80 \times H_{nom}+80$ ) the damper should be primarily installed into the supporting construction without the separate adapter [1] and then the second adapter can be joined [2]. The connected adapter can be secured using standard ventilation fixings such as G-clamps for rectangular airduct flange or bolts with slide C-type channels. Standard delivery with C-type channels.



G-clamp



C-type channel

## Order code for UVS-D dampers

**UVS – HEP – 1000×1000 – 1000 – HY – A4**

①

②

④

⑤

⑥

⑦

⑧

① **Product type:** UVS – Rectangular fire damper

② **Mechanism type:** H – manual spring-return mechanism with fusible link  
**No entry** – without end position switches  
 HEP – manual spring-return mechanism with fusible link and two end position switches  
 HEC – manual spring-return mechanism with fusible link and one CLOSED end position switch  
 HEO – manual spring-return mechanism with fusible link and one OPEN end position switch  
 M – automatic actuation  
 M24T – 24 V AC/DC spring-return actuator with thermoelectric tripping device  
 M230T – 230 V AC spring-return actuator with thermoelectric tripping device  
 M24TST – 24 V AC/DC spring-return actuator with thermoelectric tripping device and connection plugs for Communication and power supply unit BKN230-...

③ **Pre-installed accessories:** **No entry** – no preinstalled accessories  
 B – bracket for Communication and power supply unit BKN230-...  
 BKD – bracket with Communication and power supply unit BKN230-24-MOD  
 BKP – bracket with Communication and power supply unit BKN230-24MP

④ **Width of the damper:** nominal width in mm

⑤ **Height of the damper:** nominal height in mm

⑥ **Circular connection:** **No entry** – without circular connection  
 Diameter of the circular connection, mm

⑦ **Hygiene requirements:** **No entry** – no specific requirements to hygiene standards  
 HY – fire damper meets the VDI 6022 Sheet 1 requirements

⑧ **Material:** **No entry** – galvanized steel  
 A4 – stainless steel AISI304



## Rectangular fire dampers UVS



Rectangular UVS fire dampers are available in 2 main configurations: dampers with fuse element (UVS-H) and dampers with an electric actuator with spring return mechanism (UVS-M).

UVS-H dampers can additionally be equipped with end position switches, but UVS-M dampers – with electric power supply and communication unit.

UVS dampers can be delivered in hygienic version that meets the VDI 6022 Sheet 1 standard requirements.



### Parameters:

|                                                |                                                              |
|------------------------------------------------|--------------------------------------------------------------|
| <b>Nominal casing sizes (width) × (height)</b> | From 150 × 150 mm to 1200 × 1000 mm                          |
| <b>Length of the casing</b>                    | 370 mm                                                       |
| <b>Duct connection</b>                         | 20 mm – integrated standard flange / 30 mm – separate flange |
| <b>Weight</b>                                  | From 3,5 to 74,8 kg depending on size and specification      |
| <b>Free area</b>                               | From 0,02–1,15 m <sup>2</sup>                                |
| <b>Pressure drop of open blade</b>             | From 0–80 Pa depending on size and air velocity              |
| <b>Noise level of open blade</b>               | <45 dB(A) depending on size and air velocity                 |
| <b>Working temperature</b>                     | From -20 to +50 °C                                           |
| <b>Release (blade closing) temperature</b>     | 72 °C                                                        |
| <b>Material</b>                                | Galvanized, Stainless steel AISI304                          |
| <b>Fire resistance classification</b>          | El60 - El120                                                 |

### Highlights:

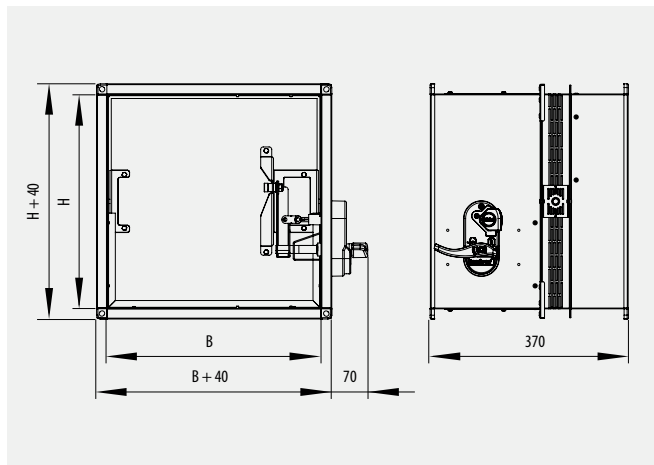
- Single-sheet metal casing.
- Perforation used as a thermal break.
- Inspection hatch is integrated directly into the casing.
- Casing leakage class: ATC 3(acc. to EN 1751).
- Closed blade leakage class: 3 (acc. to EN 1751).
- Installation: in solid, flexible, sandwich walls and floor/ceiling, close distance.
- 24V or 230 V electric actuator with thermoelectric tripping device for motorized dampers (UVS-M models).
- End position switches are integrated in actuators for motorized dampers (UVS-M models).
- Easy replacement of fuse element.
- 20 mm high integrated air duct connecting flange.

### Options:

- 30 mm high flange.
- Limit position switches available for dampers with manual mechanism (UVS-H dampers).
- Dampers can be equipped with actuators with ST connection plugs for simple integration in control and monitoring systems or bus networks via communication and power supply units (Belimo type BKN230-24-MOD, BKN230-24MP).
- Dampers can be supplied with platform for BKN (Belimo type BKN230-24-MOD, BKN230-24MP)communication and power supply units.
- Dampers can be supplied with BKN (Belimo type BKN230-24-MOD, BKN230-24MP)communication and power supply unit.
- Circular integrated connections to have an option to install the damper into airduct systems in diameters 710, 800, 900 and 1250 mm. • Installation accessories available.
- FDC series controllers with power supply function (till 4 Fire Dampers) are available.

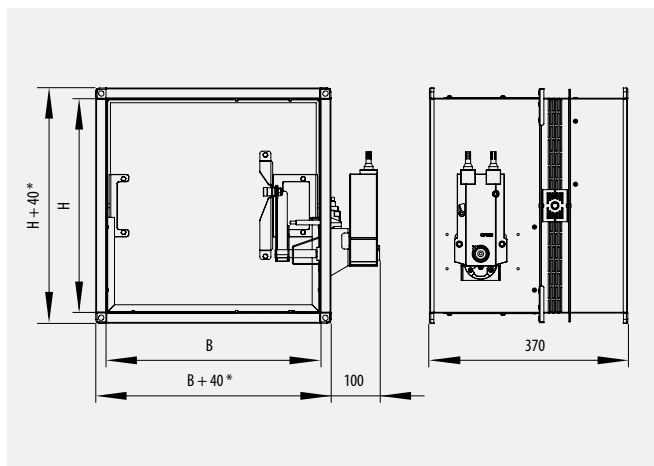
## Design and dimensions

### Rectangular fire damper with fuse element UVS-H



- ① The casing of the damper
- ② Calcium silicate blade
- ③ Mounting brackets
- ④ Perforated thermal bridge
- ⑤ Inspection hatch
- ⑥ Spring return mechanism

### Rectangular fire damper with electric actuator UVS-M



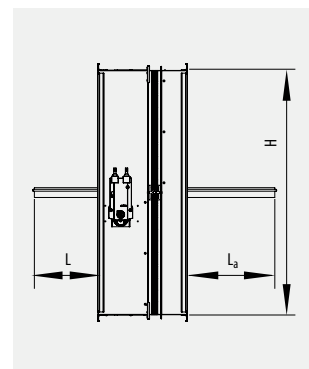
- ① The casing of the damper
- ② Calcium silicate blade
- ③ Mounting brackets
- ④ Perforated thermal bridge
- ⑤ Inspection hatch
- ⑥ Actuator BFL24-T / BFL24-T-ST / BFL230-T / BFN24-T / BFN24-T-ST / BFN230-T

\* For damper with 30 mm flange  
external sizes are B+60 and H+60

## Extend beyond the blade

Blade of the UVS fire damper exposes asymmetrically due to its displaced position in the casing:

| H, mm               | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 |
|---------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| L, mm               | -   | -   | -   | -   | 9   | 34  | 59  | 87  | 109 | 134 | 159 | 184 | 209 | 234 | 259  |
| L <sub>a</sub> , mm | 7   | 32  | 57  | 82  | 107 | 132 | 157 | 182 | 207 | 232 | 257 | 282 | 307 | 332 | 357  |



## Weight of the dampers

Weight of UVS-H (upper number) and UVS-M (bottom number), kg:

