Fire protection systems

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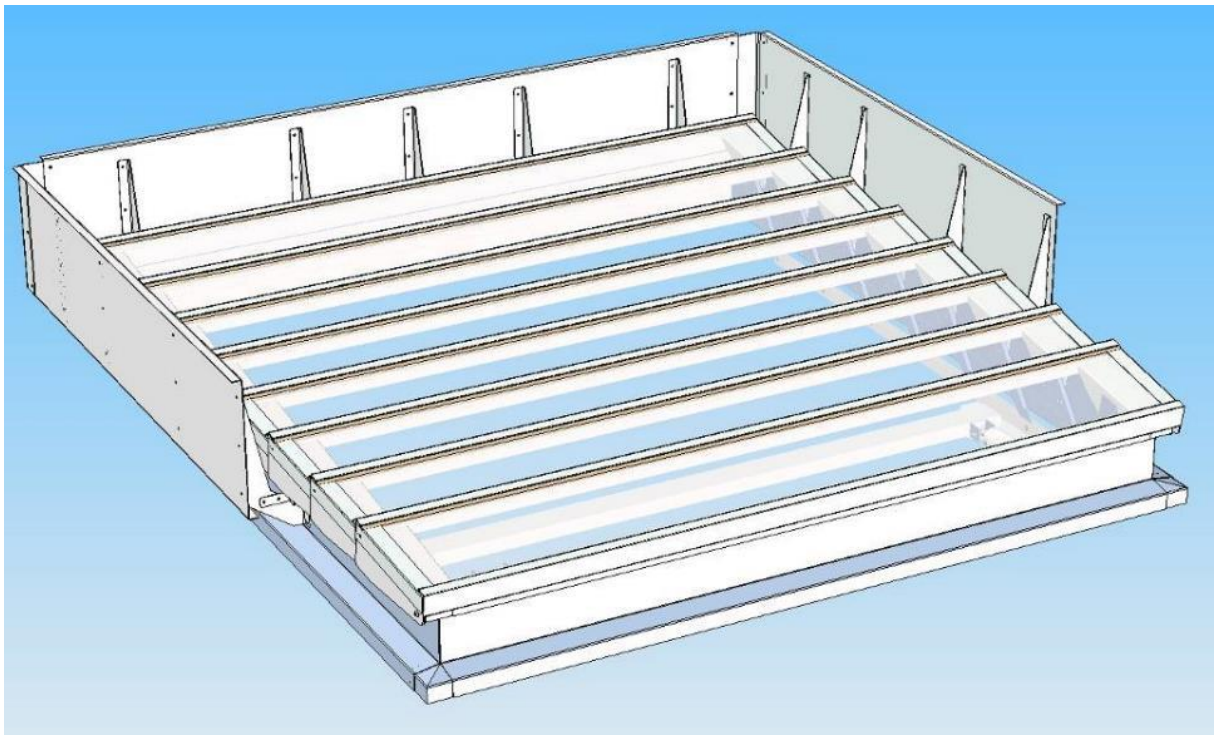
OPERATION AND MAINTENANCE MANUAL mcr LAM vents

mcr LAM louvered natural smoke & heat exhaust ventilators
mcr LAM louvers for daily ventilation



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IMPORTANT !

For safety reasons, the thermal release valve in pneumatically actuated units is not enabled at the factory.

Do not use the unit without prior enabling the thermal release valve.

Enable the thermal release valve and screw in the CO_2 bottle. (Sec. 9.1).

1 INTRODUCTION

The present Operation and Maintenance Manual (OMM) is a source of practical data on the purpose, design, operating principles, good assembling practices, and support of mcr LAM louvered smoke exhaust ventilators. Furthermore, the OMM contains additional information on the conditions of operations, maintenance, and product warranty prerequisites. Consistency with the recommendations contained in this document is a prerequisite for regular operations of the systems which are designed for smoke exhaust and/or daily ventilation systems, as well for user safety.

ATTENTION:

All work connected with the installation, operation, maintenance and servicing of the vents must be carried out in accordance with the principles of health and safety and the use of personal protective equipment appropriate to the type of work involved, including, above all, fall protection equipment. Work connected with staying at height, connecting electrical devices, etc., may only be performed by persons holding the appropriate qualifications.

2 INTENDED USE

mcr LAM louvered vents are automatic opening smoke release devices. Their primary function is to evacuate the products of fire including smoke, fumes and heat from the interior spaces (for example in production and warehousing facilities, public buildings, etc.) to protect human life and property by:

- reducing to the minimum the amount of smoke in the escape routes,
- facilitating the fire-suppression process and operations by creating near the floor a layer containing little smoke,
- protecting the building structure and the furniture, fixtures and equipment,
- limiting the damage caused by smoke, hot fumes and thermal decomposition products.

