

OPERATION AND MAINTENANCE MANUAL (OMM)

Fire damper type **mcr FID 240L**



Version mcr FID 240L 25.07.20.2

FIRE VENTILATION SYSTEMS

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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

ATTENTION

As of the date of issue of the technical and operational documentation, previous versions cease to be valid.
The technical and operational documentation does not apply to dampers manufactured before the date of its issue .

mcr FID 240L single-leaf fire dampers

ATTENTION:

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 case of fire dampers, cut-off and transfer, the device is equipped with a thermal release containing single-use temperature fuses. During normal operation, the above-mentioned element should be protected against the effects of the permissible temperature T_{max} (see table below). When it is exceeded, the temperature fuses may operate, which is a normal operation and is not covered by the guarantee or warranty.

Thermal release for a damper equipped with an electric actuator:



Duct inside temperature fuse

Duct outside temperature fuse

Thermal trigger for temperature	72°C	95°C
Temperature fuse inside the channel	$T_{max} 40\text{ °C}$	$T_{max} 60\text{ °C}$
Outside temperature fuse	$T_{max} 40\text{ °C}$	$T_{max} 40\text{ °C}$

INTRODUCTION

The purpose of this technical and operational documentation (OMM) is to familiarize the user with the purpose, design, principle of operation, correct assembly and operation of the product.

The OMM also contains additional information on the conditions of use, maintenance and warranty conditions of the product.

Before starting to install and use the device, carefully read the content of this OMM. Failure to follow the recommendations contained in the documentation may lead to dangerous situations, property damage or health damage. The manufacturer is not responsible for damage resulting from use inconsistent with this documentation.

1. SUBJECT OF DOCUMENTATION

The following OMM applies to the entire group of single-plane fire dampers type mcr FID 240L. Compliance with the recommendations contained in the OMM will ensure the correct functioning of the device in terms of fire protection of the rooms and the safety of the system users.

2. PURPOSE OF THE DEVICE

Application

Single-blade fire dampers type mcr FID 240L may be used as:

- ☒ fire dampers – mcr FID 240L /S
- ☐ smoke control dampers for fire ventilation systems – mcr FID 240L /V
- ☐ smoke control dampers for mixed fire ventilation systems – mcr FID 240L /V-M
- ☐ transfer dampers – mcr FID 240L /T
- ☐ relief dampers – mcr FID 240L /G

ATTENTION:

Fire dampers for fire ventilation systems marked mcr FID 240L /V and fire dampers for mixed fire ventilation systems marked mcr FID 240L /VM have one declaration of performance in accordance with legal requirements. The designation -M and the word "mixed" used in the document are the trade designations used by the manufacturer. The construction and execution of the above dampers is the same regardless of the trade designation.

Dampers cannot operate in installations exposed to dust unless they are covered by a special, individually developed service and technical inspection program.

Fire resistance

The mcr FID 240L /... type dampers have fire resistance:

EI240S, EI120S, EI90S, EI60S

EI240, EI120, EI90, EI60

E240, E120, E90, E60

depending on the application, method and location of the flap installation, and according to the provisions in the Declaration of Performance.

Versions of execution

The mcr FID 240L dampers can be manufactured as rectangular dampers.

Dimension series

mcr FID 240L dampers are manufactured in the following dimensions:

Width: 200 to 1050 mm

Height: 200 to 1000 mm

Length: 315mm

mcr FID 240L single-leaf fire dampers

In addition to the standard dimensions, it is possible to manufacture dampers with intermediate dimensions. The maximum surface area of the mcr FID 240L dampers is: 1.05 m². The minimum surface area of the dampers is 0.04 m²

3. DEVICE CONSTRUCTION AND OPERATION PRINCIPLE

Construction

Single-plane dampers mcr FID 240L consist of a rectangular housing, consisting of two segments separated by a spacer made of fireproof board, a movable cut-off partition and a trigger-control mechanism activated remotely or automatically after the thermal trigger is activated. The damper housing is made of galvanized or stainless steel sheet. The damper cut-off partition is made of non-flammable board and is mounted in a sheet metal reinforcing profile. There is an intumescent seal on the inside of the housing. Resistance sections made of galvanized or stainless steel sheet are attached to the inside surface of the housing, limiting the movement of the rotating partition. The sections are covered with a ventilation seal. The damper is finished with flange connections on both sides.

Action

The operating principle and behavior of single-plane dampers mcr FID 240L /... depends on the version of their application:

☒ fire dampers – mcr FID 240L /S

In the normal operating position the dampers are open. The dampers are closed (to the safety position) as follows:

- ☐ Automatically, by tripping the thermoelectric trigger
- ☒ manually, by pressing the control button on the thermoelectric trigger
- ☒ remotely, by tripping an electric axial actuator with a return spring caused by isolation from the supply voltage
- ☒ automatically, by tripping the thermal trigger and the driving spring

☐ smoke control dampers for fire ventilation systems – mcr FID 240L /V

In the normal operating position the dampers are closed. The dampers are opened (to the safety position) 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

☐ smoke control dampers for mixed fire ventilation systems – mcr FID 240L /V-M

In normal operation the dampers are closed or open, depending on the function carried out. The dampers are opened/closed (to the safety position) as follows:

- ☐ remotely, by tripping the electrical axial actuator without a return spring in order to apply 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

☐ transfer fire dampers – mcr FID 240L /T

In the normal operating position the dampers are open or closed. The dampers are switched to the safety position as follows:

- ☐ automatically, by tripping the thermoelectric trigger
- ☐ manually, by pressing the control button on the thermoelectric trigger
- ☐ remotely, by tripping an electric axial actuator with a return spring caused by isolation from the supply voltage
- ☐ automatically, by tripping the thermal trigger and the driving spring

☐ relief fire dampers – mcr FID 240L /V

In normal operation the dampers are closed or open, depending on the function carried out. The dampers are opened/closed (to the safety position) as follows:

- ☐ remotely, by tripping the electrical axial actuator without a return spring in order to apply supply voltage to the actuator in the right manner

Manual service check of the correct operation of dampers with electric actuators is possible by using a special hex wrench, which is placed in the socket marked on the actuator and through a rotational movement, the damper partition can be set to the desired position. The rotational movement using the wrench should be performed evenly, slowly and carefully. Turning the wrench too quickly and violently may damage the internal mechanism of the actuator or damage the drive transmission system. In the case

mcr FID 240L single-leaf fire dampers

of dampers with electric actuators, it is recommended to use the mcr T2 tester to manually check the correct operation of the dampers.