| Dimensions, mm            |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|---------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <div>B</div> <div>H</div> | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  | 750  | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 | 1150 | 1200 |
| 150                       | 3,5  | 4,5  | 5,5  | 6,5  | 7,2  | 8,0  | 8,7  | 9,1  | 9,7  | 10,0 | 10,9 | 12,0 | 12,1 | 12,2 | 12,8 | 13,4 | 13,8 | 14,2 | 14,3 | 14,5 | 15,0 | 15,4 |
|                           | 5,5  | 5,6  | 6,6  | 7,6  | 8,3  | 9,1  | 9,8  | 10,2 | 10,8 | 11,1 | 12,0 | 13,1 | 13,2 | 13,3 | 13,9 | 14,5 | 14,9 | 15,3 | 15,4 | 15,6 | 16,1 | 16,5 |
| 200                       | 4,3  | 5,5  | 6,7  | 7,9  | 8,7  | 9,8  | 10,6 | 11,1 | 11,8 | 12,2 | 13,2 | 14,6 | 14,7 | 14,8 | 15,5 | 16,3 | 16,7 | 17,2 | 17,4 | 17,6 | 18,2 | 18,7 |
|                           | 5,4  | 6,6  | 7,8  | 9,0  | 9,8  | 10,9 | 11,7 | 12,2 | 12,9 | 13,3 | 14,3 | 15,7 | 15,8 | 15,9 | 16,6 | 17,4 | 17,8 | 18,3 | 18,5 | 18,7 | 19,3 | 19,8 |
| 250                       | 5,1  | 6,5  | 8,0  | 9,4  | 10,4 | 11,6 | 12,6 | 13,2 | 14,0 | 14,5 | 15,8 | 17,4 | 17,5 | 17,7 | 18,5 | 19,4 | 19,9 | 20,6 | 20,7 | 21,0 | 21,7 | 22,3 |
|                           | 6,2  | 7,6  | 9,1  | 10,5 | 11,5 | 12,7 | 13,7 | 14,3 | 15,1 | 15,6 | 16,9 | 18,5 | 18,6 | 18,8 | 19,6 | 20,5 | 21,0 | 21,7 | 21,8 | 22,4 | 23,1 | 23,7 |
| 300                       | 5,9  | 7,6  | 9,3  | 10,9 | 12,0 | 13,5 | 14,6 | 15,4 | 16,3 | 16,8 | 18,3 | 20,2 | 20,4 | 20,5 | 21,5 | 22,6 | 23,1 | 23,9 | 24,1 | 24,4 | 25,2 | 25,9 |
|                           | 7,0  | 8,7  | 10,4 | 12,0 | 13,1 | 14,6 | 15,7 | 16,5 | 17,4 | 17,9 | 19,4 | 21,3 | 21,5 | 21,6 | 22,9 | 24,0 | 24,5 | 25,3 | 25,5 | 25,8 | 26,6 | 27,3 |
| 350                       | 6,7  | 8,6  | 10,5 | 12,4 | 13,7 | 15,4 | 16,6 | 17,5 | 18,5 | 19,2 | 20,9 | 23,0 | 23,2 | 23,4 | 24,4 | 25,7 | 26,3 | 27,2 | 27,4 | 27,8 | 28,7 | 29,5 |
|                           | 7,8  | 9,7  | 11,6 | 13,5 | 14,8 | 16,5 | 17,7 | 18,6 | 19,6 | 20,3 | 22,0 | 24,4 | 24,6 | 24,8 | 25,8 | 27,1 | 27,7 | 28,6 | 28,8 | 29,2 | 30,1 | 30,9 |
| 400                       | 7,6  | 9,7  | 11,8 | 13,9 | 15,4 | 17,3 | 18,7 | 19,6 | 20,8 | 21,5 | 23,4 | 25,8 | 26,0 | 26,2 | 27,4 | 28,8 | 29,5 | 30,5 | 30,7 | 31,2 | 32,1 | 33,1 |
|                           | 8,7  | 10,8 | 12,9 | 15,0 | 16,5 | 18,4 | 19,8 | 20,7 | 22,2 | 22,9 | 24,8 | 27,2 | 27,4 | 27,6 | 28,8 | 30,2 | 30,9 | 31,9 | 32,1 | 32,6 | 33,5 | 34,5 |
| 450                       | 8,4  | 10,7 | 13,1 | 15,5 | 17,0 | 19,1 | 20,7 | 21,7 | 23,1 | 23,8 | 25,9 | 28,6 | 28,8 | 29,1 | 30,4 | 32,0 | 32,8 | 33,8 | 34,1 | 34,6 | 35,6 | 36,7 |
|                           | 9,5  | 11,8 | 14,2 | 16,6 | 18,1 | 20,2 | 22,1 | 23,1 | 24,5 | 25,2 | 27,3 | 30,0 | 30,2 | 30,5 | 31,8 | 33,4 | 34,2 | 35,2 | 35,5 | 36,0 | 37,0 | 38,1 |
| 500                       | 9,2  | 11,8 | 14,4 | 17,0 | 18,7 | 21,0 | 22,7 | 23,9 | 25,3 | 26,2 | 28,5 | 31,4 | 31,6 | 31,9 | 33,4 | 35,1 | 36,0 | 37,1 | 37,4 | 38,0 | 39,1 | 40,3 |
|                           | 10,3 | 12,9 | 15,5 | 18,1 | 19,8 | 22,4 | 24,1 | 25,3 | 26,7 | 27,6 | 29,9 | 32,8 | 33,0 | 33,3 | 34,8 | 36,5 | 37,4 | 38,5 | 38,8 | 39,4 | 40,5 | 41,7 |
| 550                       | 10,0 | 12,8 | 15,7 | 18,5 | 20,4 | 22,9 | 24,8 | 26,0 | 27,6 | 28,5 | 31,0 | 34,2 | 34,5 | 34,8 | 36,3 | 38,2 | 39,2 | 40,4 | 40,7 | 41,4 | 42,6 | 43,9 |
|                           | 11,1 | 13,9 | 16,8 | 19,6 | 21,8 | 24,3 | 26,2 | 27,4 | 29,0 | 29,9 | 32,4 | 35,6 | 35,9 | 36,2 | 37,7 | 39,6 | 40,6 | 41,8 | 42,1 | 42,8 | 44,0 | 45,3 |
| 600                       | 10,8 | 13,9 | 17,0 | 20,0 | 22,0 | 24,7 | 26,8 | 28,1 | 29,8 | 30,9 | 33,6 | 37,0 | 37,3 | 37,6 | 39,3 | 41,4 | 42,4 | 43,7 | 44,1 | 44,8 | 46,1 | 47,5 |
|                           | 11,9 | 15,0 | 18,1 | 21,4 | 23,4 | 26,1 | 28,2 | 29,5 | 31,2 | 32,3 | 35,0 | 38,4 | 38,7 | 39,0 | 40,7 | 42,8 | 43,8 | 45,1 | 45,5 | 46,2 | 47,5 | 48,9 |
| 650                       | 11,7 | 15,0 | 18,2 | 21,5 | 23,7 | 26,6 | 28,8 | 30,3 | 32,1 | 33,2 | 36,1 | 39,8 | 40,1 | 40,5 | 42,3 | 44,5 | 45,6 | 47,0 | 47,4 | 48,1 | 49,6 | 51,1 |
|                           | 12,8 | 16,4 | 19,6 | 22,9 | 25,1 | 28,0 | 30,2 | 31,7 | 33,5 | 34,6 | 37,5 | 41,2 | 41,5 | 41,9 | 43,7 | 45,9 | 47,0 | 48,4 | 48,8 | 49,5 | 51,0 | 52,5 |
| 700                       | 12,5 | 16,0 | 19,5 | 23,0 | 25,4 | 28,5 | 30,8 | 32,4 | 34,4 | 35,5 | 38,6 | 42,5 | 42,9 | 43,3 | 45,3 | 47,6 | 48,8 | 50,4 | 50,7 | 51,5 | 53,1 | 54,7 |
|                           | 13,9 | 17,4 | 20,9 | 24,4 | 26,8 | 29,9 | 32,2 | 33,8 | 35,8 | 36,9 | 40,0 | 43,9 | 44,3 | 44,7 | 46,7 | 49,0 | 50,2 | 51,8 | 52,1 | 52,9 | 54,5 | 56,1 |
| 750                       | 13,3 | 17,1 | 20,8 | 24,5 | 27,0 | 30,4 | 32,9 | 34,5 | 36,6 | 37,9 | 41,2 | 45,3 | 45,8 | 46,2 | 48,3 | 50,8 | 52,0 | 53,7 | 54,1 | 54,9 | 56,6 | 58,2 |
|                           | 14,7 | 18,5 | 22,2 | 25,9 | 28,4 | 31,8 | 34,3 | 35,9 | 38,0 | 39,3 | 42,6 | 46,7 | 47,2 | 47,6 | 49,7 | 52,2 | 53,4 | 55,1 | 55,5 | 56,3 | 58,0 | 59,6 |
| 800                       | 13,4 | 17,1 | 20,9 | 24,7 | 27,2 | 30,5 | 33,0 | 34,7 | 36,8 | 38,0 | 41,4 | 45,6 | 46,0 | 46,4 | 48,5 | 51,0 | 52,3 | 53,9 | 54,3 | 55,2 | 56,8 | 58,5 |
|                           | 14,8 | 18,5 | 22,3 | 26,1 | 28,6 | 31,9 | 34,4 | 36,1 | 38,2 | 39,4 | 42,8 | 47,0 | 47,4 | 47,8 | 49,9 | 52,4 | 53,7 | 55,3 | 55,7 | 56,6 | 58,2 | 59,9 |
| 850                       | 14,1 | 18,1 | 22,1 | 26,1 | 28,7 | 32,2 | 34,9 | 36,7 | 38,9 | 40,2 | 43,7 | 48,1 | 48,6 | 49,0 | 51,2 | 53,9 | 55,2 | 57,0 | 57,4 | 58,3 | 60,1 | 61,8 |
|                           | 15,5 | 19,5 | 23,5 | 27,5 | 30,1 | 33,6 | 36,3 | 38,1 | 40,3 | 41,6 | 45,1 | 49,5 | 50,0 | 50,4 | 52,6 | 55,3 | 56,6 | 58,4 | 58,8 | 59,7 | 61,5 | 63,2 |
| 900                       | 15,0 | 19,2 | 23,4 | 27,6 | 30,4 | 34,1 | 36,9 | 38,8 | 41,1 | 42,5 | 46,3 | 50,9 | 51,4 | 51,9 | 54,2 | 57,0 | 57,0 | 58,4 | 60,3 | 61,7 | 63,6 | 65,4 |
|                           | 16,4 | 20,6 | 24,8 | 29,0 | 31,8 | 35,5 | 38,3 | 40,2 | 42,5 | 43,9 | 47,7 | 52,3 | 52,8 | 53,3 | 55,6 | 58,4 | 59,8 | 61,7 | 62,2 | 63,1 | 65,0 | 66,8 |
| 950                       | 15,8 | 20,2 | 24,7 | 29,1 | 32,0 | 36,0 | 38,9 | 40,9 | 43,4 | 44,9 | 48,8 | 53,7 | 54,2 | 54,7 | 57,2 | 60,1 | 61,6 | 63,6 | 64,1 | 65,1 | 67,1 | 69,0 |
|                           | 17,2 | 21,6 | 26,1 | 30,5 | 33,4 | 37,4 | 40,3 | 42,3 | 44,8 | 46,3 | 50,2 | 55,1 | 55,6 | 56,1 | 58,6 | 61,5 | 63,0 | 65,0 | 65,5 | 66,5 | 68,5 | 70,4 |
| 1000                      | 16,6 | 21,3 | 25,9 | 30,6 | 33,7 | 37,9 | 41,0 | 43,1 | 45,6 | 47,2 | 51,4 | 56,5 | 57,1 | 57,6 | 60,2 | 63,3 | 64,8 | 66,9 | 67,4 | 68,5 | 70,5 | 73,4 |
|                           | 18,0 | 22,7 | 27,3 | 32,0 | 35,1 | 39,3 | 42,4 | 44,5 | 47,0 | 48,6 | 52,8 | 57,9 | 58,5 | 59,0 | 61,6 | 64,7 | 66,2 | 68,3 | 68,8 | 69,9 | 71,9 | 74,8 |

## Free area of the damper

Free area of the UVS fire dampers calculated for fully opened blade, m<sup>2</sup>:

| Dimensions, mm                      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|-------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| <div><div>B</div><div>H</div></div> | 150  | 200  | 250  | 300  | 350  | 400  | 450  | 500  | 550  | 600  | 650  | 700  | 750  | 800  | 850  | 900  | 950  | 1000 | 1050 | 1100 | 1150 | 1200 |
| 150                                 | 0,02 | 0,02 | 0,03 | 0,03 | 0,04 | 0,04 | 0,05 | 0,06 | 0,06 | 0,07 | 0,07 | 0,08 | 0,08 | 0,09 | 0,09 | 0,10 | 0,10 | 0,11 | 0,12 | 0,12 | 0,13 | 0,13 |
| 200                                 | 0,02 | 0,03 | 0,04 | 0,05 | 0,06 | 0,06 | 0,07 | 0,08 | 0,09 | 0,10 | 0,10 | 0,11 | 0,12 | 0,13 | 0,14 | 0,14 | 0,15 | 0,16 | 0,17 | 0,18 | 0,18 | 0,19 |
| 250                                 | 0,03 | 0,04 | 0,05 | 0,06 | 0,07 | 0,08 | 0,09 | 0,11 | 0,12 | 0,13 | 0,14 | 0,15 | 0,16 | 0,17 | 0,18 | 0,19 | 0,2  | 0,21 | 0,22 | 0,23 | 0,24 | 0,25 |
| 300                                 | 0,04 | 0,05 | 0,07 | 0,08 | 0,09 | 0,10 | 0,12 | 0,13 | 0,14 | 0,16 | 0,17 | 0,18 | 0,2  | 0,21 | 0,22 | 0,23 | 0,25 | 0,26 | 0,27 | 0,29 | 0,30 | 0,31 |
| 350                                 | 0,05 | 0,06 | 0,08 | 0,09 | 0,11 | 0,12 | 0,14 | 0,16 | 0,17 | 0,19 | 0,20 | 0,22 | 0,23 | 0,25 | 0,26 | 0,28 | 0,29 | 0,31 | 0,33 | 0,34 | 0,36 | 0,37 |
| 400                                 | 0,05 | 0,07 | 0,09 | 0,11 | 0,13 | 0,14 | 0,16 | 0,18 | 0,20 | 0,22 | 0,23 | 0,25 | 0,27 | 0,29 | 0,31 | 0,32 | 0,34 | 0,36 | 0,38 | 0,40 | 0,41 | 0,43 |
| 450                                 | 0,06 | 0,08 | 0,10 | 0,12 | 0,14 | 0,16 | 0,18 | 0,21 | 0,23 | 0,25 | 0,27 | 0,29 | 0,31 | 0,33 | 0,35 | 0,37 | 0,39 | 0,41 | 0,43 | 0,45 | 0,47 | 0,49 |
| 500                                 | 0,07 | 0,09 | 0,12 | 0,14 | 0,16 | 0,18 | 0,21 | 0,23 | 0,25 | 0,28 | 0,30 | 0,32 | 0,35 | 0,37 | 0,39 | 0,41 | 0,44 | 0,46 | 0,48 | 0,51 | 0,53 | 0,55 |
| 550                                 | 0,08 | 0,10 | 0,13 | 0,15 | 0,18 | 0,20 | 0,23 | 0,26 | 0,28 | 0,31 | 0,33 | 0,36 | 0,38 | 0,41 | 0,43 | 0,46 | 0,48 | 0,51 | 0,54 | 0,56 | 0,59 | 0,61 |
| 600                                 | 0,08 | 0,11 | 0,14 | 0,17 | 0,20 | 0,22 | 0,25 | 0,28 | 0,31 | 0,34 | 0,36 | 0,39 | 0,42 | 0,45 | 0,48 | 0,50 | 0,53 | 0,56 | 0,59 | 0,62 | 0,64 | 0,67 |
| 650                                 | 0,09 | 0,12 | 0,15 | 0,18 | 0,21 | 0,24 | 0,27 | 0,31 | 0,34 | 0,37 | 0,40 | 0,43 | 0,46 | 0,49 | 0,52 | 0,55 | 0,58 | 0,61 | 0,64 | 0,67 | 0,70 | 0,73 |
| 700                                 | 0,10 | 0,13 | 0,17 | 0,20 | 0,23 | 0,26 | 0,30 | 0,33 | 0,36 | 0,40 | 0,43 | 0,46 | 0,5  | 0,53 | 0,56 | 0,59 | 0,63 | 0,66 | 0,69 | 0,73 | 0,76 | 0,79 |
| 750                                 | 0,11 | 0,14 | 0,18 | 0,21 | 0,25 | 0,28 | 0,32 | 0,36 | 0,39 | 0,43 | 0,46 | 0,50 | 0,53 | 0,57 | 0,60 | 0,64 | 0,67 | 0,71 | 0,75 | 0,78 | 0,82 | 0,85 |
| 800                                 | 0,11 | 0,15 | 0,19 | 0,23 | 0,27 | 0,30 | 0,34 | 0,38 | 0,42 | 0,46 | 0,49 | 0,53 | 0,57 | 0,61 | 0,65 | 0,68 | 0,72 | 0,76 | 0,80 | 0,84 | 0,87 | 0,91 |
| 850                                 | 0,12 | 0,16 | 0,2  | 0,24 | 0,28 | 0,32 | 0,36 | 0,41 | 0,45 | 0,49 | 0,53 | 0,57 | 0,61 | 0,65 | 0,69 | 0,73 | 0,77 | 0,81 | 0,85 | 0,89 | 0,93 | 0,97 |
| 900                                 | 0,13 | 0,17 | 0,22 | 0,26 | 0,30 | 0,34 | 0,39 | 0,43 | 0,47 | 0,52 | 0,56 | 0,60 | 0,65 | 0,69 | 0,73 | 0,77 | 0,82 | 0,86 | 0,90 | 0,95 | 0,99 | 1,03 |
| 950                                 | 0,14 | 0,18 | 0,23 | 0,27 | 0,32 | 0,36 | 0,41 | 0,46 | 0,50 | 0,55 | 0,59 | 0,64 | 0,68 | 0,73 | 0,77 | 0,82 | 0,86 | 0,91 | 0,96 | 1,00 | 1,05 | 1,09 |
| 1000                                | 0,14 | 0,19 | 0,24 | 0,29 | 0,34 | 0,38 | 0,43 | 0,48 | 0,53 | 0,58 | 0,62 | 0,67 | 0,72 | 0,77 | 0,82 | 0,86 | 0,91 | 0,96 | 1,01 | 1,06 | 1,10 | 1,15 |

