

**OPERATION AND  
MAINTENANCE MANUAL  
(OMM)**

**Smoke control dampers  
mcr WIP LDX**



Version mcr WIP LDX 26.01.26.1

# mcr WIP LDX Multi-blade smoke control dampers

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### CAUTION:



Risk of injury from sharp edges, sharp corners and thin sheet metal parts.  
Be careful when working.  
Wear protective gloves, safety shoes and a helmet.

Danger of pinching your finger or damaging your hand when the damper partition is in operation. Be careful.

Danger of electric shock. Do not touch live components. Work related to electrical connections may only be performed by employees with appropriate qualifications and authorizations.  
Before working on electrical equipment, disconnect the power supply

### Technical Manual designations

- Option available
- Option unavailable

### CAUTION

**All previous issues of this Technical Manual expire on the date of issue hereof. The Technical Manual does not apply to the fire dampers manufactured before its date of issue.**

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## CAUTION

The product should be stored and used in rooms where:

- there is no access to dust, gases, caustic vapors and other aggressive chemical vapors that can destroy the insulating elements and structural elements;
- the dampers are not affected by direct sunlight and UV radiation;
- the maximum relative humidity does not exceed 80% at the temperature of +20 °C;
- the ambient temperature is between - 20 °C and + 40 °C;
- there are no vibrations.



In the event that harmful conditions exist or may occur in the place of use, additional measures must be taken to protect the product.

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## 1. INTRODUCTION

The purpose of this operation and maintenance manual is to get the user acquainted with the intended use, design, the principle of operation, correct installation and operation of the product.

The manual also includes additional information about the operating conditions, maintenance and warranty conditions of the product.

**Before starting the installation and operation of the device, carefully read the contents of this Operation Manual. Failure to follow the instructions in the documentation may lead to dangerous situations, damage to property or health. The manufacturer is not liable for any damage resulting from use that is inconsistent with this documentation.**

## 2. SUBJECT

This manual concerns the entire group of multi-plane fire dampers type mcr WIP LDX. Compliance with the Manual guidelines ensures correct functioning of the device in terms of fire protection of rooms as well as safety of the system users.

## 3. DEVICE INTENDED USE

### Application

The mcr WIP LDX smoke control dampers for fire ventilation are intended for use in the following types of systems: exhaust systems, aeration systems, relief systems, duct systems, and inert gas extinguishing systems. It can be used the same in smoke control and natural smoke control systems.

Smoke control dampers for fire ventilation systems the mcr WIP LDX /V and for mixed fire ventilation systems the mcr WIP LDX /M, have one declaration of performance in accordance with the requirements of law. The marker /V and /M used in the document are trademarks used by the manufacturer. The construction and execution of the above dampers is the same regardless of the commercial mark.

The dampers cannot be operated in systems exposed to dust, except for when they are included in a special, individually developed programme of service and technical inspections.

On request (non-standard execution), dampers can be made in a "version" of stainless/acid-resistant steel. This means that the elements made of galvanized steel, used in the standard version of the damper, will be replaced with stainless/acid-resistant steel. The remaining components of the damper (e.g. actuators, pins, fire seals will be made of materials normally used for the production of the device).

### Fire resistance

The damper type mcr WIP LDX has the following fire resistance: EI120( $v_{ew} i \rightarrow o$ ) ~~S1000~~S1500 C10.000 AA multi,

E 120 ( $v_{ew} i \leftrightarrow o$ ) S 500C 10 000 AA multi, depending on the application, method and place of installation of the fire damper.

### Execution version

The damper type mcr WIP LDX can be made as rectangular dampers.

### Dimension the series

The damper type mcr WIP LDX are manufactured in the following size ranges:

Width: 300 to 1100 mm

Height: 600 to 2300 mm

Width: 350 mm

In addition to standard dimensions, it is possible to manufacture dampers with intermediate dimensions. The exception are the dampers, the height of which ends with a dimension in the range of 36-54, e.g. 136-

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154, 236-254. The maximum area of the mcr WIP LDX dampers is: 2.53 m<sup>2</sup>. The minimum area of the dampers is 0.18 m<sup>2</sup>.

## 4. DESIGN AND OPERATING PRINCIPLE

### Design

The mcr WIP LDX dampers consist of a casing with a rectangular cross-section, a movable shut-off partition in the form of blades, rotating around their own axes, and a remotely actuated release and control mechanism, which is located inside the damper. The damper casing is made of galvanized steel sheet or stainless steel sheet. The damper is equipped with a connection flange on one side. On the other, there is the so-called barefoot end. The blades of the damper are made of galvanized steel sheet or of stainless steel. The shutter blades rotate around an axis which is made of steel pins. There is a ventilation gasket on the blades in order to obtain "cold" tightness of the entire damper.

### Function

The operating principle and behaviour of the mcr WIP LDX dampers depend on their application versions::

#### **Smoke control dampers for fire ventilation systems – mcr WIP LDX**

In the normal operating position the dampers are open or close depending on the function. The dampers are closed/ opened as follows::

- remotely, by tripping an electric axial actuator without a return spring, as a result of applying the supply voltage to the actuator in the right manner.
- remotely, by tripping the electromagnetic release and a spring as a result of applying the voltage.

It is possible to manually service check the proper performance of the dampers with electrical actuators by placing a special hex wrench in the socket marked on the actuator and rotating it to set the damper isolating partition in the relevant position. Rotate the wrench slowly, smoothly and carefully. Rotating the wrench too fast or too rapidly may damage the internal actuator gear or the drive transmission system.

It is possible to manually service check the proper performance of the integrated damper with the trigger control gear by pressing the lever on the gear. The mcr T2 tester is recommended to check the proper performance of dampers with electric actuators.

### CAUTION

**Never pull directly on the damper isolation partition to open or close the device. This may result in damage of the self-locking driving gear of the damper that is not covered by warranty. It is recommended that the fire damper were opened and closed when the ventilation system is turned off.**

### Trigger control gears

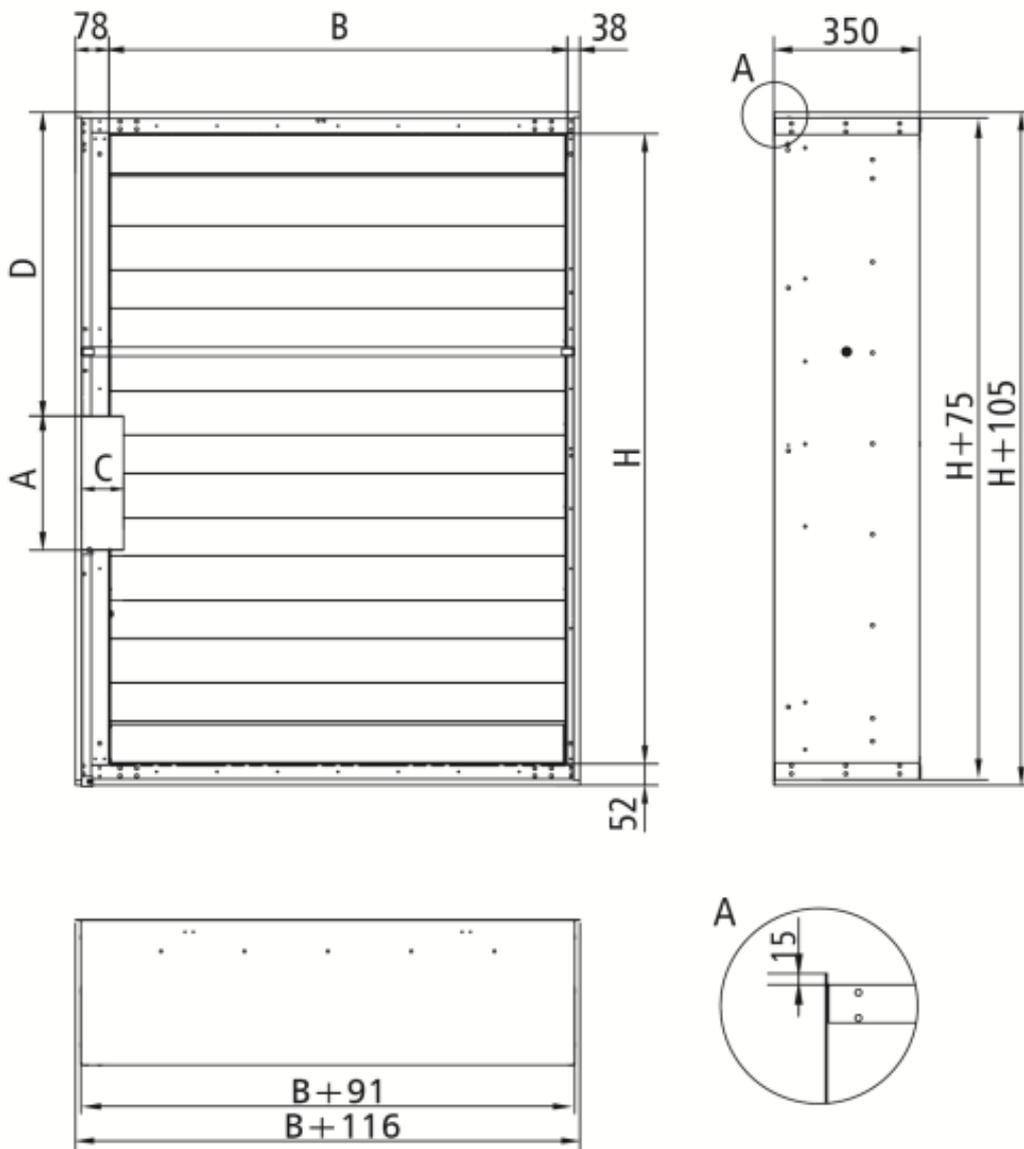
The following trigger control gears are available for the mcr WIP LDX dampers:

#### Electric actuator:

- BEE 230
- BEE 24 (-ST)
- BEN 230
- BEN 24 (-ST)
- BE 230
- BE 24 (-ST)

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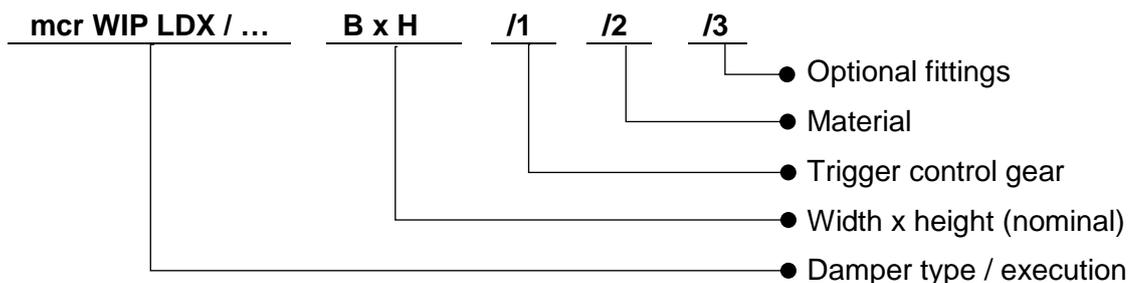
## Basic dimensions



mechanism	A	C	D
BE, BEN,	450	180	formula

For an even number of blades	For an odd number of blades
$D \text{ [mm]} = H/2 - 98,75$	$D \text{ [mm]} = H/2 - 148,75$

## 5. DEVICE IDENTIFICATION



All exact trade markings of devices are available in the Technical Catalog.

# mcr WIP LDX Multi-blade smoke control dampers

## 6. DEVICE ASSEMBLY

### CAUTION

During the assembly of the damper and installation finish, future access to the device and removal of the trigger control gear must be considered to enable servicing and inspection.

Damper type mcr WIP LDX can be installed in the following building partitions:

- walls / shafts - concrete with a thickness of 125 [mm]
- walls / shafts made of bricks or blocks with a thickness of 125 [mm]
- walls / shafts made of boards with a thickness of 125 [mm]
- ceilings with a thickness of 150 [mm]

The mcr WIP LDX dampers can also be installed in partitions with a lower fire resistance class. In the case of such installation, the fire dampers have the fire resistance equal to the fire resistance of the partition, while maintaining the smoke tightness criterion. When installing a damper in a given type of wall, the thickness of which is less than required, locally, e.g. by installing an additional board or other construction element, increase its thickness around the perimeter of the installed damper.

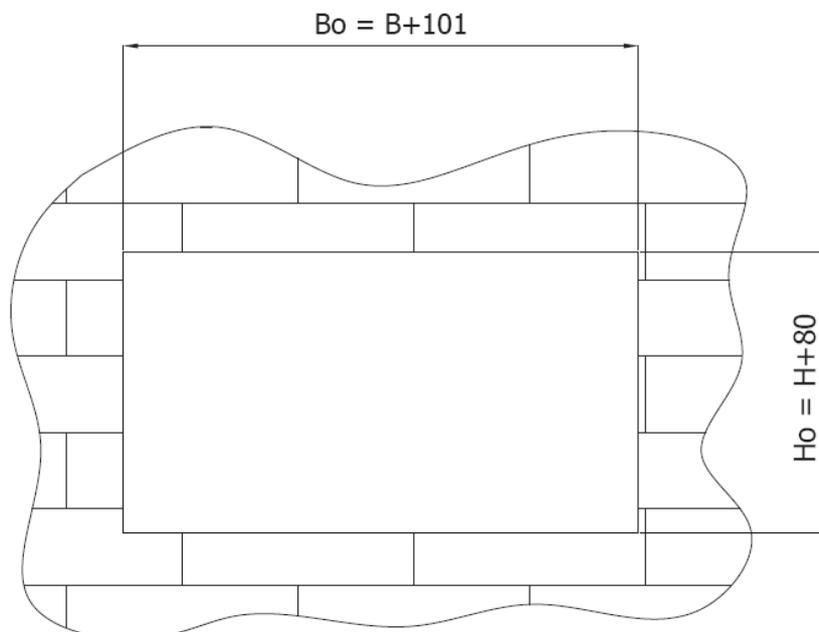
### 6.1. PRE-ASSEMBLY INSPECTION

Each damper is inspected by the manufacturer before packing and transporting. After unpacking at the customer's place, a visual inspection should be carried out for possible deformation of the casing or damage to the damper during transport. Check that the damper opens and closes properly.

### 6.2. INSTALATION OPENING

$B_o = (B+101)$  mm

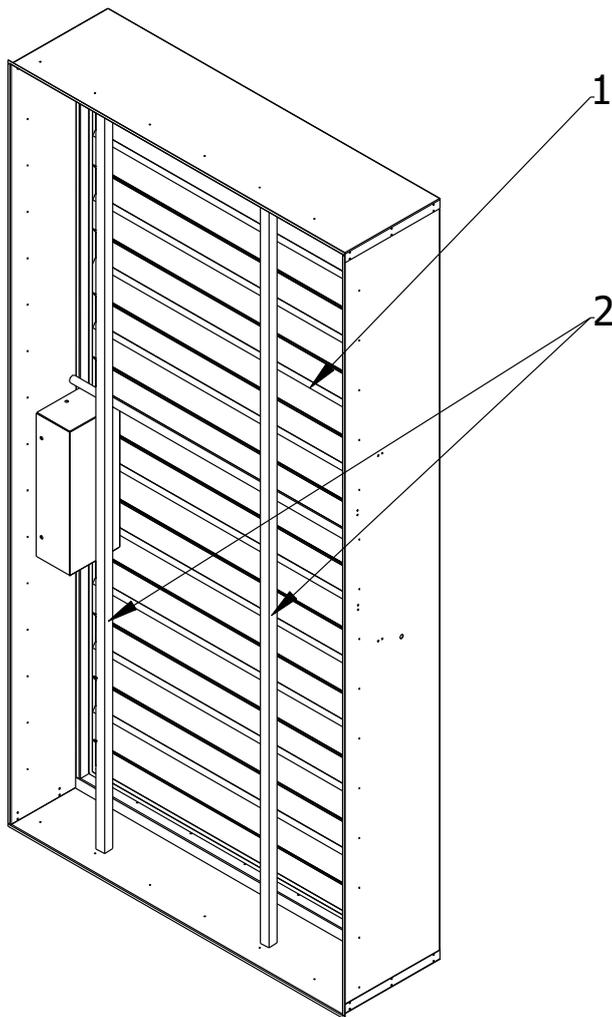
$H_o = (H+80)$  mm



**Preparation of the installation opening.**

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## 6.3. EMBEDDING / FIXING THE DAMPER