ATTENTION

Under no circumstances should you pull directly on the damper partition to open or close it. Such action may damage the self-locking drive mechanism of the device and is not covered by the warranty. It is recommended that the dampers be opened and closed when the ventilation system is switched off.

Triggering and control mechanisms

The mcr FID 240L/... damper trigger and control mechanism can be:

Electric actuator:

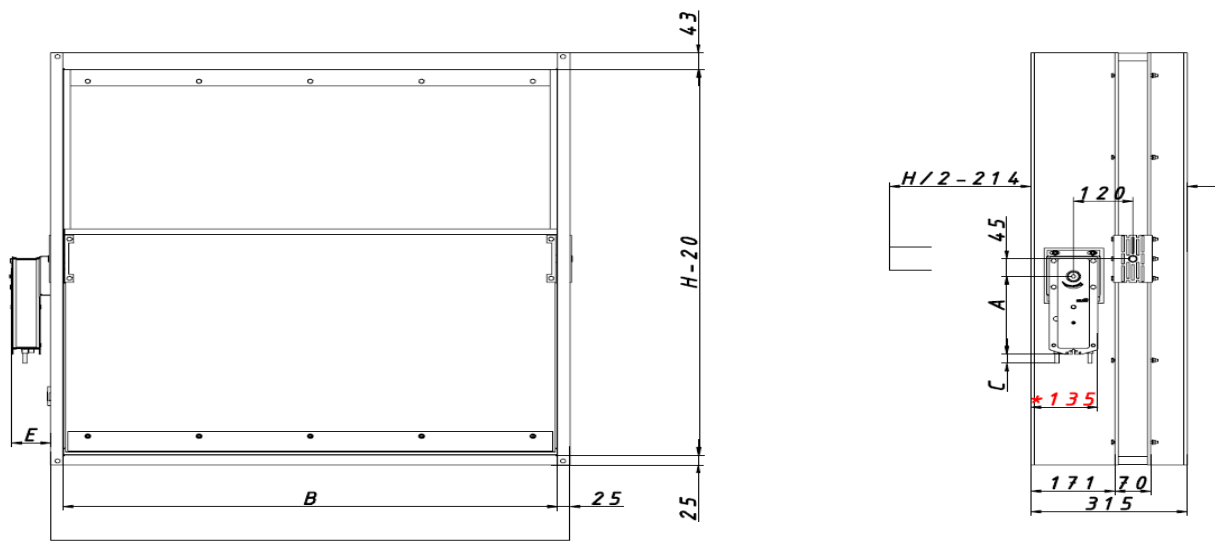
<input checked="" type="checkbox"/> BF230-T	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T	<input type="checkbox"/> BE230	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T
<input checked="" type="checkbox"/> BF 24-T (-ST)	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T	<input type="checkbox"/> BE 24 (-ST)	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T
<input checked="" type="checkbox"/> BF 24-T-TL	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T	<input type="checkbox"/> BLE230	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T
<input checked="" type="checkbox"/> BFL230-T	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T	<input type="checkbox"/> BLE 24(-ST)	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T
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<input checked="" type="checkbox"/> BFN 230-T	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T	<input type="checkbox"/> EXBF 24	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T
<input checked="" type="checkbox"/> BFN 24-T (-ST)	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T	<input checked="" type="checkbox"/> BF230-TN	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T
<input checked="" type="checkbox"/> BF 24-TN (-ST)	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T	<input checked="" type="checkbox"/> BF 24-TN TL	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T
<input type="checkbox"/> BEE230	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T	<input type="checkbox"/> BEE 24(ST)	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T
<input type="checkbox"/> BEN230	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T	<input type="checkbox"/> BEN 24(ST)	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T
<input checked="" type="checkbox"/> MF230-T1	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T	<input checked="" type="checkbox"/> MF24-T1	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T
<input checked="" type="checkbox"/> MLF230-T1	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T	<input checked="" type="checkbox"/> MLF24-T1	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T
<input checked="" type="checkbox"/> QT.Ex-M230	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T	<input checked="" type="checkbox"/> QT.Ex-M24	<input checked="" type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /V-M	<input type="checkbox"/> /T

Spring mechanism:

<input type="checkbox"/> RST	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /VM	<input type="checkbox"/> /T	<input type="checkbox"/> RST/KW1/S	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /VM	<input type="checkbox"/> /T
<input type="checkbox"/> RST/KW1/24P	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /VM	<input type="checkbox"/> /T	<input type="checkbox"/> RST/KW1/24I	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /VM	<input type="checkbox"/> /T
<input type="checkbox"/> RST/KW1/230P	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /VM	<input type="checkbox"/> /T	<input type="checkbox"/> RST/KW1/230I	<input type="checkbox"/> /S	<input type="checkbox"/> /V	<input type="checkbox"/> /VM	<input type="checkbox"/> /T