## Usage of the electric actuators in UVS-M dampers

| Dimensions, mm |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| B<br>H         | 150 | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 |
| 150            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 200            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 250            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 300            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 350            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 400            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 450            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 500            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 550            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 600            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 650            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 700            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 750            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 800            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 850            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 900            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 950            |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 1000           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 1050           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 1100           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 1150           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 1200           |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |

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

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

## Pressure drop and sound power level for UVS fire dampers

Pressure drop and sound power level calculation for the certain B×H dimensions of the UVS damper is based on resistance degree  $\zeta$ , which can be identified from the table:

| Dimensions, mm |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| B<br>H         | 150  | 200  | 250  | 300  | 400  | 500  | 600  | 700  | 800  | 900  | 1000 | 1100 | 1200 |
| 150            | 0,99 | 0,99 | 0,99 | 0,89 | 0,96 | 0,95 | 0,78 | 0,76 | 0,74 | 0,72 | 0,69 | 0,69 | 0,68 |
| 200            | 0,99 | 0,99 | 0,98 | 0,87 | 0,85 | 0,84 | 0,75 | 0,73 | 0,71 | 0,69 | 0,66 | 0,65 | 0,64 |
| 250            | 0,99 | 0,95 | 0,89 | 0,85 | 0,74 | 0,73 | 0,71 | 0,66 | 0,65 | 0,64 | 0,61 | 0,59 | 0,55 |
| 300            | 0,99 | 0,93 | 0,85 | 0,8  | 0,73 | 0,71 | 0,68 | 0,65 | 0,63 | 0,62 | 0,59 | 0,56 | 0,54 |
| 400            | 0,99 | 0,92 | 0,87 | 0,79 | 0,72 | 0,7  | 0,66 | 0,64 | 0,62 | 0,61 | 0,58 | 0,55 | 0,53 |
| 500            | 0,98 | 0,91 | 0,85 | 0,78 | 0,71 | 0,69 | 0,67 | 0,63 | 0,61 | 0,59 | 0,57 | 0,54 | 0,52 |
| 600            | 0,97 | 0,9  | 0,83 | 0,76 | 0,7  | 0,68 | 0,66 | 0,62 | 0,6  | 0,58 | 0,56 | 0,53 | 0,51 |
| 700            | 0,96 | 0,89 | 0,81 | 0,75 | 0,69 | 0,67 | 0,65 | 0,61 | 0,58 | 0,55 | 0,53 | 0,5  | 0,49 |
| 800            | 0,95 | 0,88 | 0,8  | 0,73 | 0,68 | 0,66 | 0,64 | 0,6  | 0,57 | 0,54 | 0,52 | 0,49 | 0,48 |
| 900            |      |      |      |      |      |      |      |      |      |      |      | 0,47 | 0,46 |
| 1000           |      |      |      |      |      |      |      |      |      |      |      | 0,45 | 0,45 |

**Damper pressure drop (Pa) can be calculated by formula:**  $\Delta P = 0,6 \times (Q / (3600 \times B \times H))^2 \times \zeta$  where:

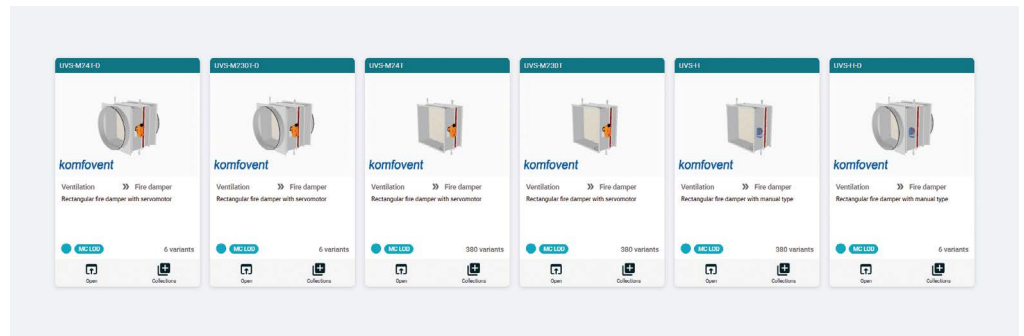
- Q – air flow, m<sup>3</sup>/h; B – damper width, m; H – damper height, m;  $\zeta$  – local pressure drop coefficient (from previous tab).

Example of pressure drop (Pa) calculation: *Damper: UVS-H-500×400. Airflow: 3000 m<sup>3</sup>/h. Formula:  $\Delta P = 0,6 \times (Q / (3600 \times B \times H))^2 \times \zeta$*

- Q – 3000 m<sup>3</sup>/h; B – 0,5 m; H – 0,4 m;  $\zeta$  – 0,7 (from previous tab)

$$\Delta P = 0,6 \times (3000 / (3600 \times 0,5 \times 0,4))^2 \times 0,7 = 7,3 \text{ Pa}$$

For pressure drop and sound pressure/power level information use MagiCAD Cloud models.



## Order code for UVS dampers

**UVS – M24T – BKD – 1200×1000 – HY – A4**

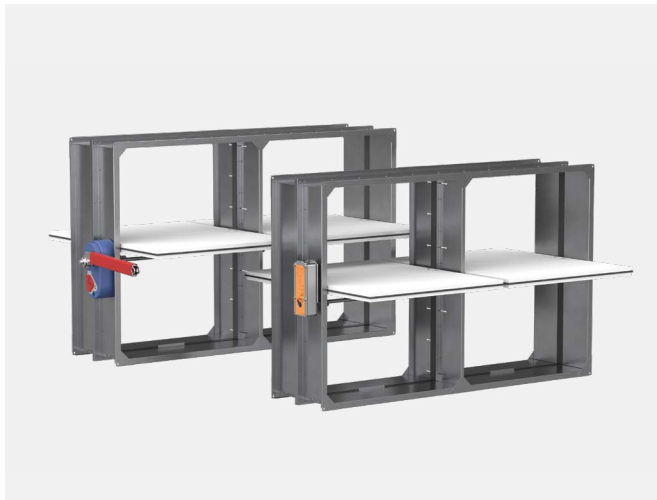
① ② ③ ④ ⑤ ⑦ ⑧

**UVS – HEP – 1000×1000 – 1000**

① ② ④ ⑤ ⑥

- ① **Product type:** UVS – Rectangular fire damper
- ② **Mechanism type:** H – manual spring-return mechanism with fusible link  
 No entry – without end position switches  
 HEP – manual spring-return mechanism with fusible link and two end position switches  
 HEC – manual spring-return mechanism with fusible link and one CLOSED end position switch  
 HEO – manual spring-return mechanism with fusible link and one OPEN end position switch  
 M – automatic actuation  
 M24T – 24 V AC/DC spring-return actuator with thermoelectric tripping device  
 M230T – 230 V AC spring-return actuator with thermoelectric tripping device  
 M24TST – 24 V AC/DC spring-return actuator with thermoelectric tripping device and connection plugs for Communication and power supply unit BKN230-...
- ③ **Pre-installed accessories:** No entry – no preinstalled accessories  
 B – bracket for Communication and power supply unit BKN230-...  
 BKD – bracket with Communication and power supply unit BKN230-24-MOD  
 BKP – bracket with Communication and power supply unit BKN230-24MP
- ④ **Width of the damper:** nominal width in mm
- ⑤ **Height of the damper:** nominal height in mm
- ⑥ **Circular connection:** No entry – without circular connection  
 Diameter of the circular connection, mm
- ⑦ **Hygiene requirements:** No entry – no specific requirements to hygiene standards  
 HY – fire damper meets the VDI 6022 Sheet 1 requirements
- ⑧ **Material:** No entry – galvanized steel  
 A4 – stainless steel AISI304

## Rectangular fire dampers with double – blade design UVSL



Rectangular fire dampers with double - blade design for large dimensions.

Rectangular UVSL fire dampers are available in 2 main configurations: dampers with fuse element (UVSL-H) and dampers with an electric actuator with spring return mechanism (UVSL-M).

UVSL-H dampers can additionally be equipped with end position switches, but UVSL-M dampers – with electric power supply and communication unit.