1. Damper mcr WIP LDX
2. Wooden blocks

### Protecting the damper against buckling.

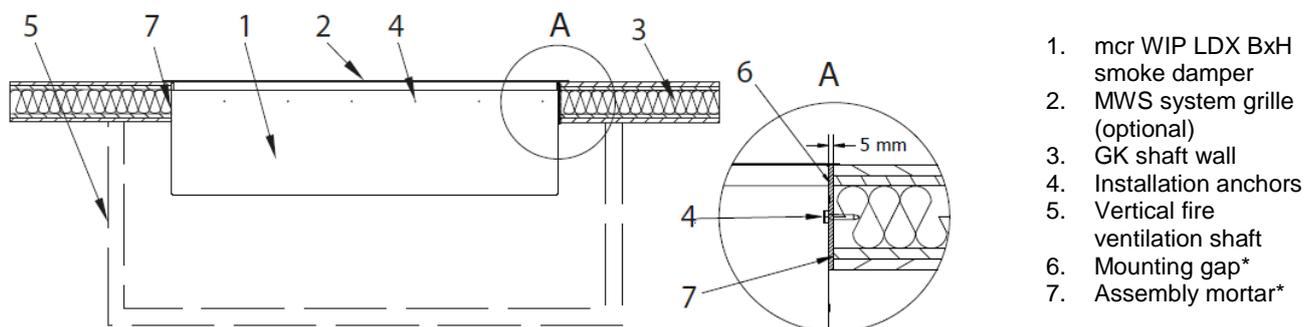
The mcr WIP LDX damper will work properly if the isolation partition rotation axis is horizontal. The trigger control gear may be located on the right or on the left hand side of the damper at any direction of air flow.

Preliminarily, place the damper in the partition (wall), insert it into the previously prepared hole up to half the thickness of the device, so that there is a mounting gap on the perimeter. Carefully coat the damper casing protruding from the partition and its flange from the outside with a suitable mortar ensuring the fire resistance of the wall and the damper. The gap between the damper housing and the wall should also be carefully filled with an appropriate mortar ensuring fire resistance of the wall and the damper, paying special attention so that it does not get on the damper actuators (release and control mechanism, partition, seals, limiters). For this purpose, before the above-mentioned works, the damper must be absolutely protected with foil or other covering material until the bricklaying and finishing works are completed. Then, insert the device into the opening until the damper flange rests on the face of the partition. Remove excess mortar, level the hatch and immobilize it. Install the expansion elements as shown in the picture. Drill holes in the fire partition (wall) through the mounting holes on the damper housing from the inside of the damper, insert steel expansion bolts with stop collars from the damper side and fix the damper on the perimeter to the partition (wall). Select the type of bolts depending on the partition (wall) in which the damper is installed. After these steps, open the damper blades manually, checking if it rotates properly (does not interfere with the elements of the housing, etc.). Close the damper blades. The partition must remain closed until the mortar/fill has set. After the mortar has set, remove the brackets and open/close the damper again in order to check its correct operation. If the damper is installed in a wall made of boards, make an appropriate internal grate of the opening, the space between the damper casing and the wall should be tightly filled

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with mineral wool with A1 non-flammability class confirmed by a certificate and with a density and thickness ensuring fire resistance not lower than the resistance of the wall in which the damper is installed. The filled space should be additionally sealed with a suitable mortar or mastic having the fire resistance required for the wall.

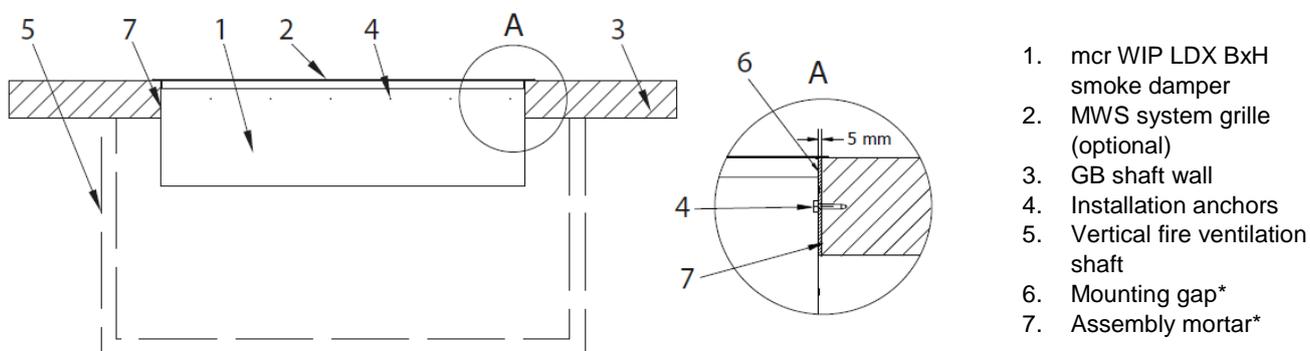
The connection of the installed damper to the ventilation duct must be made coaxially. During the installation of the damper, care must be taken not to damage the damper body, and in particular to prevent the occurrence of stresses in it. The damper cannot constitute a “supporting element” of the duct or ventilation system on which it is installed. It is not permitted to drill through the damper housing, or to screw in bolts, screws, or other elements passing through the housing into the interior of the damper at any point (this does not apply to drilling a hole for the power supply cable to the actuator). The locations intended for drilling through the housing for anchoring to the supporting structure are marked (holes in the sheet metal housing). After connecting the ventilation duct, the correct operation of the damper must be checked again.



1. mcr WIP LDX BxH smoke damper
2. MWS system grille (optional)
3. GK shaft wall
4. Installation anchors
5. Vertical fire ventilation shaft
6. Mounting gap\*
7. Assembly mortar\*

\* The installation gap between the wall and the damper must be sealed with a material (installation mortar) that ensures the appropriate fire resistance rating.

## Damper installation in light walls (plasterboard).

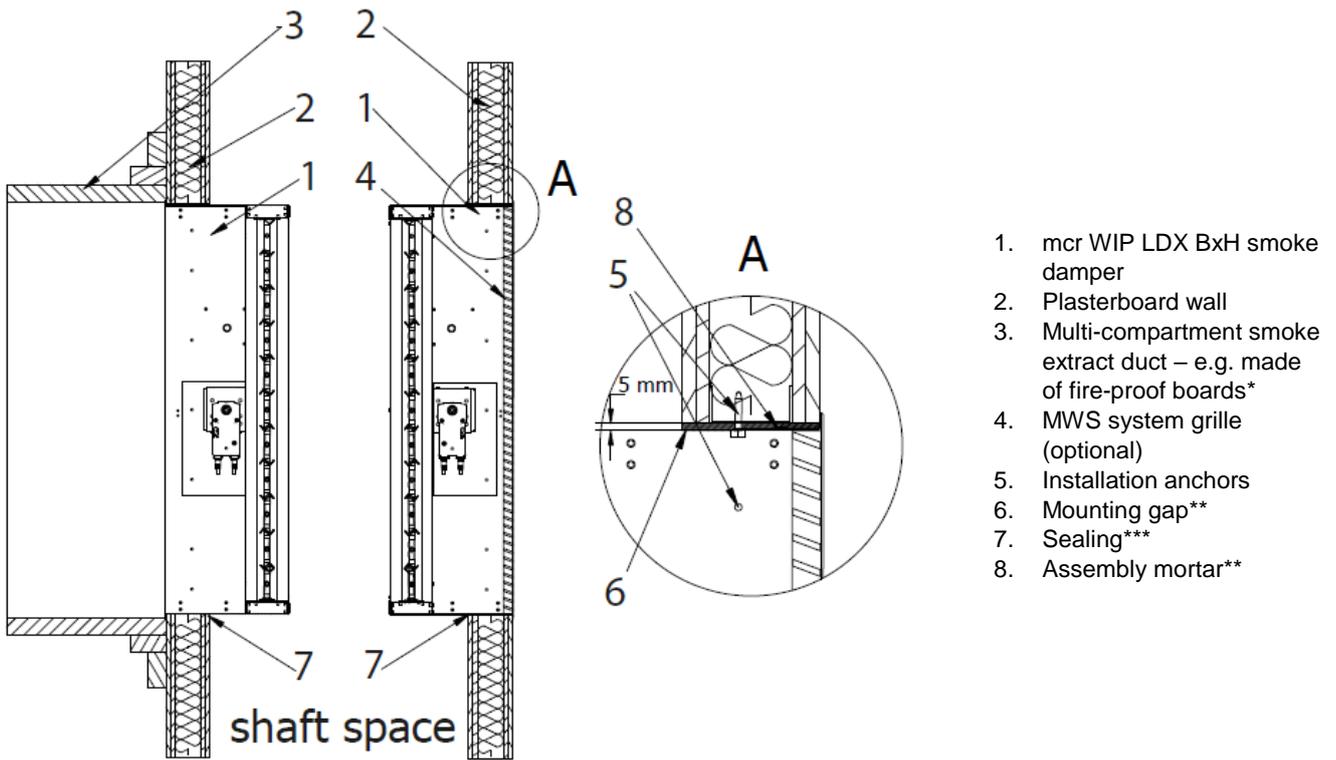


1. mcr WIP LDX BxH smoke damper
2. MWS system grille (optional)
3. GB shaft wall
4. Installation anchors
5. Vertical fire ventilation shaft
6. Mounting gap\*
7. Assembly mortar\*

\* The installation gap between the wall and the damper must be sealed with a material (installation mortar) that ensures the appropriate fire resistance rating.