mcr FID 240L single-leaf fire dampers

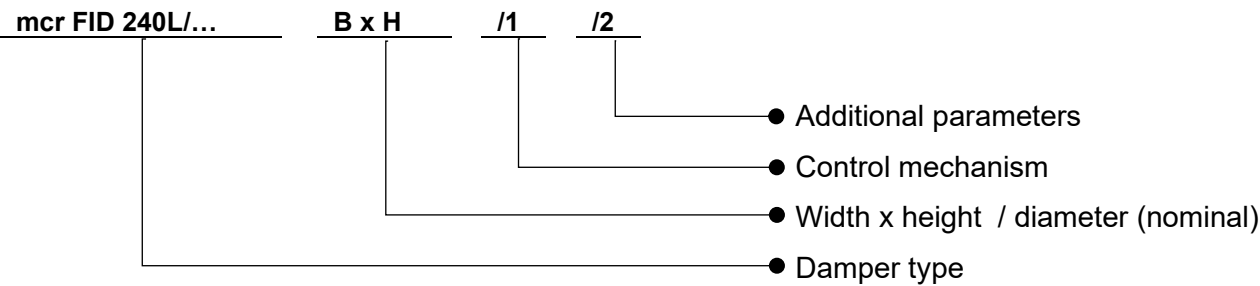
Basic dimension



<i>mechanism</i>	<i>A</i>	<i>C</i>	<i>E</i>
<i>BF</i>	198	10	70
<i>BFN</i>	157	30	62
<i>BFL</i>	138	30	58
<i>MLF</i>	114	30	67
<i>MF</i>	198	30	75
<i>QT.Ex-M</i>	260	30	105
* bricklaying boundary			

mcr FID 240L damper with actuator

4. DEVICE MARKING



All exact commercial designations of the devices are available in the Technical Information.

mcr FID 240L single-leaf fire dampers

5. INSTALLING THE DEVICE

ATTENTION

When installing the damper and carrying out finishing work, it is necessary to take into account the possibility of later access to the device and dismantling the triggering and control mechanism in order to perform any service work and technical inspections.

mcr FID 240L dampers can be installed in the following building partitions (walls or ceilings):

- ☒ masonry and concrete walls min. 150 mm thick
- ☒ masonry walls of bricks or blocks min. 150 mm thick
- ☐ panel walls min. min. 125 mm thick
- ☐ floor slabs min. min. 150mm thick

Additionally, dampers can be mounted:

- ☐ outside the walls
- ☐ in modules (sets)
- ☐ in batteries (sets)

mcr FID 240L cut-off dampers can also be installed in building partitions with a lower fire resistance class¹. In the case of installing the damper in a given type of wall, whose thickness is less than required, the dampers have a fire resistance equal to the fire resistance of the partition while maintaining the smoke tightness criterion¹. In the case of installing the damper in a given type of wall, whose thickness is less than required and while maintaining 240 minutes of fire resistance, its thickness should be locally increased, e.g. by installing an additional board or other building element, on the perimeter of the installed damper

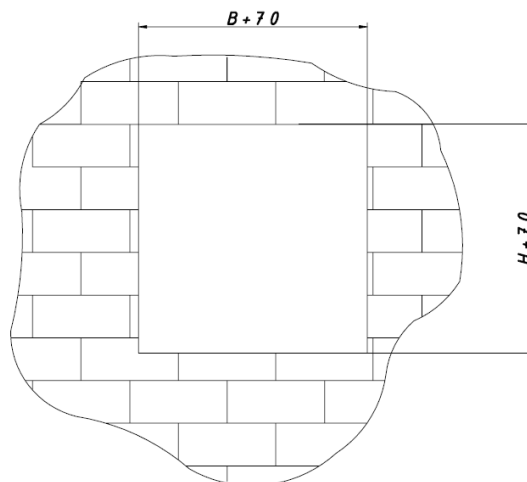
The mcr FID 240L can also be installed in building partitions with a lower fire resistance class. In the case of such installation, the dampers have fire resistance equal to the fire resistance of the partition while maintaining the smoke tightness criterion. In the case of installing the damper in a given type of wall, the thickness of which is less than required, its thickness should be increased locally, e.g. by installing an additional board or other building element, on the perimeter of the installed damper.

5.1 PRE-ASSEMBLY INSPECTION

Each damper is checked by the manufacturer before packaging and transport. After unpacking at the recipient's, a visual inspection should be made to see if the housing has been deformed or the damper has been damaged during transport. It should be checked whether the damper opens and closes correctly.

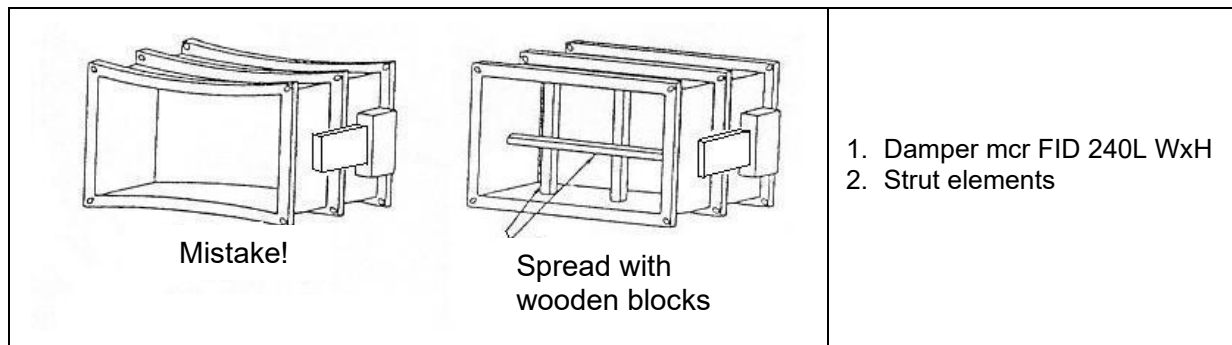
5.2 MOUNTING HOLE

The recommended size of the opening to allow correct installation of a rectangular damper is $(B+70) \times (H+70)$ mm.



Preparing the mounting hole.

5.3 BRICKING IN / FITTING THE DAMPER



Securing the damper against buckling.

The correct operation of the mcr FID 240L damper is maintained when the axis of rotation of the partition is horizontal. The triggering and control mechanism can be located on the right or left side of the damper with any air flow direction.

Before bricking up/setting, place the damper axially in the partition (wall separating the fire zone) in a previously prepared opening. Then level and immobilize the device. After these activities, manually activate the damper partition, checking whether it rotates correctly (does not interfere with the housing elements, etc.). Close the damper partition. Then install the expansion elements as shown in the drawing. The gap between the damper housing and the wall should be thoroughly filled with appropriate mortar, ensuring fire resistance of the wall and damper, paying particular attention to prevent it from getting on the damper actuators (release and control mechanism, partition, seals, limiters). For this purpose, before installation, the damper must be protected with foil or other protective material until the masonry and finishing works are completed. Then install GK board bands around the damper body. The partition must remain closed throughout the installation. After installation, remove the brackets and open and close the damper again to check its correct operation.