### Parameters:

|                                                |                                                          |
|------------------------------------------------|----------------------------------------------------------|
| <b>Nominal casing sizes (width) × (height)</b> | From 1250 × 300 mm to 1600 × 1000 mm                     |
| <b>Length of the casing</b>                    | 400 mm                                                   |
| <b>Duct connection</b>                         | 20 mm – integrated standard flange                       |
| <b>Weight</b>                                  | From 22,6 to 78,1 kg depending on size and specification |
| <b>Free area</b>                               | From 0,14–1,47 m <sup>2</sup>                            |
| <b>Pressure drop of open blade</b>             | From 0,99–70 Pa depending on size and air velocity       |
| <b>Noise level of open blade</b>               | <45 dB(A) depending on size and air velocity             |
| <b>Working temperature</b>                     | From -20 to +50 °C                                       |
| <b>Release (blade closing) temperature</b>     | 72 °C                                                    |
| <b>Material</b>                                | Galvanized                                               |
| <b>Fire resistance classification</b>          | EI60 - EI120                                             |

### Highlights:

- Exceeded damper size allow to use only one double blade damper instead of two standard sizes.
- Perforation used as a thermal break.
- Inspection available by removing thermoelectric tripping device for motorized models (UVSL-M models) and by removing fuse element/test button mechanism for manual models (UVSL-H models).
- Casing leakage class: ATC 3(acc. to EN 1751).
- Closed blade leakage class: 3 (acc. to EN 1751).
- Installation: in solid and floor/ceiling, with mortar.
- 24 V or 230 V electric actuator with thermoelectric tripping device for motorized dampers (UVS-M models).
- End position switches are integrated in actuators for motorized dampers (UVSL-M models).
- Easy replacement of fuse element.
- 20 mm high integrated air duct connecting flange.

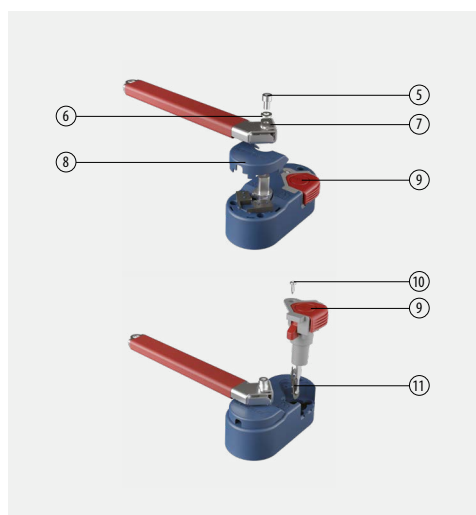
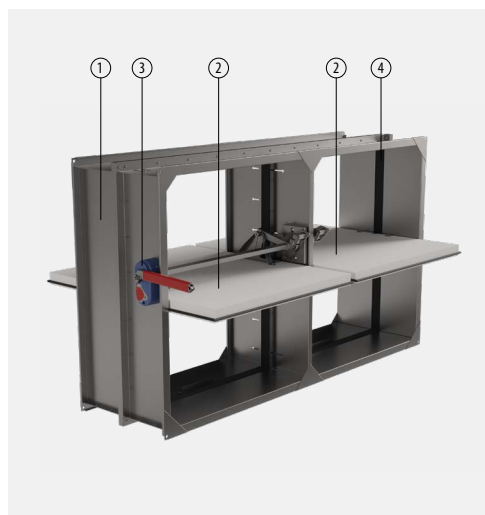
### Options:

- Limit position switches available for dampers with manual mechanism (UVSL-H dampers).
- Dampers ca be equipped with actuators with ST connection plugs for simple integration in control and monitoring systems or bus networks via communication and power supply units (Belimo type BKN230-24-MOD, BKN230-24MP).
- Dampers can be supplied with platform for BKN (Belimo type BKN230-24-MOD, BKN230-24MP)communication and power supply units.
- Dampers can be supplied with BKN (Belimo type BKN230-24-MOD, BKN230-24MP)communication and power supply unit.
- FDC series controllers with power supply function (till 4 Fire Dampers) are available.



## Rectangular fire damper UVSL-H

UVSL-H damper is equipped with two synchronously moving blades and manual spring mechanism:



- 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°

## Rectangular fire damper UVSL-M

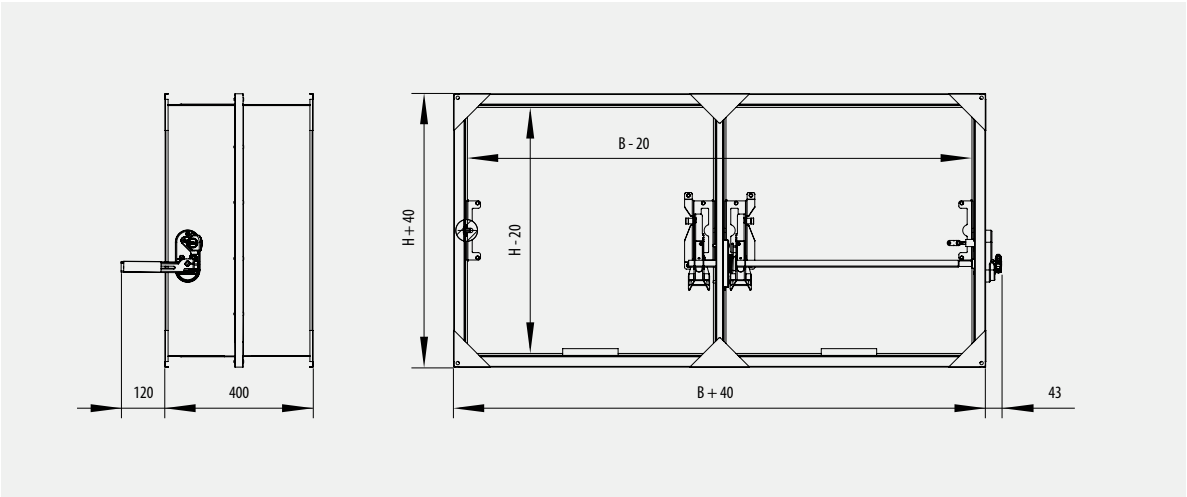
UVSL-M damper is equipped with two synchronously moving blades and spring return actuator:



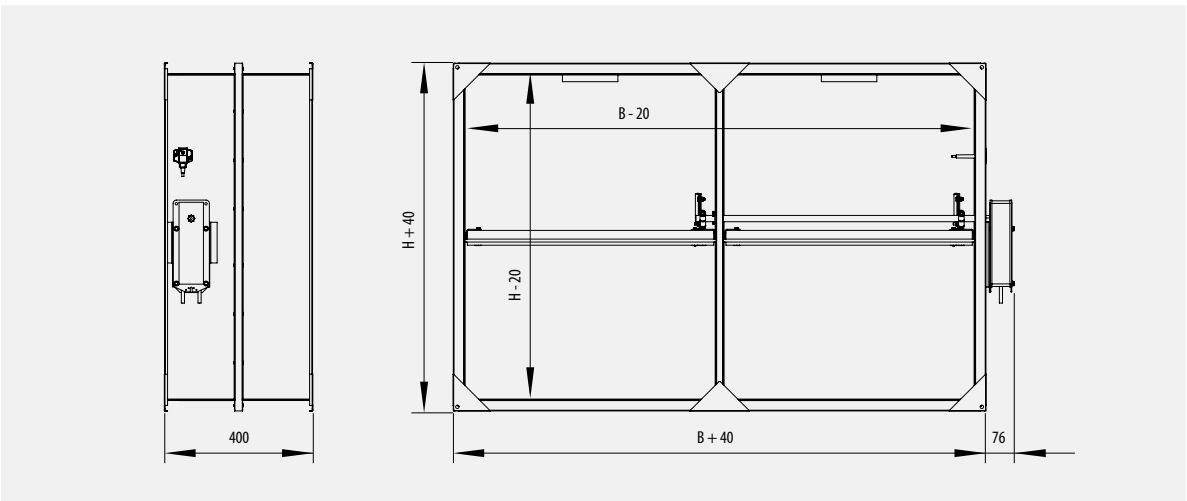
- ① Casing
- ② Blade
- ③ Spring return actuator  
BFN24-T / BFN24-T-ST  
/ BFN230-T / BF24-T /  
BF24-T-S / BF230-T
- ④ Intumescent seal
- ⑤ Thermal bridge
- ⑥ Blade rotation axle
- ⑦ Connecting flange

Dimensions

UVSL-H



UVSL-M



Usage of the electric actuators in UVSL-M dampers

| Dimensions, mm     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
|--------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| <div>H<br/>B</div> | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 |
| 1250               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 1300               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 1350               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 1400               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 1450               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 1500               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 1550               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
| 1600               |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |

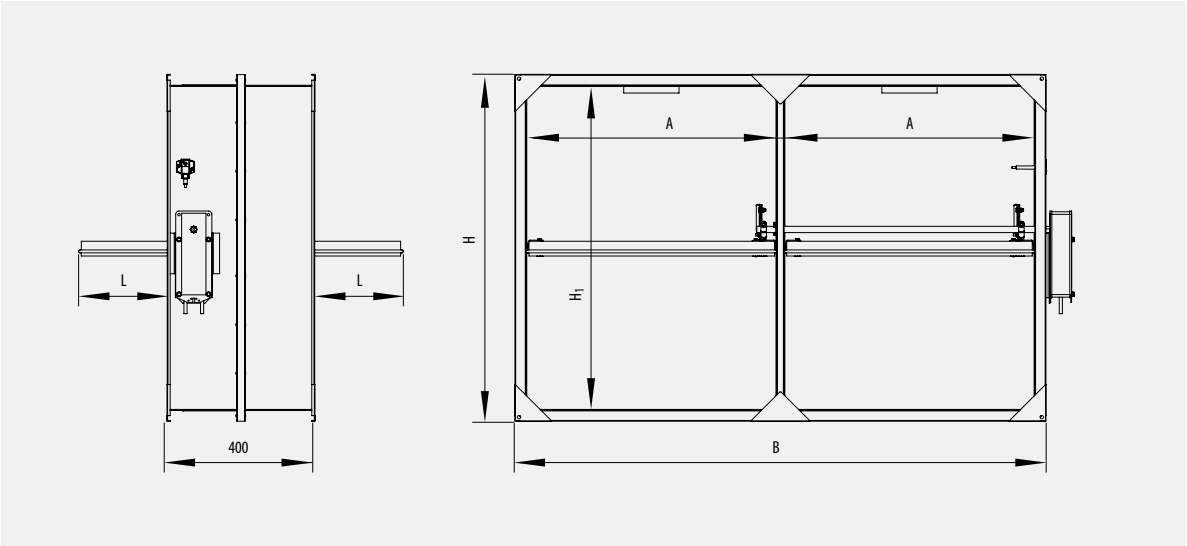
BFN24-T, BFN230-T, BFN24-T-ST

BF24-T, BF230-T, BF24-T-ST

Extend beyond the blade

UVSL fire dampers starting with H=490 mm have exposition of the blade into the duct within a certain distance:

| H <sub>nom</sub> , mm | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 |
|-----------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| H, mm                 | 340 | 390 | 440 | 490 | 540 | 590 | 640 | 690 | 740 | 790 | 840 | 890 | 940 | 990 | 1040 |
| H <sub>1</sub> , mm   | 280 | 330 | 380 | 430 | 480 | 530 | 580 | 630 | 680 | 730 | 780 | 830 | 880 | 930 | 980  |
| L, mm                 | 0   | 0   | 0   | 15  | 40  | 65  | 90  | 115 | 140 | 165 | 190 | 215 | 240 | 265 | 290  |



## Weight of the dampers

Weights for UVSL-H fire damper:

| Weight, kg                                     |      |      |      |      |      |      |      |      |
|------------------------------------------------|------|------|------|------|------|------|------|------|
| $\begin{smallmatrix} B \\ H \end{smallmatrix}$ | 1250 | 1300 | 1350 | 1400 | 1450 | 1500 | 1550 | 1600 |
| 300                                            | 29,1 | 30,3 | 30,8 | 33,7 | 34,6 | 35,4 | 36,2 | 37   |
| 350                                            | 33,6 | 34,5 | 35,4 | 36,2 | 37,1 | 38   | 38,9 | 39,8 |
| 400                                            | 35,7 | 36,8 | 37,7 | 38,7 | 39,6 | 40,6 | 41,5 | 42,5 |
| 450                                            | 38   | 39,1 | 40,1 | 41,1 | 42,1 | 43,2 | 44,1 | 45,2 |
| 500                                            | 40,2 | 41,3 | 42,4 | 43,5 | 44,6 | 45,7 | 46,7 | 47,9 |
| 550                                            | 42,4 | 43,6 | 44,7 | 45,8 | 47   | 51,4 | 52,6 | 53,7 |
| 600                                            | 44,5 | 45,8 | 50,2 | 51,5 | 52,6 | 52,3 | 53,5 | 54,7 |
| 650                                            | 50,5 | 51,8 | 50,9 | 52,3 | 53,5 | 54,8 | 56,1 | 57,3 |
| 700                                            | 50,6 | 52   | 53,2 | 54,7 | 55,9 | 57,3 | 58,6 | 60   |
| 750                                            | 52,7 | 54,1 | 55,5 | 57   | 58,4 | 59,8 | 61,2 | 62,6 |
| 800                                            | 54,9 | 56,4 | 57,8 | 59,4 | 60,8 | 62,3 | 63,7 | 65,2 |
| 850                                            | 57   | 58,4 | 60,1 | 61,8 | 63,3 | 64,8 | 66,3 | 67,9 |
| 900                                            | 59   | 60,4 | 62,4 | 64,2 | 65,7 | 67,3 | 68,8 | 70,5 |
| 950                                            | 61,1 | 62,5 | 64,7 | 66,5 | 68,2 | 69,8 | 71,4 | 73,2 |
| 1000                                           | 63,2 | 64,6 | 67   | 68,9 | 70,6 | 72,3 | 73,9 | 75,8 |