## Damper installation in solid walls.

# mcr WIP LDX Multi-blade smoke control dampers

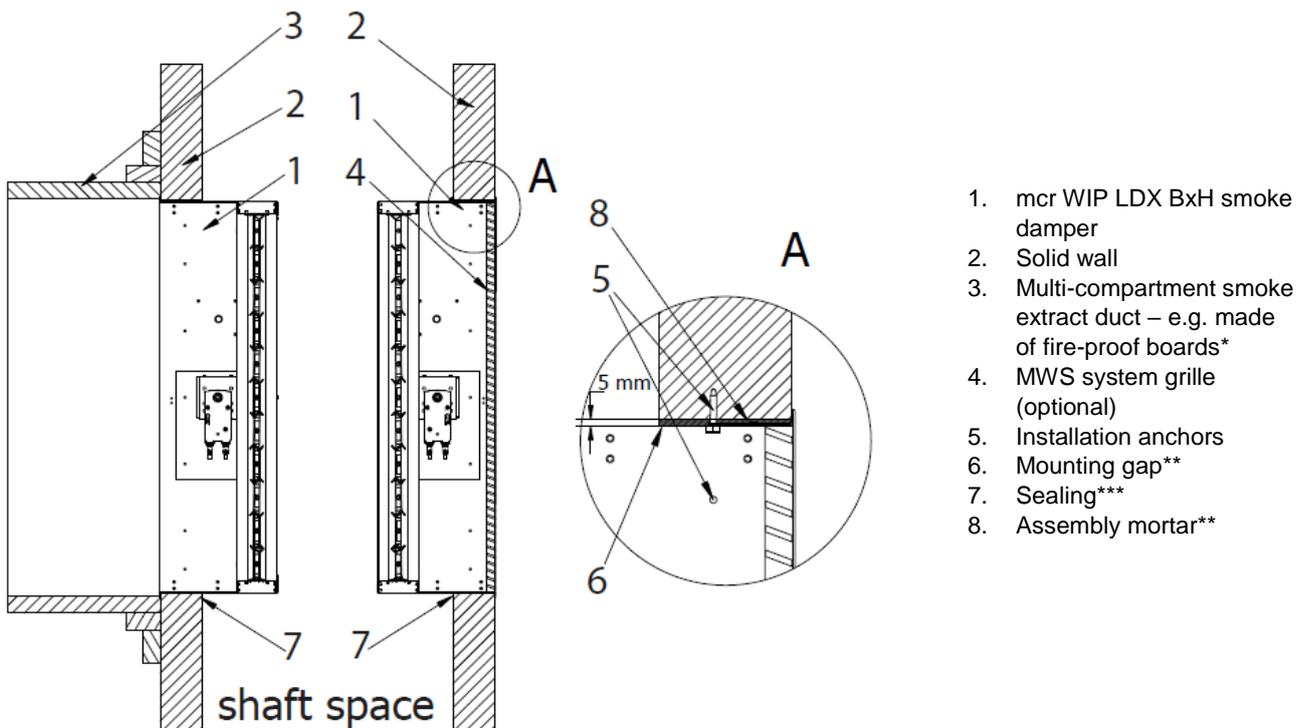


\* Smoke extraction ducts should be made in accordance with the ducts manufacturer's guidelines. The ducts must have an adequate fire resistance rating in accordance with the fire resistance rating provided for the entire solution. Seal all connections between the damper, wall and the ducts with the appropriate grout/glue/gaskets, ensuring that the fire resistance rating is maintained. A masking grille may terminate the system.

\*\* The installation gap between the wall and the damper must be sealed with a material (installation mortar) that ensures the appropriate fire resistance rating.

\*\*\* The seal between the lower edge of the damper and the wall must be made using a material (installation mortar) that ensures the appropriate fire resistance rating.

## Damper installation in light walls (plasterboard) with a multi-compartment horizontal ducts and grille.



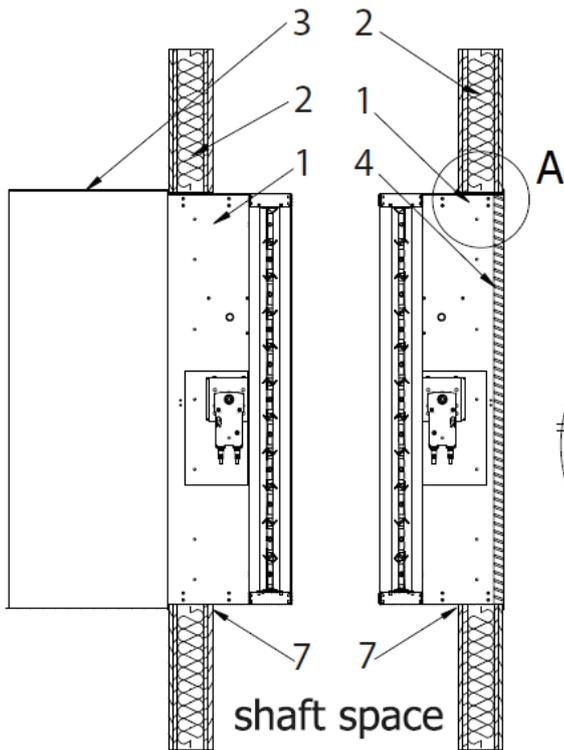
\* Smoke extraction ducts should be made in accordance with the ducts manufacturer's guidelines. The ducts must have an adequate fire resistance rating in accordance with the fire resistance rating provided for the entire solution. Seal all connections between the damper, wall and the ducts with the appropriate grout/glue/gaskets, ensuring that the fire resistance rating is maintained. A masking grille may terminate the system.

\*\* The installation gap between the wall and the damper must be sealed with a material (installation mortar) that ensures the appropriate fire resistance rating.

\*\*\* The seal between the lower edge of the damper and the wall must be made using a material (installation mortar) that ensures the appropriate fire resistance rating.

## Damper installation in solid walls with a multi-compartment horizontal ducts and grille.

# mcr WIP LDX Multi-blade smoke control dampers



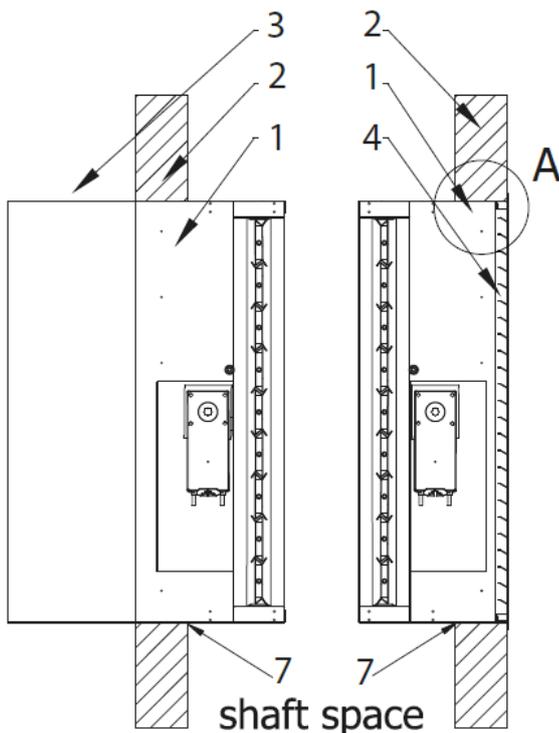
1. mcr WIP LDX BxH smoke damper
2. Plasterboard wall
3. Single-compartment smoke extract duct – e.g. made of metal sheets\*
4. MWS system grille (optional)
5. Installation anchors
6. Mounting gap\*\*
7. Sealing\*\*\*
8. Assembly mortar\*\*

\* Smoke extraction ducts should be made in accordance with the ducts manufacturer's guidelines. The ducts must have an adequate fire resistance rating in accordance with the fire resistance rating provided for the entire solution. Seal all connections between the damper, wall and the ducts with the appropriate grout/glue/gaskets, ensuring that the fire resistance rating is maintained. A masking grille may terminate the system.