To ensure the fire resistance of the fire separation element, the brickwork limit must be strictly observed - the axis of rotation of the damper partition cannot be outside the partition.

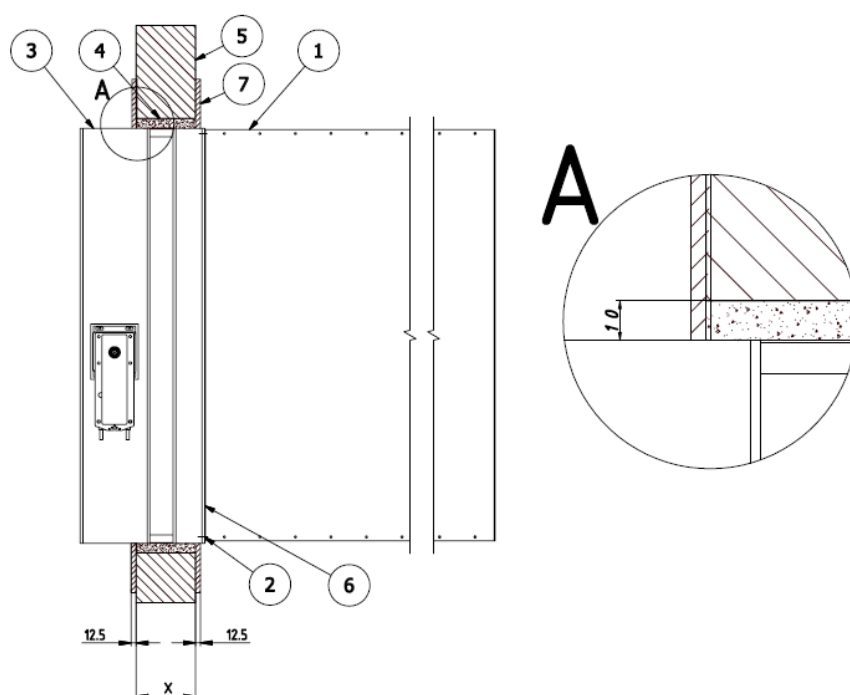
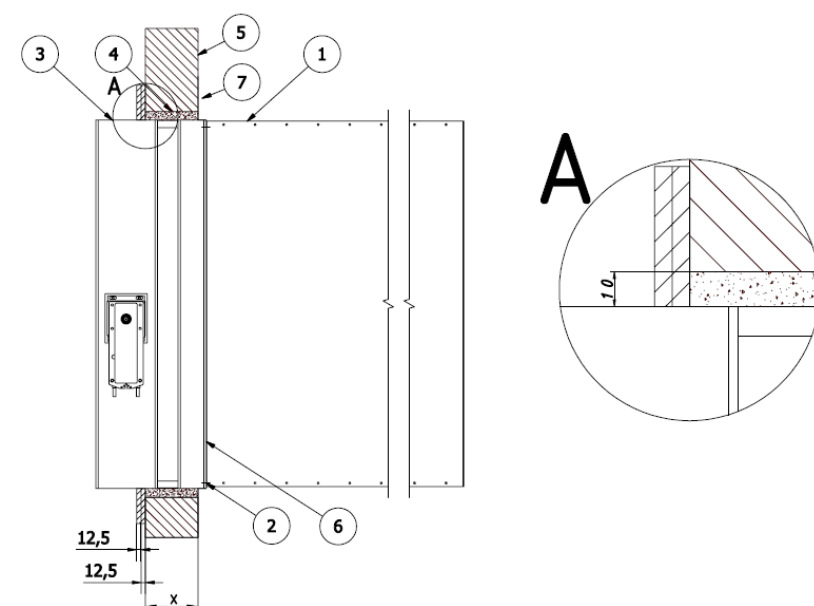
The connection of the installed damper to the ventilation duct must be made coaxially. During the installation of the damper, it is forbidden to damage the damper body, and in particular to cause stress in it. The damper cannot be a "load-bearing element" of the duct or ventilation system on which it is installed. It is not allowed to drill through the damper housing, screw in screws, bolts or other elements passing through the housing into the damper. After connecting the ventilation duct, the correct operation of the damper should be checked again.

During the installation of mcr FID 240L dampers, special care should be taken to ensure that the thermal release (fusible element) is not damaged, and that it is not exposed to high temperatures (fire, welding machines, soldering irons) which cause it to operate (this is a single-use element and is not subject to warranty replacement). Do not expose the swelling seals installed in the damper housing to high temperatures. Swelling of the seals prevents the damper from closing. After completing the installation, the damper should be thoroughly cleaned and ensure that there is no debris remaining in it that could affect its correct operation.

ATTENTION

The device's bricking boundary must be strictly observed so that the trigger control mechanism is located outside the partition wall and is easily accessible. The exception is the installation of the damper outside the partition.