Weights for UVSL-M fire damper:

| Weight, kg                                     |      |      |      |      |      |      |      |      |
|------------------------------------------------|------|------|------|------|------|------|------|------|
| $\begin{smallmatrix} B \\ H \end{smallmatrix}$ | 1250 | 1300 | 1350 | 1400 | 1450 | 1500 | 1550 | 1600 |
| 300                                            | 29,8 | 31,0 | 31,5 | 34,4 | 35,3 | 36,1 | 36,9 | 37,7 |
| 350                                            | 34,3 | 35,2 | 36,1 | 36,9 | 37,8 | 38,7 | 39,6 | 40,5 |
| 400                                            | 36,4 | 37,5 | 38,4 | 39,4 | 40,3 | 41,3 | 42,2 | 43,2 |
| 450                                            | 38,7 | 39,8 | 40,8 | 41,8 | 42,8 | 43,9 | 44,8 | 45,9 |
| 500                                            | 40,9 | 42,0 | 43,1 | 44,2 | 45,3 | 46,4 | 47,4 | 48,6 |
| 550                                            | 43,1 | 44,3 | 45,4 | 46,5 | 47,7 | 52,1 | 53,3 | 54,4 |
| 600                                            | 45,2 | 46,5 | 50,9 | 52,2 | 53,3 | 54,6 | 55,8 | 57,0 |
| 650                                            | 51,2 | 52,5 | 53,2 | 54,6 | 55,8 | 57,1 | 58,4 | 59,6 |
| 700                                            | 52,9 | 54,3 | 55,5 | 57,0 | 58,2 | 59,6 | 60,9 | 62,3 |
| 750                                            | 55,0 | 56,4 | 57,8 | 59,3 | 60,7 | 62,1 | 63,5 | 64,9 |
| 800                                            | 57,2 | 58,7 | 60,1 | 61,7 | 63,1 | 64,6 | 66,0 | 67,5 |
| 850                                            | 59,3 | 60,7 | 62,4 | 64,1 | 65,6 | 67,1 | 68,6 | 70,2 |
| 900                                            | 61,3 | 62,7 | 64,7 | 66,5 | 68,0 | 69,6 | 71,1 | 72,8 |
| 950                                            | 63,4 | 64,8 | 67,0 | 68,8 | 70,5 | 72,1 | 73,7 | 75,5 |
| 1000                                           | 65,5 | 66,9 | 69,3 | 71,2 | 72,9 | 74,6 | 76,2 | 78,1 |

## Effective cross-section area of the dampers

Effective cross-section area for fully opened blades of the damper:

| Cross – section area A, m <sup>2</sup> |      |      |      |      |      |      |      |      |
|----------------------------------------|------|------|------|------|------|------|------|------|
| $\begin{matrix} B \\ H \end{matrix}$   | 1250 | 1300 | 1350 | 1400 | 1450 | 1500 | 1550 | 1600 |
| 300                                    | 0,29 | 0,30 | 0,31 | 0,33 | 0,34 | 0,35 | 0,36 | 0,37 |
| 350                                    | 0,35 | 0,36 | 0,38 | 0,39 | 0,41 | 0,42 | 0,44 | 0,45 |
| 400                                    | 0,41 | 0,43 | 0,44 | 0,46 | 0,48 | 0,50 | 0,51 | 0,53 |
| 450                                    | 0,47 | 0,49 | 0,51 | 0,53 | 0,55 | 0,57 | 0,59 | 0,61 |
| 500                                    | 0,53 | 0,55 | 0,58 | 0,60 | 0,62 | 0,64 | 0,66 | 0,69 |
| 550                                    | 0,59 | 0,62 | 0,64 | 0,67 | 0,69 | 0,71 | 0,74 | 0,76 |
| 600                                    | 0,65 | 0,68 | 0,71 | 0,73 | 0,76 | 0,79 | 0,81 | 0,84 |
| 650                                    | 0,71 | 0,74 | 0,77 | 0,80 | 0,83 | 0,86 | 0,89 | 0,92 |
| 700                                    | 0,77 | 0,81 | 0,84 | 0,87 | 0,90 | 0,93 | 0,97 | 1,00 |
| 750                                    | 0,83 | 0,87 | 0,90 | 0,94 | 0,97 | 1,01 | 1,04 | 1,08 |
| 800                                    | 0,89 | 0,93 | 0,97 | 1,01 | 1,04 | 1,08 | 1,12 | 1,15 |
| 850                                    | 0,96 | 0,99 | 1,03 | 1,07 | 1,11 | 1,15 | 1,19 | 1,23 |
| 900                                    | 1,02 | 1,06 | 1,10 | 1,14 | 1,18 | 1,23 | 1,27 | 1,31 |
| 950                                    | 1,08 | 1,12 | 1,17 | 1,21 | 1,25 | 1,30 | 1,34 | 1,39 |
| 1000                                   | 1,14 | 1,18 | 1,23 | 1,28 | 1,32 | 1,37 | 1,42 | 1,47 |

## Pressure drop for UVSL fire dampers

Pressure drop for the certain B×H dimensions of the UVSL damper is based on resistance degree  $\zeta$ , which can be identified from the table:

| Dimensions, mm                       |      |      |      |      |      |      |      |      |
|--------------------------------------|------|------|------|------|------|------|------|------|
| $\begin{matrix} H \\ B \end{matrix}$ | 300  | 400  | 500  | 600  | 700  | 800  | 900  | 1000 |
| 1300                                 | 0,52 | 0,51 | 0,5  | 0,49 | 0,47 | 0,46 | 0,45 | 0,44 |
| 1400                                 | 0,48 | 0,47 | 0,45 | 0,44 | 0,43 | 0,42 | 0,41 | 0,4  |
| 1500                                 | 0,47 | 0,46 | 0,43 | 0,42 | 0,4  | 0,39 | 0,38 | 0,37 |
| 1600                                 | 0,46 | 0,45 | 0,42 | 0,41 | 0,39 | 0,38 | 0,37 | 0,36 |

**Damper pressure drop (Pa) can be calculated by formula:**  $\Delta P = 0,6 \times (Q / (3600 \times B \times H))^2 \times \zeta$  where:

- Q – air flow, m<sup>3</sup>/h; B – damper width, m; H – damper height, m;  $\zeta$  – local pressure drop coefficient (from previous tab).

Example of pressure drop (Pa) calculation: *Damper: UVS-H-1500×900. Airflow: 19000 m<sup>3</sup>/h. Formula:  $\Delta P = 0,6 \times (Q / (3600 \times B \times H))^2 \times \zeta$*

- Q – 19000 m<sup>3</sup>/h; B – 1,5 m; H – 0,9 m;  $\zeta$  – 0,38 (from tab)*

$$\Delta P = 0,6 \times (19000 / (3600 \times 1,5 \times 0,9))^2 \times 0,38 = 3,5 \text{ Pa}$$

Order code for UVSL dampers

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |   |   |   |   |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|
| UVSL – M24T – BKD – 1600×1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |   |   |   |   |
| ①                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ② | ③ | ④ | ⑤ |
| UVSL – HEC – 1600×1000                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |   |   |   |   |
| ①                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | ② | ④ | ⑤ |   |
| ① <b>Product type:</b> UVSL – Rectangular fire damper                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |   |   |   |   |
| ② <b>Mechanism type:</b> H – manual spring-return mechanism with fusible link<br>No entry – without end position switches<br>HEP – manual spring-return mechanism with fusible link and two end position switches<br>HEC – manual spring-return mechanism with fusible link and one CLOSED end position switch<br>HEO – manual spring-return mechanism with fusible link and one OPEN end position switch<br>M – automatic actuation<br>M24T – 24 V AC/DC spring-return actuator with thermoelectric tripping device<br>M230T – 230 V AC spring-return actuator with thermoelectric tripping device<br>M24TST – 24 V AC/DC spring-return actuator with thermoelectric tripping device and connection plugs for Communication and power supply unit BKN230-... |   |   |   |   |
| ③ <b>Pre-installed accessories:</b> No entry – no preinstalled accessories<br>B – bracket for Communication and power supply unit BKN230-...<br>BKD – bracket with Communication and power supply unit BKN230-24-MOD<br>BKP – bracket with Communication and power supply unit BKN230-24MP                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |   |   |   |   |
| ④ <b>Width of the damper:</b> nominal width in mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |   |   |   |   |
| ⑤ <b>Height of the damper:</b> nominal height in mm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |   |   |   |   |

## Actuating mechanism detailed information

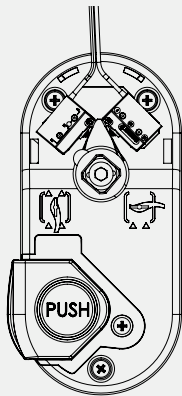
### Manual spring-return mechanism



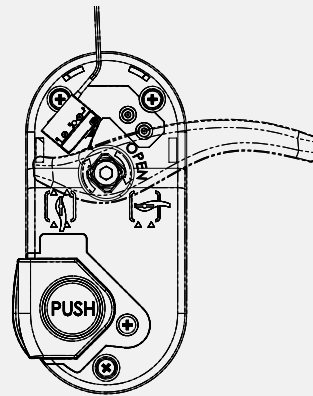
Fire dampers UVA-H, UVS-H and UVSL-H are equipped with manual spring-return mechanism, designed in an ergonomic way not only to fully cover and protect all mechanical parts against dust or debris, but also to provide a space-saving design, at the same time ensuring fast and easy replacement of the fuse element. Main operational elements of the mechanism are “push” button and end position switches, covered with a protection cap.

One or two end position switches can be used for indicating certain positions of the blade of damper depending on the purpose of use:

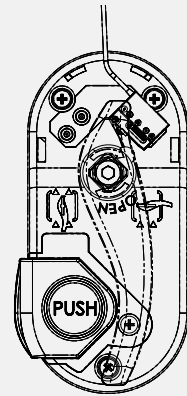
HEP with two end position switches for indicating both positions of the blade



HEC with one end position switch for indicating CLOSED position of the blade

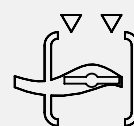


HEO with one end position switch for indicating OPEN position of the blade



#### Indicating of the blade position for UVA-H damper

After the fuse element is triggered, it is not possible to lock the blade of manual fire damper in open state again. If false triggering – maintenance works are required in this case. Position of the blade can be indicated based on symbols on the plastic mechanism casing or based on the signals from the microswitches (for UVA, UVS and UVSL fire dampers in -HEP, -HEC and -HEO versions).