\*\* The installation gap between the wall and the damper must be sealed with a material (installation mortar) that ensures the appropriate fire resistance rating.

\*\*\* The seal between the lower edge of the damper and the wall must be made using a material (installation mortar) that ensures the appropriate fire resistance rating.

## Damper installation in light walls (plasterboard) with a single-compartment horizontal ducts and grille.



1. mcr WIP LDX BxH smoke damper
2. Solid wall
3. Single-compartment smoke extract duct – e.g. made of fire-proof boards
4. MWS system grille (optional)
5. Installation anchors
6. Mounting gap
7. Sealing
8. Assembly mortar

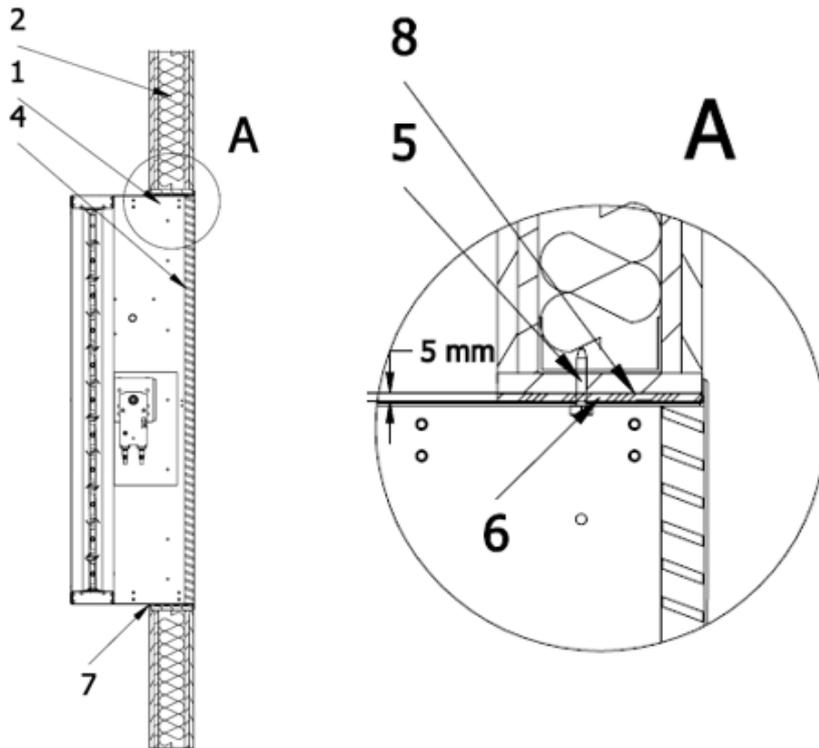
\* Smoke extraction ducts should be made in accordance with the ducts manufacturer's guidelines. The ducts must have an adequate fire resistance rating in accordance with the fire resistance rating provided for the entire solution. Seal all connections between the damper, wall and the ducts with the appropriate grout/glue/gaskets, ensuring that the fire resistance rating is maintained. A masking grille may terminate the system.

\*\* The installation gap between the wall and the damper must be sealed with a material (installation mortar) that ensures the appropriate fire resistance rating.

\*\*\* The seal between the lower edge of the damper and the wall must be made using a material (installation mortar) that ensures the appropriate fire resistance rating.

## Damper installation in solid walls with a single-compartment horizontal ducts and grille.

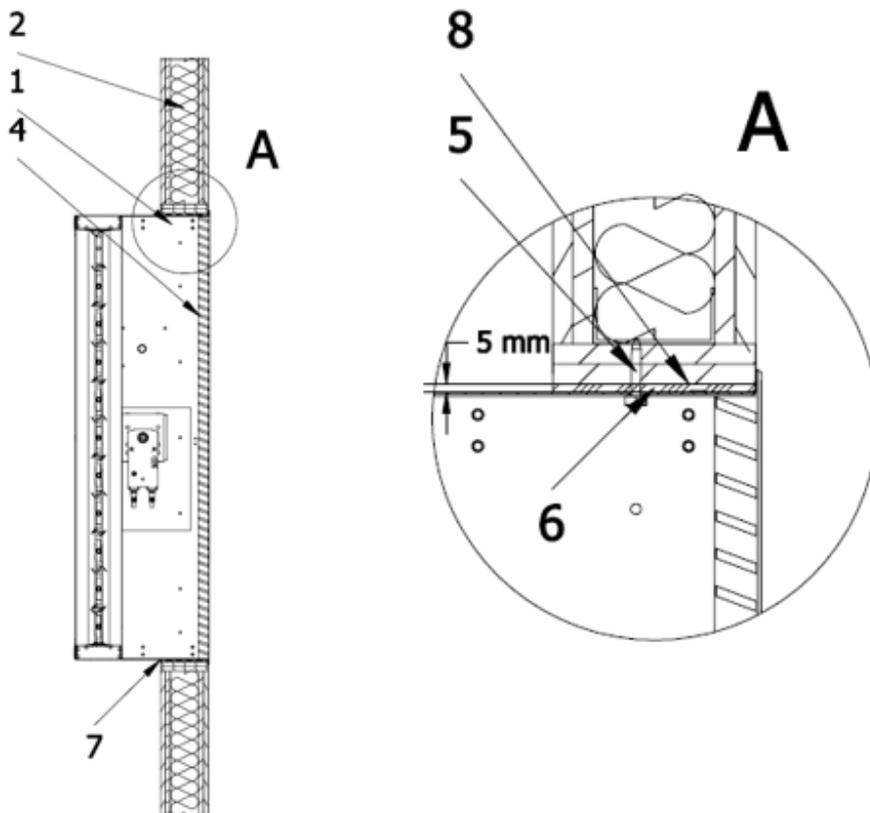
# mcr WIP LDX Multi-blade smoke control dampers



1. mcr WIP LDX BxH smoke damper
2. Plasterboard wall.
4. MWS system grille (optional)
5. Installation anchors
6. Mounting gap
7. Sealing
8. Plasterboard

\* one layer of board on the perimeter of the damper, on the thickness of the plasterboard, thickness and density of the board the same as the plasterboard of the plasterboard  
 \*\* The mounting gap between the wall and the damper must be sealing with a material (assembly mortar) ensuring the appropriate fire resistance class.