mcr FID 240L single-leaf fire dampers

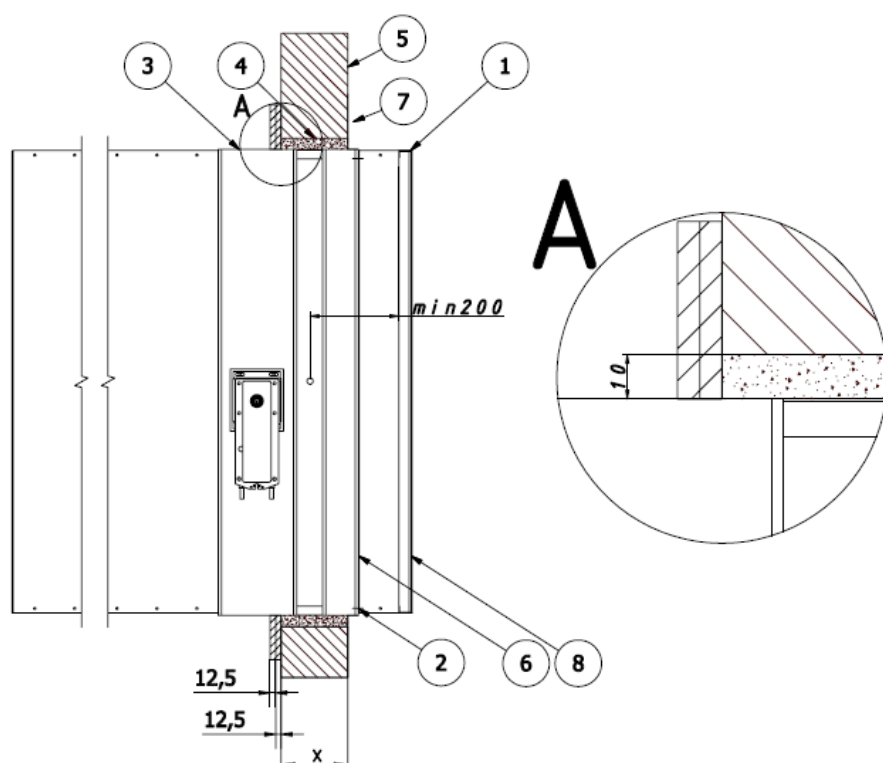


- 1 - Ventilation duct
- 2 - Sheet metal screw ST 4.2x16
- 3 – Damper mcr FID 240L
- 4 - Assembly mortar*
- 5 - Masonry wall
- 6 - Ventilation seal
- 7- GK board band (12.5x100) on the around the perimeter of the damper
- X - wall thickness

Installation of the mcr FID 240L damper in brick and concrete walls

*The recommended protection is based on assembly mortar. The manufacturer allows the use of other materials with parameters no worse than the recommended solution and with appropriate approval documents confirming the appropriate fire resistance class.

mcr FID 240L single-leaf fire dampers



- 1 - Ventilation duct
- 2 - Sheet metal screw ST 4.2x16
- 3 - Damper mcr FID 240L
- 4 - Assembly mortar*
- 5 - Masonry wall
- 6 - Ventilation seal
- 7- GK board band (12.5x100) on the around the perimeter of the damper
- 8 - Masking Grid
- X - wall thickness

It is possible to install a masking grid on the channel at a distance that allows free operation of the flap and not less than 200 mm from the center of the partition's axis of rotation

***The recommended protection** is based on the use of cement or gypsum mortar. The manufacturer also allows the use of other materials, provided that their parameters are not inferior to those of the recommended solution and that they are accompanied by appropriate approval documents confirming the required fire resistance rating.

Installing the masking grille for the FID 240L ventilation flap

mcr FID 240L single-leaf fire dampers

5.4 ELECTRICAL CONNECTION

After the damper has been properly embedded, if it has control elements or other elements that require the electrical installation to be connected, the cables of this installation should be properly connected to the damper. The connection diagrams and basic electrical data of the release and control mechanisms supplied with the mcr FID 240L dampers are given below.

Actuators – technical data

Actuator type	Damper bulkhead location
<ul style="list-style-type: none">- Belimo BFL series- Belimo BFN series- Belimo BF series- Mercor MLF series- Mercor MF series	Open isolation partition – actuator indication: 90 Closed isolation partition – actuator indication: 0

Technical data	BF 24, BF24-T, BF24-TN MF 24-T1	BF230, BF230-T, BF230-TN MF 230-T1
Power supply	AC 24V 50/60Hz DC 24V	AC 220-240V 50/60 Hz
power requirement:		
-when tensioning the spring	7 W	8 W
-during maintenance	2 W	3 W
dimensioning (apparent power)	10 VA	11 VA
protection class	III	II
degree of protection	IP 54	IP 54
auxiliary switch :	2xEPU 3 (0,5) A, 250V	2xEPU 3 A, 250V~
- switch-on point [degrees]	5°, 80°	5°, 80°
torque :		
- motor	18 Nm	18 Nm
- spring	12 Nm	12 Nm
cable connection:		
-motor (length 0,9 m)	2x0,75 mm ²	2x0,75 mm ²
-auxiliary switch	6x0,75 mm ²	6x0,75 mm ²
movement time: (0-90°)		
- motor	120 s	120 s
- return spring	16 s	16 s
operating temperature - range	- 30 ...+50°C	- 30 ...+50°C
sound pressure level:		
- motor	max 45 dB (A)	max 45 dB (A)
- spring	~ 63 dB (A)	~ 63 dB (A)

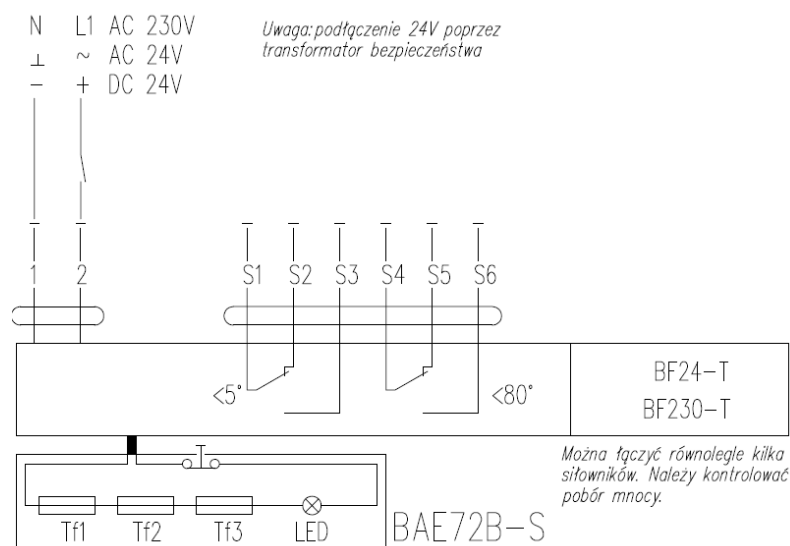
Technical data	BFL24, BFL24-T	BFL230, BFL230-T	BFN24, BFN24-T	BFN230, BFN230-T
Power supply	AC 24V 50/60Hz DC 24 V	AC 220-240V 50/60 Hz	AC 24V 50/60Hz DC 24V	AC 220-240V 50/60 Hz
power requirement:				
-when tensioning the spring	2,5 W	3,5W	4 W	5 W
-during maintenance	0,7 W	1,1W	1,4 W	2,1 W
dimensioning (apparent power)	4 VA	6,5 VA	6 VA	10VA
protection class	III	II	III	II
degree of protection	IP 54	IP 54	IP 54	IP 54