— Blade closed – handle placed horizontally, no air transfer



— Blade opened – handle placed vertically, free air transfer ensured



**Testing actuating mechanism and replacing of the actuated fuse element**

Spring mechanism casing contains red testing button with PUSH label. The button should be pressed to test if the spring mechanism is functional. PUSH button and fuse element construction can be simply pulled out by unscrewing one screw for inspection and repair works. The opening in the mechanism casing can be used for internal inspection of the damper.



|                                              |                                                                                                                                                                                                  |
|----------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fire damper UVA-H,<br>UVS-H and UVSL-H       | Version with fuse element and spring return mechanism with manual winding. Triggering temperature – 72°C.                                                                                        |
| Fire damper UVA-HEP,<br>UVS-HEP and UVSL-HEP | Version with fuse element and spring return mechanism with manual winding and two end position switches 250 VAC to indicate both OPEN and CLOSED blade positions. Triggering temperature – 72°C. |
| Fire damper UVA-HEC,<br>UVS-HEC and UVSL-HEC | Version with fuse element and spring return mechanism with manual winding and one end position switch 250 VAC to indicate CLOSED blade position. Triggering temperature – 72°C.                  |
| Fire damper UVA-HEO,<br>UVS-HEO and UVSL-HEO | Version with fuse element and spring return mechanism with manual winding and one end position switch 250 VAC to indicate OPEN blade position. Triggering temperature – 72°C.                    |

---

## Electric actuators



Spring-return actuator, combined with thermoelectric tripping device BAT (72 °C), for fire and smoke dampers 90° in ventilation and air-conditioning systems. The actuator moves the damper to the operating position at the same time as tensioning the return spring. The damper is turned back to the safety position by spring energy when the supply voltage is interrupted.

The Safety Position Lock™ reliably holds the fire damper in the safety position in case of fire therefore, ensuring maximum safety.

**Thermoelectric tripping device complies with the specific requirements of the standard ISO 10294-4 and has:**

- Protected function of supply line.
- LED status indicator.
- Checking the damper function on site using the test button.

**The design of the actuator is based on the specific requirements from the European standards:**

- EN 15650 Ventilation for buildings – Fire dampers.
- EN 1366-2 Fire resistance tests on service installations (Part 2: Fire dampers).
- 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).

**Main parameters**

| Parameter                                 | BFL24-T                                    | BFL230-T                                   | BFN24-T                                    | BFN230-T                                   | BF24-TN                                    | BF230-T                                    |
|-------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|--------------------------------------------|
| Power supply                              | AC/DC 24 V 50/60 Hz                        | AC 230 V 50/60 Hz                          | AC/DC 24 V 50/60 Hz                        | AC 230 V 50/60 Hz                          | AC/DC 24 V 50/60 Hz                        | AC 230 V 50/60 Hz                          |
| Control                                   | Open / close                               | Open / close                               | Open / close                               | Open / close                               | Open / close                               | Open / close                               |
| Weight                                    | 1,1 kg                                     | 1,1 kg                                     | 1,4 kg                                     | 1,4 kg                                     | 2,8 kg                                     | 3,1 kg                                     |
| Torque (motor)                            | min. 4 Nm                                  | min. 4 Nm                                  | min. 9 Nm                                  | min. 9 Nm                                  | min. 18 Nm                                 | min. 18 Nm                                 |
| Torque (return spring)                    | min. 3 Nm                                  | min. 3 Nm                                  | min. 7 Nm                                  | min. 7 Nm                                  | min. 12 Nm                                 | min. 12 Nm                                 |
| Rotation angle                            | max. 95°                                   | max. 95°                                   | max. 95°                                   | max. 95°                                   | max. 95°                                   | max. 95°                                   |
| Normal operating temperature              | -30...55 °C                                | -30...55 °C                                | -30...55 °C                                | -30...55 °C                                | -30...50 °C                                | -30...50 °C                                |
| Power consumption in operation            | 2 W                                        | 2,6 W                                      | 4 W                                        | 5 W                                        | 7 W                                        | 8,5 W                                      |
| Servicing                                 | Maintenance-free                           | Maintenance-free                           | Maintenance-free                           | Maintenance-free                           | Maintenance-free                           | Maintenance-free                           |
| Degree of protection IEC/EN               | IP54                                       | IP54                                       | IP54                                       | IP54                                       | IP54                                       | IP54                                       |
| Mechanical interface                      | Form fit 12×12 mm, continuous hollow shaft | Form fit 12×12 mm, continuous hollow shaft | Form fit 12×12 mm, continuous hollow shaft | Form fit 12×12 mm, continuous hollow shaft | Form fit 12×12 mm, continuous hollow shaft | Form fit 12×12 mm, continuous hollow shaft |
| Thermoelectric tripping device BAT (72°C) | Yes                                        | Yes                                        | Yes                                        | Yes                                        | Yes                                        | Yes                                        |
| End position switches                     | Yes                                        | Yes                                        | Yes                                        | Yes                                        | Yes                                        | Yes                                        |

BFL24-T-ST, BFN24-T-ST, BF24-T-ST actuators are equipped with connection plugs. This allows it to be integrated into control and monitoring systems (e.g. SBS-Control) or bus networks (e.g. MP-Bus solutions) via communication and power supply units (Belimo type BKN230-24-MOD, BKN230-24MP). It is not possible to add connection plugs to BFL24-T, BFN24-T, BF24-T, BFL230-T, BFN230-T, BF230-T after delivery.

## Connection and power supply units

Dampers with BFL24-T-ST, BFN24-T-ST, BF24-T-ST actuators could optionally be equipped with a Communication and power supply unit for fire damper actuators 24 V with a Communication and power supply unit for fire damper actuators 24 V with connector **BKN230-24-MOD** for communication via BACnet MS/TP and Modbus RTU, or **BKN230-24MP** via MP-BUS / SBS communication.



### BKN230-24-MOD Unit

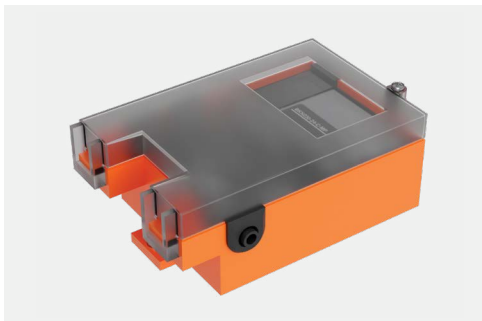
The BKN230-24-MOD is a decentralized power supply and communication unit for 24 V fire damper actuators, designed for local operation with an AC 230 V power source. The unit features an integrated LED status indicator and terminal connections for an external smoke detector and/or a thermoelectric release device.

When mounted together with a motorized fire damper, the BKN230-24-MOD provides two key functions:

- It serves as a communication interface with higher-level building automation systems via BACnet MS/TP or Modbus RTU (RS-485).
- Its built-in safety isolating transformer supplies a galvanically isolated 24 V DC power supply for the fire damper actuator.

#### Key features:

- Communication via BACnet MS/TP and Modbus RTU (RS-485).
- AC 230 V supply via power cable with Euro plug.
- Galvanically isolated 24 V DC actuator supply via plug connection.
- Direct integration of a smoke detector without additional power supply.
- Compatible with thermoelectric release devices (e.g. Belimo BAE series).
- Integrated LED status indication for quick diagnostics.



### BKN230-24MP unit

The BKN230-24MP is a communication and power supply unit designed for Top-Line fire & smoke actuators (e.g. BF24TL-T-ST) within the BELIMO MP-Bus network. It supplies the required AC 230 V mains voltage locally and interfaces with the MP-Bus for digital control of fire protection dampers.

#### Key Features:

- Nominal voltage: AC 230 V, 50/60 Hz; range 198-264 V.
- Power consumption (running, including actuator): approx. 8 W; for wire sizing approx. 10 VA with connected actuator.
- Protection class: Class II (totally insulated); Degree of protection IP40.
- Ambient temperature: -30...+50 °C in operation; non-operating: -40...+80 °C.
- Communication interface: MP-Bus digital; up to 8 MP-Bus nodes can be connected in parallel under one master controller (DDC with MP-Bus interface). Cable length up to 800 m.

#### Connections & Interfaces:

- AC 230 V supply via Euro plug.
- Plug connector for BELIMO Top-Line fire & smoke actuator.
- MP-Bus terminals for communication.
- Terminal for local smoke detector contact (potential-free) as safety input.
- Plug connection for BELIMO PC-Tool for diagnostics and parameterization.

#### Operating Behavior / Safety Features:

- Safe design ensures supply and control circuits are electrically isolated.
- If no MP-Bus commands are received, or communication fails, the damper remains in its safety position.
- LED indicator (green) for supply status.

# Controller for fire dampers or smoke exhaust dampers FDC-S

## FDC-S controller



**Fire dampers and smoke exhaust dampers are key components of a fire safety system. Monitoring their operation ensures:**

- Protection of people from harmful combustion products.
- Minimization of damage to buildings and property.
- Compliance with harmonized international safety standards.

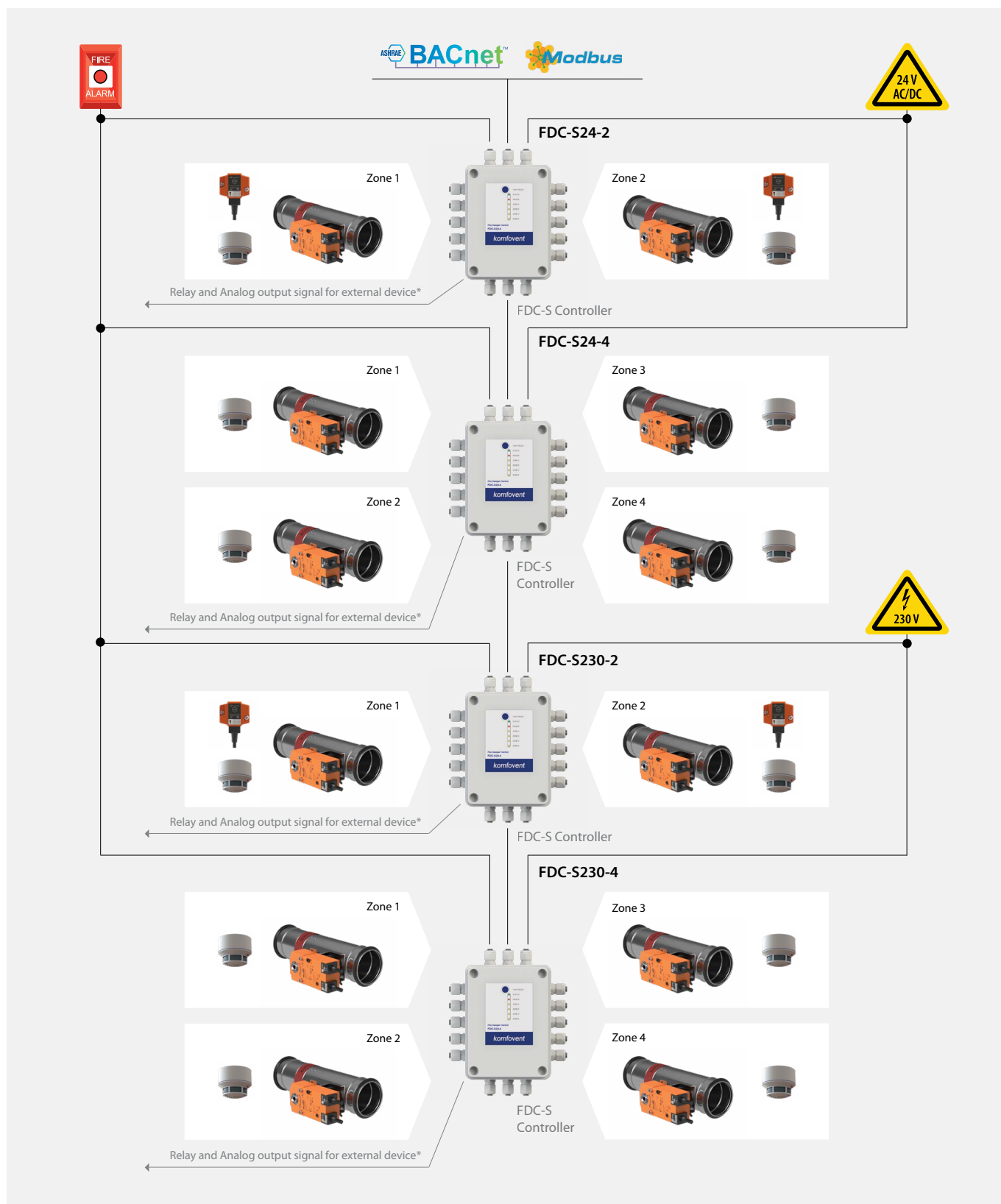
The FDC-S not only provides reliable damper control but also automatically monitors their status, detects malfunctions in a timely manner, and maintains the system's readiness for emergency situations.