## Example of installation in a plasterboard wall using plasterboard as infill

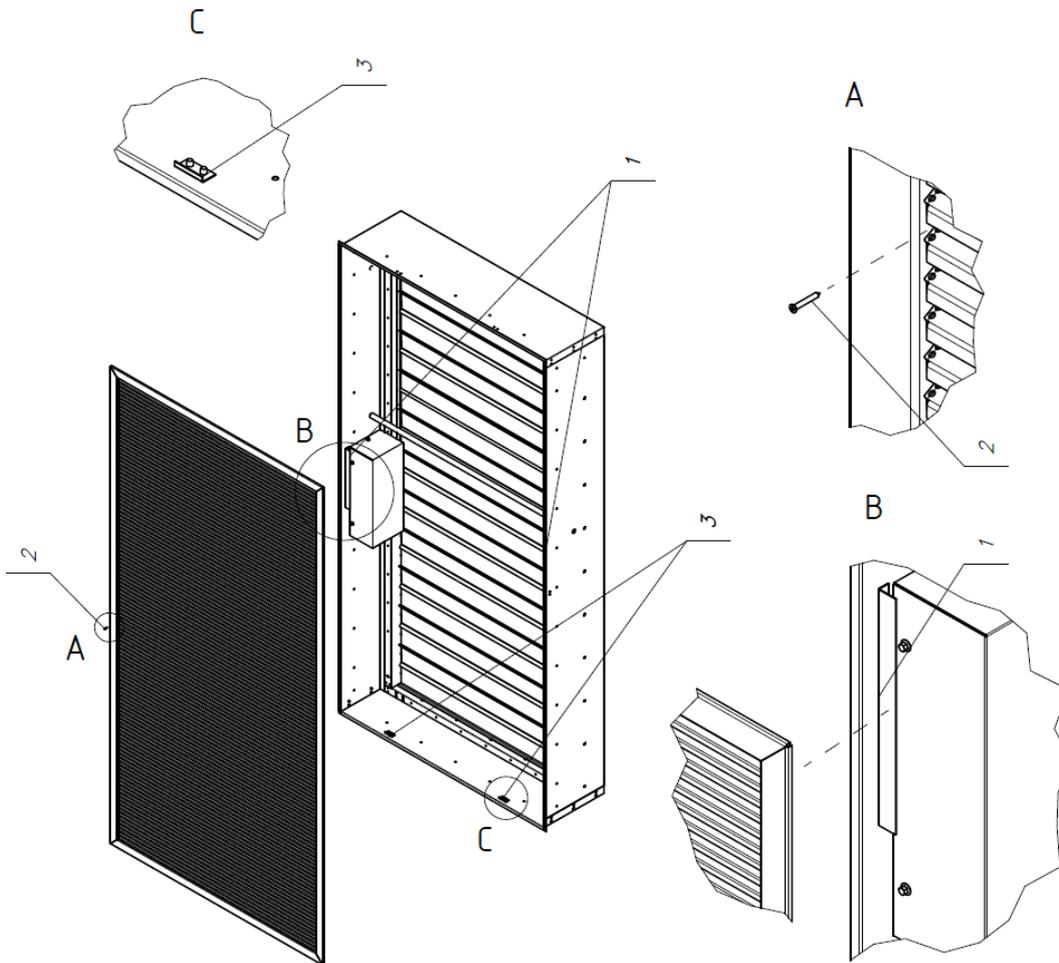
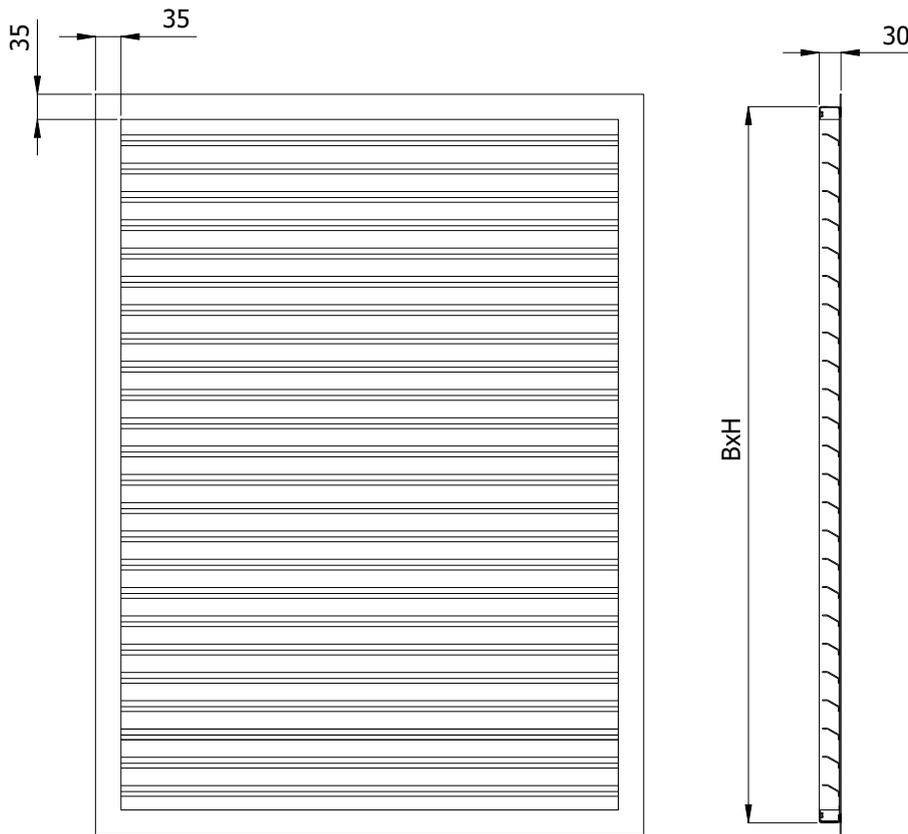


1. mcr WIP LDX BxH smoke damper
2. Plasterboard wall.
4. MWS system grille (optional)
5. Installation anchors
6. Mounting gap
7. Sealing
8. Plasterboard

\* one layer of board on the perimeter of the damper, on the thickness of the plasterboard, thickness and density of the board the same as the plasterboard of the plasterboard  
 \*\* The mounting gap between the wall and the damper must be sealing with a material (assembly mortar) ensuring the appropriate fire resistance class.

## Example of installation in a plasterboard wall using plasterboard as infill

# mcr WIP LDX Multi-blade smoke control dampers



1. Vertical mounting bracket
2. Fixing screw
3. Horizontal mounting bracket

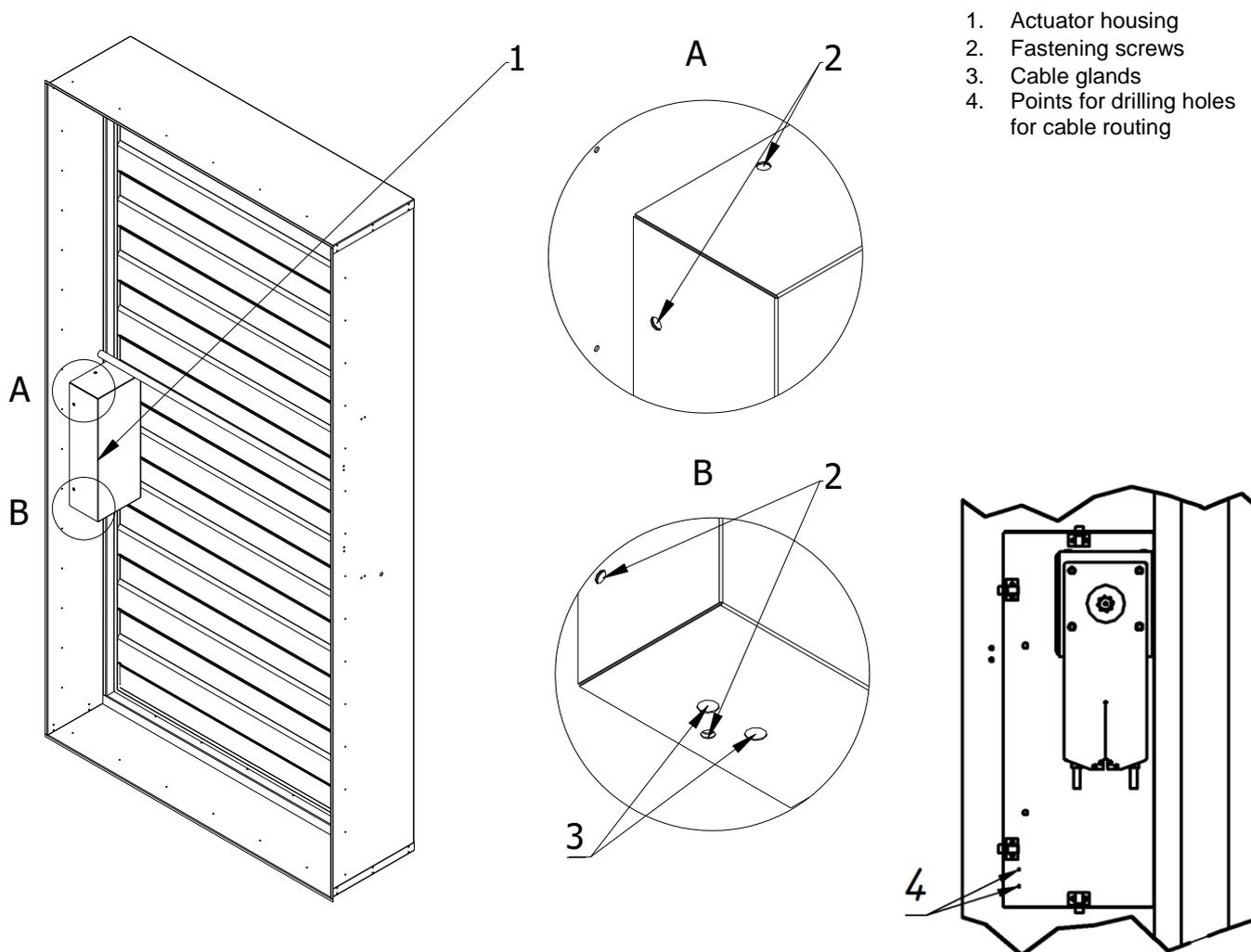
# mcr WIP LDX Multi-blade smoke control dampers

In order to install the grille to the damper, guide the screws through the blades of the grille to the vertical mounting bracket. Mounting brackets are located around the entire internal sides of the damper casing. The MWS cover grille can be delivered as a system grate by the damper manufacturer. The solution of system masking grilles is dedicated in particular to utility spaces with high architectural and utility requirements. With wall thicknesses greater than 125mm, you can use system grilles and non-system grilles mounted directly to the wall.