mcr FID 240L single-leaf fire dampers

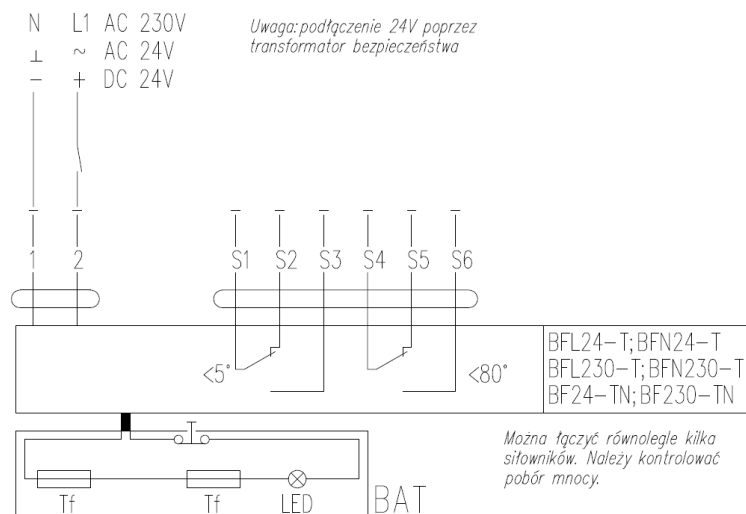
auxiliary switch :	2xSPDT 3(0,5)A AC 250V	2xSPDT 3(0,5)A AC 250V	2xSPDT 3(0,5) A, 250V	2xSPDT 3(0,5) A, 250V
- switch-on point [degrees]	5°, 80°	5°, 80°	5°, 80°	5°, 80°
torque :				
- motor	4 Nm	4 Nm	9 Nm	9 Nm
- spring	3 Nm	3 Nm	7 Nm	7 Nm
cable connection:				
-motor (length 0,9 m)	2x0,75 mm ²	2x0,75 mm ²	2x0,75 mm ²	2x0,75 mm ²
-auxiliary switch	6x0,75 mm ²	6x0,75 mm ²	6x0,75 mm ²	6x0,75 mm ²
movement time: (0-90°)				
- motor	<60 s	<60 s	<60 s	<60 s
- return spring	~20s	~20s	~20 s	~20 s
operating temperature – range	- 30 ...+55°C	- 30 ...+55°C	- 30 ...+55°C	- 30 ...+55°C
sound pressure level:				
- motor	max 43 dB (A)	max 43 dB (A)	max 55 dB (A)	max 55 dB (A)
- spring	~ 62 dB (A)	~ 62 dB (A)	~ 67 dB (A)	~ 67 dB (A)

Technical data	MLF 24T1	MLF 230T1
Power supply	AC 24V 50/60Hz DC 24 V	AC 220-240V 50/60 Hz
power requirement:		
-when tensioning the spring	5 W	5 W
-during maintenance	2,5 W	3 W
dimensioning (apparent power)	8 VA	8 VA
protection class	III	II
degree of protection	IP 54	IP 54
auxiliary switch :	2xSPDT 3(0,5)A AC 250V	2xSPDT 3(0,5)A AC 250V
- switch-on point [degrees]	5°, 80°	5°, 80°
torque :		
- motor	5 Nm	5 Nm
- spring	5 Nm	5 Nm
cable connection:		
-motor (length 0,9 m)	2x0,75 mm ²	2x0,75 mm ²
-auxiliary switch	6x0,75 mm ²	6x0,75 mm ²
movement time: (0-90°)		
- motor	40-75s	40-75s
- return spring	20s	20s
operating temperature - range	- 30 ...+50°C	- 30 ...+50°C
sound pressure level:		
- motor	max 45 dB (A)	max 45 dB (A)
- spring	~ 62 dB (A)	~ 62 dB (A)

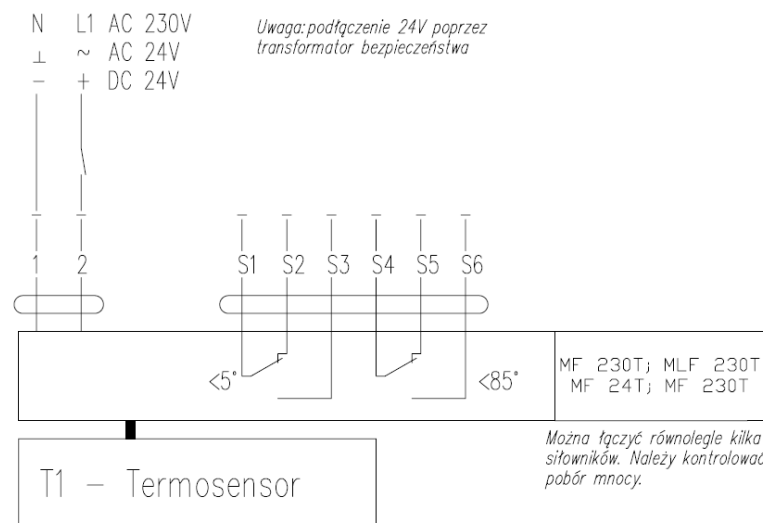
mcr FID 240L single-leaf fire dampers



Connection diagram for BF24-T, BF230-T actuators



Wiring diagram for actuator BFL24-T, BFL230-T, BFN24-T, BFN230-T, BF24-TN, BF230-TN