FDC-S is a modern controller for automating the operation of fire dampers and smoke exhaust dampers, which is essential for ensuring a high level of safety for people, buildings, and valuable property. The controllers guarantee correct functioning of fire safety systems, preventing the spread of fire and smoke.

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                                                                                 |     |                                                                       |        |                                                                                   |     |                      |     |                             |      |                               |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|---------------------------------------------------------------------------------|-----|-----------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-----|----------------------|-----|-----------------------------|------|-------------------------------|
| KEY FEATURES           | <ul style="list-style-type: none"><li>• <b>Operating modes:</b> The controller can operate in <b>standalone mode</b> or integrate with a central BMS system via <b>Modbus RTU</b> or <b>BACnet MSTP</b> protocols.</li><li>• <b>Models and zones:</b> Available in <b>2- and 4-zone versions</b>, each zone capable of controlling one damper and one smoke exhaust device. For 2-zone models, integration with a thermoelectric tripping device is also possible.</li><li>• <b>Power supply:</b> FDC-S supports <b>24 V AC/DC</b> and <b>230 V AC</b>, supplying power to damper actuators and smoke detectors at various voltages (<b>230 V AC</b>, <b>24 V AC/DC</b>, <b>24 V DC</b>).</li></ul>                                                                                                                                             |       |                                                                                 |     |                                                                       |        |                                                                                   |     |                      |     |                             |      |                               |
| CONTROL AND MONITORING | <ul style="list-style-type: none"><li>• <b>Damper testing:</b> Damper operation can be tested manually or according to a pre-programmed schedule, with feedback transmitted via BMS, relay output, or 6 analog signal options.</li><li>• <b>Analog status signals:</b><table><tr><td>0 V</td><td>No power</td></tr><tr><td>2 V</td><td>Normal damper operation</td></tr><tr><td>4 V</td><td>Damper alarm position</td></tr><tr><td>6 V</td><td>Smoke detector alarm</td></tr><tr><td>8 V</td><td>Thermoelectric device alarm</td></tr><tr><td>10 V</td><td>More than one alarm condition</td></tr></table></li><li>• <b>Digital inputs and relay:</b> Three digital inputs for damper position inversion, test/reset, and alarm input; one relay output for controlling external devices or notifying the central fire safety system.</li></ul> | 0 V   | No power                                                                        | 2 V | Normal damper operation                                               | 4 V    | Damper alarm position                                                             | 6 V | Smoke detector alarm | 8 V | Thermoelectric device alarm | 10 V | More than one alarm condition |
| 0 V                    | No power                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |       |                                                                                 |     |                                                                       |        |                                                                                   |     |                      |     |                             |      |                               |
| 2 V                    | Normal damper operation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |       |                                                                                 |     |                                                                       |        |                                                                                   |     |                      |     |                             |      |                               |
| 4 V                    | Damper alarm position                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                 |     |                                                                       |        |                                                                                   |     |                      |     |                             |      |                               |
| 6 V                    | Smoke detector alarm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |       |                                                                                 |     |                                                                       |        |                                                                                   |     |                      |     |                             |      |                               |
| 8 V                    | Thermoelectric device alarm                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |       |                                                                                 |     |                                                                       |        |                                                                                   |     |                      |     |                             |      |                               |
| 10 V                   | More than one alarm condition                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |       |                                                                                 |     |                                                                       |        |                                                                                   |     |                      |     |                             |      |                               |
| CONTROL PANEL          | <ul style="list-style-type: none"><li>• <b>TEST/RESET buttons</b> for manually starting tests or resetting alarm conditions.</li><li>• <b>LED indicators:</b><table><tr><td>Green</td><td>operating mode (analog control, Modbus/BACnet, test mode, smoke detector reset)</td></tr><tr><td>Red</td><td>normal operation, errors, or signal from an external emergency system</td></tr><tr><td>Yellow</td><td>(per zone) normal operation, damper position change, zone alarm, or disabled zone</td></tr></table></li><li>• <b>Smoke detector support:</b> Connection for 2-wire or 4-wire smoke detectors with manual reset capability.</li></ul>                                                                                                                                                                                               | Green | operating mode (analog control, Modbus/BACnet, test mode, smoke detector reset) | Red | normal operation, errors, or signal from an external emergency system | Yellow | (per zone) normal operation, damper position change, zone alarm, or disabled zone |     |                      |     |                             |      |                               |
| Green                  | operating mode (analog control, Modbus/BACnet, test mode, smoke detector reset)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |       |                                                                                 |     |                                                                       |        |                                                                                   |     |                      |     |                             |      |                               |
| Red                    | normal operation, errors, or signal from an external emergency system                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |       |                                                                                 |     |                                                                       |        |                                                                                   |     |                      |     |                             |      |                               |
| Yellow                 | (per zone) normal operation, damper position change, zone alarm, or disabled zone                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |       |                                                                                 |     |                                                                       |        |                                                                                   |     |                      |     |                             |      |                               |
| ADDITIONAL FEATURES    | <ul style="list-style-type: none"><li>• <b>Integrated clock</b> and configurable testing intervals via external devices through Modbus.</li><li>• <b>Error time setting</b> for damper open/close testing, adjustable from <b>60–360 seconds</b>.</li><li>• <b>Ability to set damper alarm position</b> and configure BMS ID numbers from <b>1–127</b>.</li><li>• Connection via standard <b>RS485 port</b>.</li></ul>                                                                                                                                                                                                                                                                                                                                                                                                                          |       |                                                                                 |     |                                                                       |        |                                                                                   |     |                      |     |                             |      |                               |

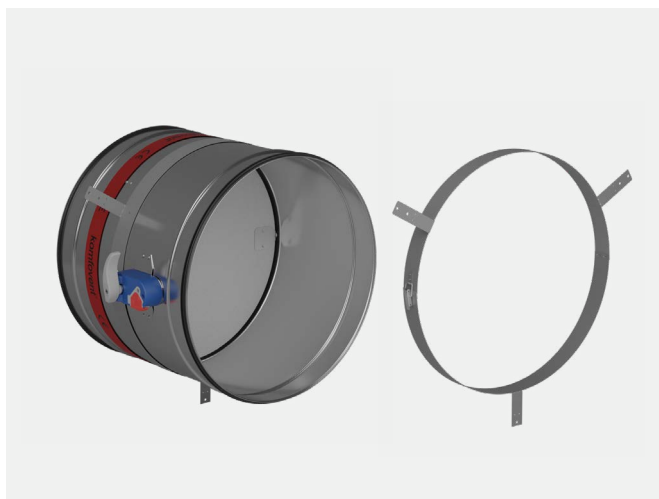
|                                                                          | FDC-S24-2                   | FDC-S230-2                  | FDC-S230/24-2               | FDC-S24-4                   | FDC-S230-4                  | FDC-S230/24-4               |
|--------------------------------------------------------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|-----------------------------|
| Selection between fire or smoke dampers                                  | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         |
| Connected dampers number                                                 | 2                           | 2                           | 2                           | 4                           | 4                           | 4                           |
| External smoke detectors number per each damper                          | 1                           | 1                           | 1                           | 1                           | 1                           | 1                           |
| External thermoelectric tripping device number per each damper           | 1                           | 1                           | 1                           | 0                           | 0                           | 0                           |
| Power input                                                              | 24 V AC/DC                  | 230 V AC                    | 230 V AC                    | 24 V AC/DC                  | 230 V AC                    | 230 V AC                    |
| Power supply for dampers motors                                          | 24 V AC/DC                  | 230 V AC                    | 24 V DC                     | 24 V AC/DC                  | 230 V AC                    | 24 V DC                     |
| Power supply for 4 wire smoke detector                                   | 24 V DC                     | 24 V DC                     | 24 V DC                     | 24 V DC                     | 24 V DC                     | 24 V DC                     |
| Digital input number (damper position inversion/ Test-Reset/Alarm input) | 3                           | 3                           | 3                           | 3                           | 3                           | 3                           |
| Relay output number                                                      | 1                           | 1                           | 1                           | 1                           | 1                           | 1                           |
| Status (0...10 V; 6 varies of status) output                             | 1                           | 1                           | 1                           | 1                           | 1                           | 1                           |
| BMS control Modbus RTU                                                   | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         |
| BMS control BACnet (MSTP)                                                | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         |
| BMS ID number range                                                      | 1–127                       | 1–127                       | 1–127                       | 1–127                       | 1–127                       | 1–127                       |
| Actuator error check time setting range                                  | 60–360 s                    | 60–360 s                    | 60–360 s                    | 60–360 s                    | 60–360 s                    | 60–360 s                    |
| Integrated clock                                                         | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         |
| Clock and test time setting                                              | By PC with Modbus interface | By PC with Modbus interface | By PC with Modbus interface | By PC with Modbus interface | By PC with Modbus interface | By PC with Modbus interface |
| Damper auto test interval setting range                                  | 1–4464 hours                | 1–4464 hours                | 1–4464 hours                | 1–4464 hours                | 1–4464 hours                | 1–4464 hours                |
| Damper alarm position selection                                          | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         |
| TEST/RESET button                                                        | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         |
| Invert damper position mode                                              | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         |
| 2 wire smoke detector connection                                         | No                          | No                          | No                          | Yes                         | Yes                         | Yes                         |
| 4 wire smoke detector connection                                         | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         |
| Faults LED indication on front panel                                     | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         |
| Modbus and BACnet communication-bus                                      | RS485                       | RS485                       | RS485                       | RS485                       | RS485                       | RS485                       |
| Smoke detection reset                                                    | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         | Yes                         |
| Power consumption (excl. external accessories)                           | <4 W                        | <4 W                        | <4 W                        | <4 W                        | <4 W                        | <4 W                        |
| Protection class                                                         | IP54                        | IP54                        | IP54                        | IP54                        | IP54                        | IP54                        |
| Connectors (spring terminals)                                            | up to 2,5 mm <sup>2</sup>   | up to 2,5 mm <sup>2</sup>   | up to 2,5 mm <sup>2</sup>   | up to 2,5 mm <sup>2</sup>   | up to 2,5 mm <sup>2</sup>   | up to 2,5 mm <sup>2</sup>   |
| Ambient operating temp.                                                  | -40...+50°C                 | -40...+50°C                 | -40...+50°C                 | -40...+50°C                 | -40...+50°C                 | -40...+50°C                 |
| Dimensions                                                               | 167×212×75 mm               | 167×212×75 mm               | 167×212×75 mm               | 171×212×75 mm               | 171×212×75 mm               | 171×212×75 mm               |

## FDC-S series functionality with BMS control



## Accessories for UVA dampers

### US wall installation tool

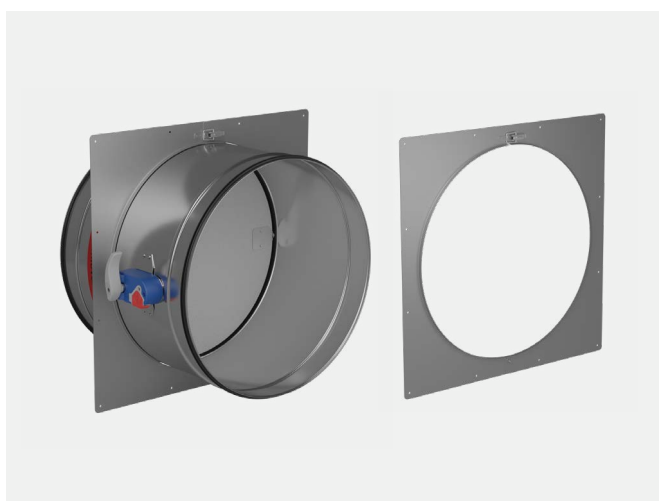


Simple collar-type installation tool with 3 plates (6×Ø6 mm holes) – designed for wall installation, for the best alignment of the fire damper in cut-out opening.