## 6.4. ELECTRICAL CONNECTION

With the fire damper properly installed and embedded connect the electrical system wiring to the fire damper, if the device features controls or other parts that require electric power supply. The following shows the connection diagrams and basic electrical data for the trigger control gears supplied with the mcr WIP LDX dampers.

The actuator is located inside the damper in a metal actuator housing. For the electrical connection of the actuator, a hole of appropriate diameter must be drilled in the damper housing in such a way as not to damage or block the damper blades. The location of the hole is provided by the damper manufacturer under the actuator housing box, as shown in the drawing below. Next, the electrical wires must be led inside the damper and the actuator housing must be opened by unscrewing the screws. The wires should be routed through the openings shown in the drawing below into the interior of the actuator box. Care must be taken to properly protect the hole against damage to the cable during installation and during subsequent operation. It is recommended that the actuator wires be connected to the electrical installation using ceramic terminal blocks or other high-temperature-resistant solutions.



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## Electric actuators – electrical specification

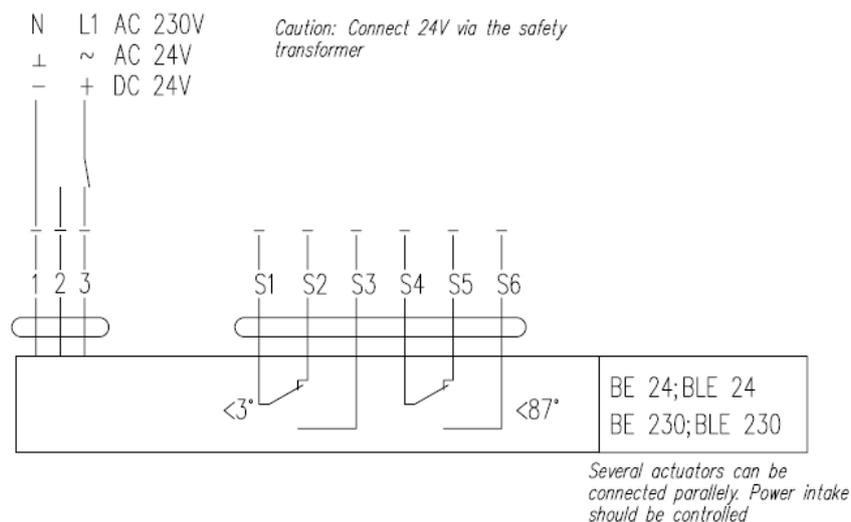
Actuator type	Location of the damper isolation partition
- Belimo BE type	Open isolation partition – actuator indication: 0
- Belimo BEN type	Closed isolation partition – actuator indication: 90

Technical specifications	BE24, BE24-ST	BE230
Power supply	AC 24V 50/60Hz DC 24 V	AC 220-240V 50/60 Hz
Power demand:		
- for spring tensioning	12 W	8 W
- for spring holding	0,5W	0,5 W
Sizing (apparent power)	18 VA	15 VA
Appliance class	III	II
Ingress protection rating	IP 54	IP 54
Auxiliary circuit breaker:	2xSPDT 6(3) A, 250V	2xSPDT 6(3) A, 250V
- activation position [degrees]	3°, 87°	3°, 87°
Torque:		
- motor	40 Nm	40 Nm
- locking	50 Nm	50 Nm
Cable connection:		
- motor (L = 0.9 m)	3x0,75 mm <sup>2</sup>	3x0,75 mm <sup>2</sup>
- auxiliary circuit breaker	6x0,75 mm <sup>2</sup>	6x0,75 mm <sup>2</sup>
Movement time: (0-90°)		
- motor	60s	60 s
Operating temperature range	- 30 ...+50°C	- 30 ...+50°C
Sound pressure level:		
- motor	max 62 dB (A)	max 62 dB (A)

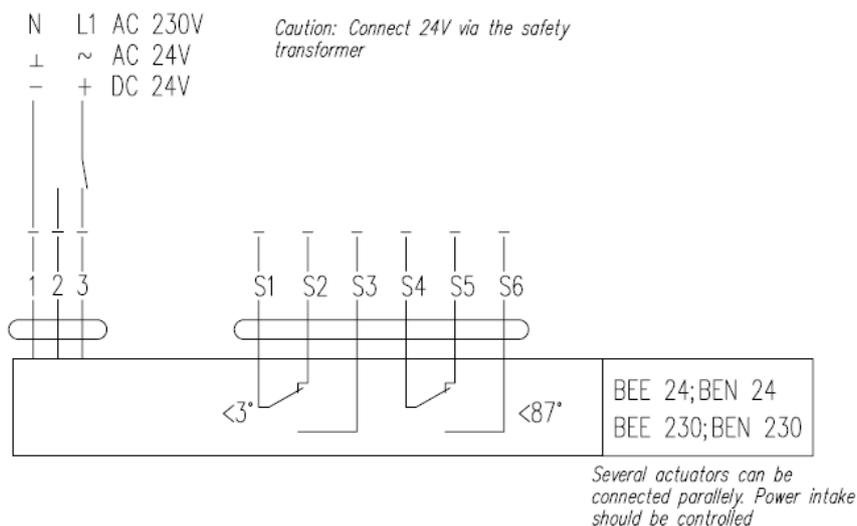
Technical specifications	BEN24, BEN24-ST	BEN230
Power supply	AC 24V 50/60Hz DC 24V	AC 220-240V 50/60 Hz
Power demand:		
- for spring tensioning	3 W	4 W
- for spring holding	0,1 W	0,4 W
Sizing (apparent power)	6 VA	7 VA
Appliance class	III	II
Ingress protection rating	IP 54	IP 54
Auxiliary circuit breaker:	2xSPDT 3A, AC 250V	2xSPDT 3A, AC 250V
- activation position [degrees]	5°, 80°	5°, 80°
Torque:		
- motor	15 Nm	15 Nm
Cable connection:		
- motor (L = 0.9 m)	3x0,75 mm <sup>2</sup>	3x0,75 mm <sup>2</sup>

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- auxiliary circuit breaker	6x0,75 mm <sup>2</sup>	6x0,75 mm <sup>2</sup>
Movement time: (0-90°)	30 s	30 s
- motor		
Operating temperature range	- 30 ...+55°C	- 30 ...+55°C
Sound pressure level:		
- motor	max 58 dB (A)	max 58 dB (A)



## Connection diagram for the BE24, BE230 actuators



## Connection diagram for the BEE24, BEN24, actuators

### Note:

The BE, BEN actuator operating control requires a three-wire system. The actuator sense of rotation is switched by applying the supply voltage to terminal 2 or 3, depending on the desired sense. The location of the limit switches for all types of actuators is shown for the position without voltage. For proper operation of a device equipped with electrical actuators, it is recommended that the rated voltage housed tolerance of  $24V \pm 10\%$  or  $230V \pm 10\%$ . Power supply devices other than listed above may cause malfunction and will not be covered by the warranty conditions.

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## 7. TRANSPORT & STORAGE CONDITIONS

Fire dampers are packaged in cardboard boxes or placed on pallets. Dampers are protected against damage by film or another covering material. Damper transport may take place using any means of transport, provided they are protected against weather factors. Dampers placed on means of transport should be secured against shifting of position during transport. Before installing dampers, control each of them visually. Do not move the damper by holding by the connection cable or put a device on a release and control mechanism. Do not hit or drop the damper. When moving and installing, support the damper on the sides or edges of the body.