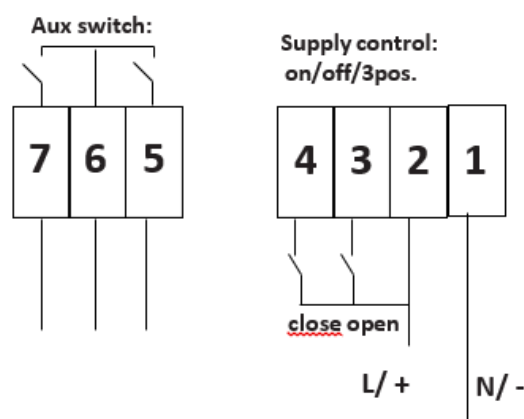
Connection diagram for MLF 24T1, MLF 230T1, MF 24T1, MF 230T1 actuators

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QT.Ex-M Actuators

Specifications	QT.Ex24-FT.Ex	QT.Ex230-FT.Ex
zone	1, 2, 21, 22	
ATEX classification	II 2 GD Ex ia IIC T6.. T1	
supply	AC 24 V 50/60 Hz DC 24 V	AC 230 V 50/60 Hz
power demand: - for spring tensioning - for holding	20 W 5 W	20 W 5 W
sizing (apparent power)	30 VA	30 VA
ingress protection rating	IP 66	IP 66
auxiliary circuit breaker: - activation point	2 x SPDT 3 (1,5) A AC 250 V 5°, 80°	2 x SPDT 3 (1,5) A AC 250 V 5°, 80°
torque: - motor - return spring	18 Nm 18 Nm	18 Nm 18 Nm
operation time (90°C): - motor - return spring	15 s 3 s*/10 s	15 s 3 s*/10 s
ambient temperature	-40... +70°C	-40... +70°C

* time of 3s on request



open bridge 2 to 3+ power on
close power off, actuator closes by spring return

Connection diagram for the QT.Ex-M actuators

Unused cable entries must be sealed to IP66.

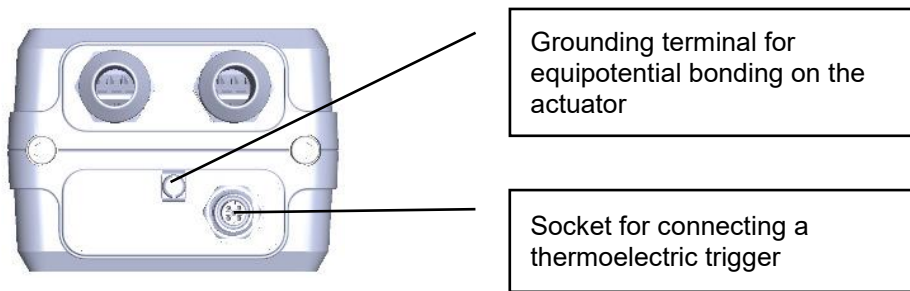
The actuator can be used for zones 1, 21 (II 2GD) and 2, 22 (II 3GD).

The actuator/flap must be connected to a potential equalization conductor (PA).

The actuator has an internal heater. The internal heater turns on automatically at -20°C. The heating only operates when the actuator is continuously powered.

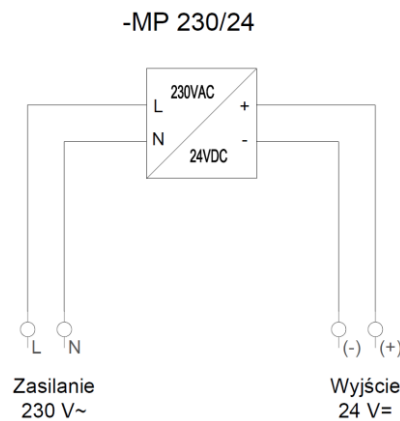
When starting the actuator for the first time, adjust the actuator's angle by pressing the button on the bottom of the actuator for 3 seconds (INIT).

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Attention:

For correct operation of a device equipped with electric actuators, it is recommended that the rated supply voltage is within the tolerance of $24V \pm 10\%$ or $230V \pm 10\%$. Powering devices with a voltage other than the above may cause incorrect operation of the device and will not be covered by the warranty.



Connection diagram for the 230/24V voltage conversion module type MP230/24.

6. TRANSPORT AND STORAGE CONDITIONS

The dampers are packed in cardboard boxes or placed on pallets. The dampers are protected against damage with foil or other protective material. The dampers can be transported by any means of transport, provided that they are protected against the effects of weather conditions. Dampers placed on means of transport should be protected against changing their position during transport. Before installing the damper, a visual inspection of each of them should be carried out. The damper must not be carried by grasping the connecting cable or placing the device on the trigger control mechanism. The damper must not be hit or dropped. When carrying and installing, the damper should be supported on the side surfaces or edges of the body.

Dampers should be stored in closed rooms that provide protection against external weather conditions. If dampers are stored on the ground, they should be placed on protective pads to protect the damper from damage.

Storage should take place in rooms where:

- there is no access of dust, gases, corrosive fumes and other aggressive chemical fumes that have a destructive effect on insulating elements and structural elements;
- the dampers are not exposed to direct sunlight or UV radiation;
- maximum relative humidity does not exceed 80% at a temperature of $+ 20\text{ }^{\circ}\text{C}$;
- ambient temperature is in the range from $- 20\text{ }^{\circ}\text{C}$ to $+ 40\text{ }^{\circ}\text{C}$;
- no vibrations occur.

7. MAINTENANCE AND SERVICE

MERCOR L&V devices should be subject to periodic technical inspections and maintenance activities at least every 12 months during the entire period of use, i.e. during the guarantee and warranty period, as well as after the guarantee and warranty period. Inspections and maintenance should be carried out by the manufacturer or by companies authorized to service MERCOR L&V devices.

The obligation to perform regular service inspections of fire protection equipment results from § 3 section 3 of the Regulation of the Minister of Internal Affairs and Administration of 7 June 2010 on fire protection of buildings, other construction facilities and areas (Journal of Laws 2010 No. 109, item 719).