For each fire damper diameter (100, 125, 160, 200, 250, 315, 355, 400, 450, 500, 560, 630 mm) relevant size of installation holder is required. The installation holder is re-usable, it is possible not to order the mounting accessories for each fire damper that should be installed on the site.

| D <sub>nom</sub> , mm | 100  | 125  | 160  | 200  | 250  | 315  | 355  | 400  | 450  | 560  | 630  |
|-----------------------|------|------|------|------|------|------|------|------|------|------|------|
| a, mm                 | 78   | 78   | 78   | 78   | 78   | 78   | 109  | 109  | 109  | 109  | 109  |
| b, mm                 | 14,5 | 14,5 | 14,5 | 14,5 | 14,5 | 14,5 | 53   | 53   | 53   | 53   | 53   |
| m, kg                 | 0,09 | 0,11 | 0,11 | 0,12 | 0,17 | 0,56 | 0,62 | 0,69 | 0,75 | 0,83 | 0,92 |

### UL ceiling installation tool



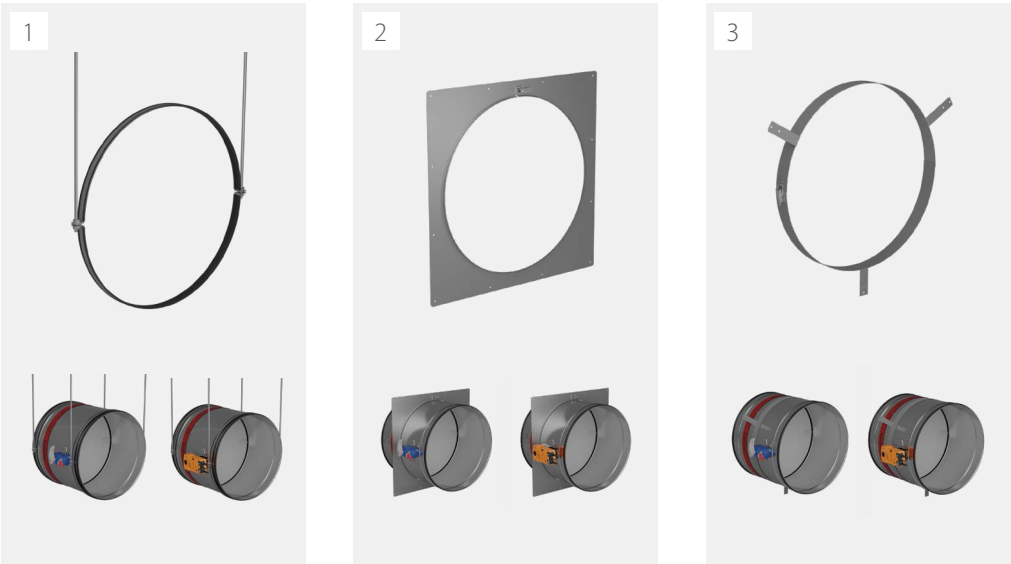
Simple overlay-type installation tool with fixing plate (12×Ø5 mm holes) – designed for ceiling installation, for the best alignment of the fire damper in cut-out opening.

For each fire damper diameter (100, 125, 160, 200, 250, 315, 355, 400, 450, 500, 560, 630 mm) relevant size of installation holder is required. The installation holder is re-usable, it is possible not to order the mounting accessories for each fire damper that should be installed on the site.

| D <sub>nom</sub> , mm | 100     | 125     | 160     | 200     | 250     | 315     | 355     | 400     | 450     | 500     | 560     | 630     |
|-----------------------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| m, kg                 | 0,28    | 0,34    | 0,38    | 0,42    | 0,52    | 0,64    | 0,82    | 0,94    | 1,08    | 1,24    | 1,40    | 1,56    |
| Outer size, mm        | 200×200 | 225×225 | 260×260 | 300×300 | 350×350 | 415×415 | 455×455 | 500×500 | 550×550 | 600×600 | 660×660 | 730×730 |



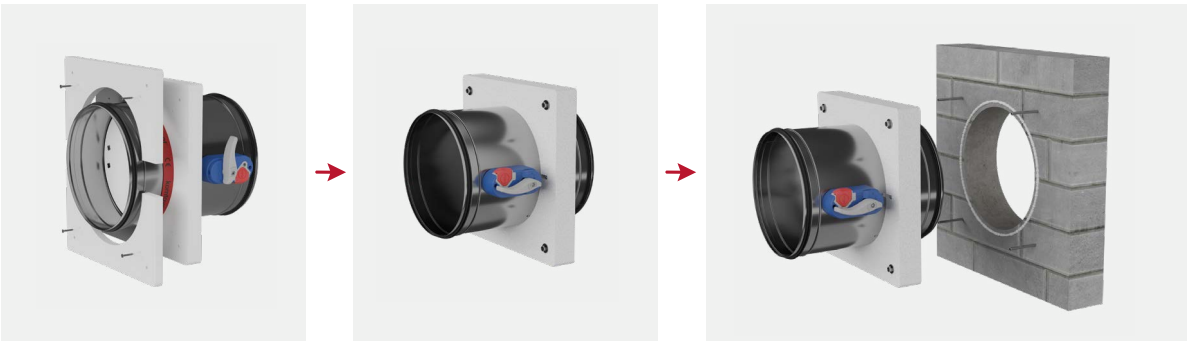
Usage of mounting accessories



Depending on the installation type suspension clamp [1] are used for tight holding of fire damper when wall mounting brackets cannot be used. Steel overlay-type installation accessory UL [2] can be used for positioning the fire damper in the cut-out and holding fire resistant insulation on the ceiling. Steel collar-type installation accessory US [3] can be used to align the fire damper in the cut-out by tightening it on the fire damper's casing and installing metal plates on a wall.

SMR dry installation kit

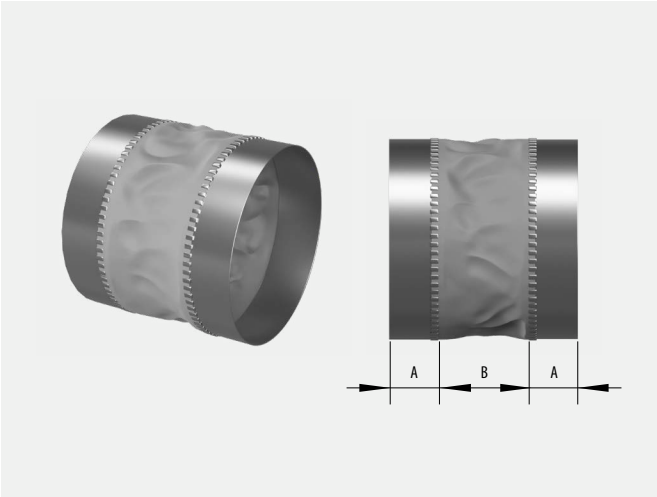
Dry installation kit SMR is available for UVA dampers in dimensions Ø100, 125, 160, 200, 315 mm. The kit can be factory-preinstalled or be mounted separately on-site. Using of the kit significantly facilitates the installation procedure making it mortarless and less labor-intensive.



| D <sub>nom</sub> , mm               | 100       | 125       | 160       | 200       | 250       | 315       |
|-------------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| SMR weight, kg                      | 2,48      | 2,92      | 3,55      | 4,31      | 5,32      | 6,72      |
| Outer dimensions of the SMR, mm     | 225 × 225 | 250 × 250 | 285 × 285 | 325 × 325 | 375 × 375 | 440 × 440 |
| Distance between mounting holes, mm | 145 × 145 | 170 × 170 | 205 × 205 | 245 × 245 | 295 × 295 | 360 × 360 |

Dry installation kit consists of four parts, when installed they form integrated shield flange around the UVA damper. Shield flange is made of heat-resistant plates, that simulate section of the wall pre-mounted on the casing of the damper.

Flexible connection JLA



Connecting airducts have to be installed in such a way as to not transfer their own load on the fire damper and ensure the integrity of the airduct system if the supporting construction collapses. Flexible connection should be installed on both sides of the supporting construction to compensate all extensions or compressions. Flexible connections can be fixed with collars or another type of clamps (type of fastening should not damage the casing of a damper). Flexible connection is made of galvanized steel and PVC coated fabric tape. The tape is welded into required diameter lengthwise. Width of the galvanized steel stripe A is 45 mm, width of the central PVC stripe B is 60 mm, total length of the flexible connection is 150 mm.

|                |     |     |     |     |     |     |     |     |     |     |     |     |
|----------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| Diameter, mm   | 100 | 125 | 160 | 200 | 250 | 315 | 355 | 400 | 450 | 500 | 560 | 630 |
| JLA weight, kg | 0,3 | 0,4 | 0,5 | 0,6 | 0,7 | 0,9 | 1,0 | 1,1 | 1,3 | 1,4 | 1,4 | 1,5 |

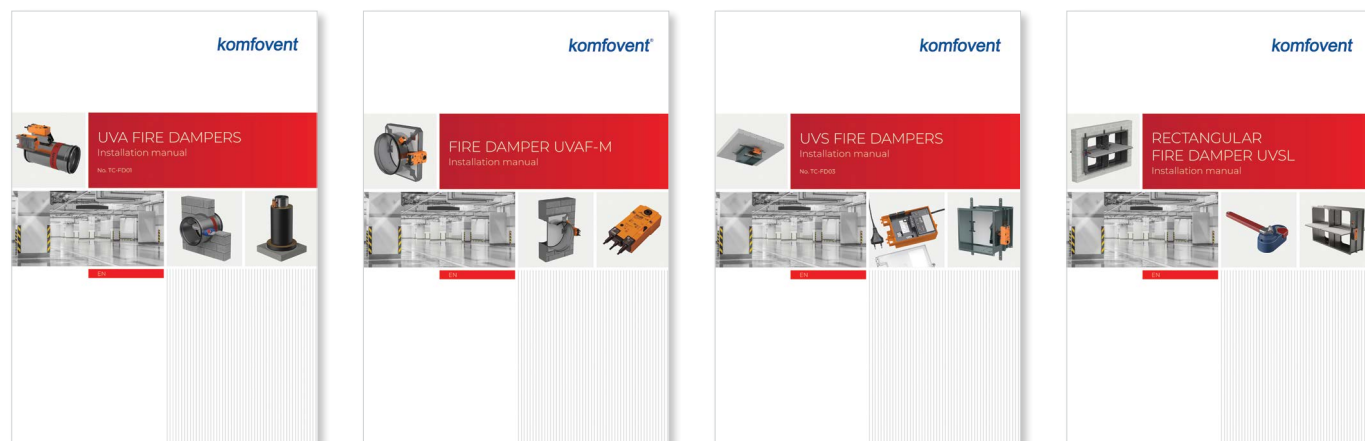
End position switches



UVA-H, UVS-H, UVS-H-D, UVSL-H fire damper can additionally be equipped with one or two end position switches and plastic switch cam for pressing the first or the second switch. Microswitches are sealed with IP67 protection and suitable for nominal currents from 10 A at 250 VAC. Mechanical operating life min. 1 000 000 actuations.

## Documentation

Detailed installation information for fire damper certified installation procedures, types of supporting constructions and sealing materials to be used is provided in manufacturer's Installation manuals available at [www.komfovent.com](http://www.komfovent.com) or by following the links:



**KOMFOVENT SIA**

Bukaisu street 1,  
LV-1004 Riga, Latvia  
+371 24 664 433  
info.lv@komfovent.com

**KOMFOVENT GMBH**

Konrad-Zuse-Str. 2a,  
42551 Velbert  
+49 0 2051 605 1180  
info@komfovent.de

**KOMFOVENT UAB**

Lentvario str. 146,  
25132 Vilnius, Lithuania  
+370 5 2300585  
info@komfovent.com

**KOMFOVENT AB**

Ögärdesvägen 12A,  
433 30 Partille, Sweden  
+46 31 487 752  
info\_se@komfovent.com

**KOMFOVENT OY**

Muuntotie 1 C1,  
01510 Vantaa, Finland  
+358 20 730 6190  
toimisto@komfovent.com

**KOMFOVENT LTD**

Unit C1  
The Waterfront, Newburn Riverside  
Newcastle upon Tyne, NE15 8NZ  
0191 429 4503  
info\_uk@komfovent.com