Dampers should be stored in closed rooms that provide protection against external weather conditions. In the case dampers are stored on the ground, place them on protection pads in order to protect them against damage. Storage should take place in rooms where:

- there is no access to dust, gases, caustic vapors and other aggressive chemical vapors that can destroy insulating elements and structural elements;
- the dampers are not affected by direct sunlight and UV radiation;
- maximum relative humidity does not exceed 80% at the temperature of + 20 °C;
- the ambient temperature is between - 20 °C and + 40 °C;
- there are no vibrations.

## 8. MAINTENANCE AND SERVICING

The equipment from MERCOR L&V requires periodic technical inspection and maintenance at least every 12 months throughout its operating life, i.e. during the warranty and post-warranty period. Inspection and maintenance may only be carried out by the manufacturer or contractors authorised by MERCOR L&V to service its products.

Regular service inspections of fire protection equipment is mandatory in Poland according to § 3 Section 3 of the Polish Regulation of the Ministry of the Interior and Administration of 7 June 2010 on the fire protection of buildings, other structures and areas (Polish Journal of Laws, Year 2010, No. 109 Item 719). Do these recommended actions in the inspection intervals:

- Check the electrical connections, especially for all mechanical damage.
- Inspections of the condition of the supply voltage for the devices, which allowed the following tolerances:
  - 24V±10% for electric actuators
  - 24V±2% for electromagnetic release mechanism
  - 230V ±10% for electric actuators
  - 230V±2% for electromagnetic release mechanism
- Check the equipment casing, especially for all mechanical damage.
- Check for any obstructions to proper performance of the equipment.

To facilitate the activities under service inspection, servicing and warranty claim response, e.g. visual inspection or repairs, the equipment user/operator shall provide physical access to the equipment by removing thermal insulation, suspended ceiling, and other installations, as required and applicable to warrant unobstructed access.

Inspection ports, e.g. type mcr KRW are recommended for equipment installed in ducts.

In the case of roof mounted equipment, provide access to the area (via ladders or elevated platforms).

Refer all matters related to technical inspection, maintenance and servicing of this equipment to the MERCOR L&V Service Department, [serwis@mercor.com.pl](mailto:serwis@mercor.com.pl), tel. +48 58 341 42 45 ext. 170, fax: +48 58 341 39 85, from 8 AM to 4 PM (Mo-Fri).

## 9. WARRANTY TERMS & CONDITIONS

1. MERCOR L&V provides a 12-month quality guarantee and warranty for the equipment, counting from the date of purchase, unless the contract stipulates otherwise.
2. The purchaser is obliged to check the Products in terms of quality and quantity upon receipt.

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3. Any defects, shortages or damage noticed must be entered in the receipt documents or on the consignment note and reported in writing to MERCOR L&V, with all damage to the shipment or product documented with photographs.
4. Reports of damage to the shipment, product or quantity shortages must be sent in writing to MERCOR L&V within 24 hours of the date of receipt of the shipment.
5. Defects not visible at the time of delivery must be reported immediately to MERCOR L&V together with photographic documentation, and reports of quality defects must be made no later than within 5 working days of the date of receipt of the Products.
6. MERCOR L&V reserves the right not to consider the above-mentioned reports in the event of failure to provide (receive) photographic documentation or after the above-mentioned deadlines have been exceeded.
7. Complaints can be made by telephone: 58/341-42-45, by fax: 58/341-39-85, by e-mail: reklamacje@mercor.com.pl or by sending a letter to the following address: MERCOR L&V, ul. Grzegorza z Sanoka 2, 80-408 Gdańsk.
8. If, during the warranty and guarantee period, physical defects covered by the warranty and/or guarantee become apparent, MERCOR L&V undertakes to remove them as soon as possible, counting from the date of receipt of a written notification and delivery of proof of purchase (contract, invoice, delivery document), subject to point 14.
9. MERCOR L&V reserves the right to extend the repair time in the case of complex repairs or repairs requiring the purchase of non-standard components or spare parts.
10. Liability under the warranty and guarantee covers only defects arising from causes inherent in the equipment sold.
11. In the case of defects arising as a result of improper use of the equipment (not in accordance with the technical documentation) or other reasons specified in point 14, the Buyer/warranty holder may be charged with the costs of their removal.
12. The condition for the removal of defects is that the reporting party provides full access to the work site, in particular ensuring: a lift in the case of devices installed at a height of more than 3 m, free access to the rooms where the devices are installed and the necessary inspections, removal of thermal insulation, removal of suspended ceilings, removal of other installations if they prevent free access to the device.
13. If it is not possible to repair the device at the place where it is installed, MERCOR L&V reserves the right to dismantle it, deliver it to the address indicated by MERCOR L&V and reassemble it. The cost of this operation shall be borne by the purchaser/warranty holder.
14. The warranty and guarantee do not cover:
  - damage and failure of devices caused by improper operation (not in accordance with the technical documentation), interference by the user or persons not authorised by MERCOR L&V, lack of periodic technical inspections, failure to perform maintenance activities described in the 'MAINTENANCE AND SERVICE' section of this document;
  - damage to equipment caused by reasons other than those attributable to MERCOR L&V, in particular: random events such as torrential rain, flooding, hurricanes, flooding, lightning strikes, power surges, explosions, hail, aircraft crashes, fire, avalanches, landslides and secondary damage resulting from the above causes. Torrential rain is defined as rain with a yield coefficient of at least 4, as determined by the Institute of Meteorology and Water Management (IMiGW). If it is not possible to determine the coefficient referred to in the preceding sentence, the actual condition and extent of damage at the place where it occurred, which will indicate the effect of torrential rain, will be taken into account. A hurricane is considered to be wind with a speed of not less than 17.5 m/s (damage is considered to have been caused by a hurricane if hurricane activity has been confirmed in the immediate vicinity);
  - damage resulting from failure to comply with the obligation to immediately report a discovered defect;
  - deterioration in the quality of coatings caused by natural ageing processes;
  - defects caused by the use of abrasive or aggressive cleaning agents;
  - damage caused by aggressive external factors, in particular chemical and biological factors, or whose origin is related to production processes and activities carried out in the facility or in its immediate vicinity, where the equipment was installed;
  - parts subject to natural wear and tear during operation (e.g. seals), unless they have a manufacturing defect;

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- damage caused by improper transport, unloading or storage of the equipment;
  - damage caused by installation that does not comply with the technical documentation and good construction practice;
  - devices or their parts in the event of breakage or damage to the nameplate or warranty seals.
15. The warranty and guarantee shall expire with immediate effect if:
- The buyer/warranty and guarantee beneficiary makes structural changes on their own without prior agreement with MERCOR L&V,
  - periodic technical inspections and maintenance activities were not performed on time or were performed by unauthorised persons or a service provider not authorised by MERCOR L&V, or if the equipment was operated incorrectly,
  - there has been any interference by persons not authorised by MERCOR L&V – apart from activities falling within the scope of normal operation of the equipment.
16. The purchaser/warranty and guarantee holder is obliged to operate the equipment properly (in accordance with the technical documentation) and to carry out periodic technical inspections and maintenance activities in accordance with the rules described in this document in the section 'MAINTENANCE AND SERVICE'.

*The relevant provisions of the Polish Civil Code shall apply to all matters not regulated in these Warranty Terms & Conditions.*

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2434

**MERCOR Light&Vent Sp. z o.o.**

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2434-CPR-0426

PN-EN 12101-8:2012 (EN 12101-8:2011)  
Smoke control damper – multi and single zone

**mcr WIP LDX**

<b>Nominal activation conditions/sensitivity:</b> - Closing/opening during the test and the right time	Automatic activation – positive result
<b>Response time:</b> - Closure time	Automatic activation – positive result
<b>Reliability:</b>	10 000 cykles - positive result
<b>Fire resistance:</b> - Integrity E - Insulation I - Smoke leakage S - Mechanical stability (E category) - Maintenance of the cross section (E category)	EI 120 ( $v_{ew} i \rightarrow >0$ ) S 1500C <sub>10 000</sub> AAmulti E 120 ( $v_{ew} i < - >0$ ) S 500C <sub>10 000</sub> AAmulti
<b>Durability:</b> - time delay - maintenance of certainly operation	positive result positive result