It is recommended that between inspections the user performs:

- Checking the condition of electrical connections, paying particular attention to mechanical damage.
- Checking the correctness of the supply voltage values for devices in which the following tolerances are permitted:
 - 24V±10% for electric actuators
 - 24V±2% for electromagnetic triggers
 - 230V ±10% for electric actuators
 - 230V±2% for electromagnetic releases
- Checking the condition of the device body, paying particular attention to mechanical damage.
- Checking for any obstacles that could affect the proper operation of the devices.
- Checking the condition of the seals.

In order to perform activities falling within the scope of service inspections as well as service activities (including complaint procedures) such as inspections or repairs, the User (the person ordering the inspection, repair) must provide physical access to the devices by, for example, dismantling thermal insulation, dismantling suspended ceilings, dismantling other installations if they prevent free access to the device, etc. In the case of devices installed in channels, it is recommended to perform an inspection, e.g. mcr KRW. If the equipment is mounted on a roof or at a great height, a ladder or lifting platform must be provided.

For any matters related to technical inspections, maintenance and service of the equipment, please contact the representatives of the Service Department of MERCOR L&V serwis@mercor.com.pl, tel. 058/ 341 42 45 ext. 170 or fax no. 058/ 341 39 85 from 8 a.m. to 4 p.m. (Mon-Fri).

8. WARRANTY AND GUARANTEE CONDITIONS

1. MERCOR L&V grants a 12-month quality guarantee and warranty for devices, counted from the date of purchase, unless the agreement provides otherwise.
2. The complaint should be sent to MERCOR L&V within 7 days from the date of detection of the defect covered by the guarantee (and/or warranty).
3. Complaints may be submitted by phone at: 58/341-42-45, by fax at: 58/341-39-85, by e-mail at: reklamacje@mercor.com.pl or by sending a letter to the following address: MERCOR L&V, ul. Grzegorza z Sanoka 2, 80-408 Gdańsk.
4. If during the warranty and guarantee period any physical defects covered by the warranty and/or guarantee are revealed, MERCOR L&V undertakes to remove them as soon as possible, counting from the date of receipt of the written notification and delivery of proof of purchase (agreement, invoice, delivery document), subject to point 10.
5. MERCOR L&V reserves the right to extend the repair time in the case of complicated repairs or repairs requiring the purchase of non-standard components or spare parts.
6. Liability under the guarantee and warranty covers only defects resulting from causes inherent in the devices sold.
7. In the event of defects resulting from improper use of the equipment (not in accordance with the Operation and Maintenance Manual) or for other reasons indicated in point 10, the Buyer/warranty holder may be charged the costs of their removal.
8. The condition for removing defects is that the reporting party provides access to the full work front, in particular by providing: a lift in the case of devices installed at a height above 3 m, free access to the rooms in which the devices were installed and necessary inspections, dismantling of thermal

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insulation, dismantling of suspended ceilings, dismantling of other installations if they prevent free access to the device.

9. If it is not possible to repair the device at the place of its installation, MERCOR L&V reserves the right to dismantle it, possibly deliver it to the address indicated by MERCOR L&V and reassemble it. The cost of this operation is borne by the buyer/warranty holder.
10. The guarantee and warranty do not cover:
 - damage and failure of devices caused by improper use (not in accordance with the Operation and Maintenance Manual), interference by the user or persons not authorized by MERCOR L&V, lack of periodic technical inspections, failure to perform maintenance activities described in the "SERVICE AND MAINTENANCE" section of this document;
 - damage to equipment resulting from causes other than those attributable to MERCOR L&V, in particular: accidental events, such as: torrential rain, flood, hurricane, flooding, lightning strike, overvoltage in the electrical network, explosion, hail, aircraft fall, fire, avalanche, landslide and secondary damage resulting from the above causes. Torrential rain is considered to be rain with a performance factor of at least 4, established by IMiGW. If it is impossible to determine the factor referred to in the preceding sentence, the actual state and extent of damage at the place of its occurrence, which will indicate the effect of torrential rain, will be taken into account. A hurricane is considered to be a wind with a speed of not less than 17.5 m/s (damage is considered to have been caused by a hurricane if a hurricane has been detected in the immediate vicinity);
 - damage caused as a result of failure to immediately report a discovered defect;
 - deterioration of the quality of coatings caused by natural aging 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 the origin of which is related to production processes and activities carried out in the facility or its immediate vicinity in which the devices were installed;
 - parts subject to natural wear and tear during use (e.g. seals), unless they have a manufacturing defect;
 - damage caused by improper transportation, unloading or storage of the device;
 - damage caused as a result of assembly not in accordance with the provisions of the Operation and Maintenance Manual and construction rules;
 - devices or their parts if the rating plate or warranty seals are broken or damaged.
11. The guarantee and warranty expire with immediate effect in the event of:
 - The Buyer/guarantee and warranty holder makes any design changes on their own without prior consultation with MERCOR L&V,
 - periodic technical inspections and maintenance activities were not performed on time or were performed by unauthorized persons or service not authorized by MERCOR L&V or when the devices were operated incorrectly,
 - there was any interference by persons unauthorized by MERCOR L&V - outside the scope of activities falling within the scope of normal operation of the devices.
 - the device's thermal release was exposed to a temperature higher than Tmax (page 3 of the OMM) .
12. The buyer/guarantee and warranty holder is obliged to properly operate the devices (in accordance with the operation and maintenance manual) and to carry out periodic technical inspections and maintenance activities in accordance with the principles described in this document in the "SERVICE AND MAINTENANCE" section.

In matters not regulated by these warranty conditions, the relevant provisions of the Civil Code shall apply.



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MERCOR and 380-470

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2434-CPR-0407

PN-EN 15650:2010 (EN 15650:2010)

Fire protection cut-off damper

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Nominal activation conditions/sensitivity: - sensor activation temperature - Sensor load capacity (load capacity)	Positive result Positive result
Action time: - closing time	Positive result
Operational reliability:	-
Fire resistance: - Integrity E - Insulation I - Smoke leakage S - Mechanical stability (category E) - Maintenance of the cross section (category E)	EI 240 (v _e i< -- >o)S
Response time stability: - temperature sensor - load capacity - temperature sensor - activation temperature	Positive result Positive result
Operational reliability stability: - opening and closing cycle	Positive result