Smoke vents can also be used for natural ventilation only, or both for smoke exhaust and natural ventilation and can be installed on the building roof to admit natural light.

After deciding to provide the smoke vents in the premises the Owner can enjoy the following benefits:

- lowered hazard class of the building,
- increased maximum fire zone area,
- increased maximum permitted length of escape routes,

mcr LAM natural smoke and heat exhaust louvered ventilators comply with the requirements of EN 12101-2:2003, as confirmed by the certificate of constancy of performance No. 1396-CPR-0032, issued by the notified body No. 1396.

mcr LAM smoke exhaust vents are part of the overall Mercor Light&Vent sp. z o.o. smoke exhaust system, which includes also smoke vents mcr PROLIGHT, mcr ULTRA THERM, mcr S-THERM, smoke vents integrated in mcr PROLIGHT continuous rooflights, mcr PROSMOKE smoke curtains, mcr 9705 and mcr 0204 control units, and other products of this kind.

3 DESIGN AND PRINCIPLE OF OPERATION

Mercor Light&Vent sp. z o.o.'s louvered vents, mounted on rectangular base assemblies, suit a wide range of structural opening sizes. All the steel components are zinc coated in hot-dip or electro-galvanising process. Steel, zinc coated sheet used for vent elements is compatible with EN 10346:2015-09 standard for type A areas. The surfaces of the aluminium sheets used comply with the provisions of the PN-EN 485-1 standard.

The upper part of the base assembly is available in insulated and non-insulated option and the lower part – the roof curb (used in vents higher than 20 cm) is always uninsulated.

Used blade filling types:

- **transparent:** 16 mm thick or 25 mm thick multi-wall polycarbonate panels of varying transparency and thermal conductivity,
- **blind:** two layers of aluminium sheet separated by an air void or insulating material.

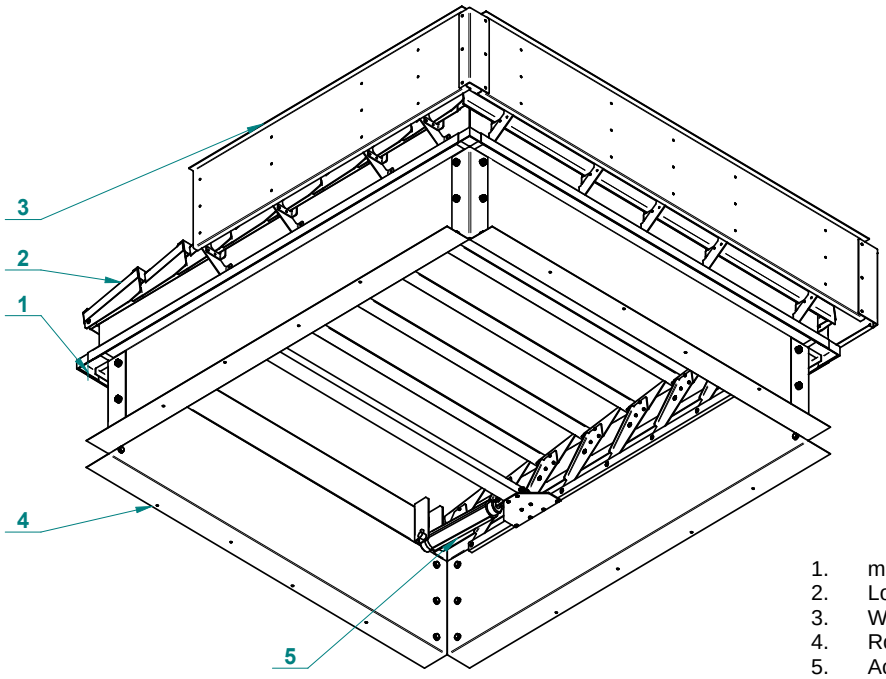
mcr LAM louvered vents come with the following types of actuators:

- **electrical 24 V DC,**
- **pneumatic powered by CO_2** – (smoke exhaust/aeration function) or by compressed air (daily ventilation function),
- **electrical 230 V AC** – (daily ventilation only).

Only pneumatically operated mcr LAM smoke vents are equipped with flow control valves with thermal release valve (including thermal fuse).
mcr LAM smoke exhaust vents for roof assembly are equipped in wind deflectors (tripartite) – (2).

The louvered vents may be operated locally - manually or automatically by thermal release valves (in the case of smoke vents) or remotely by an MCR smoke control panel or fire alarm control panel.

Fig. 1 mcr LAM louvered vent

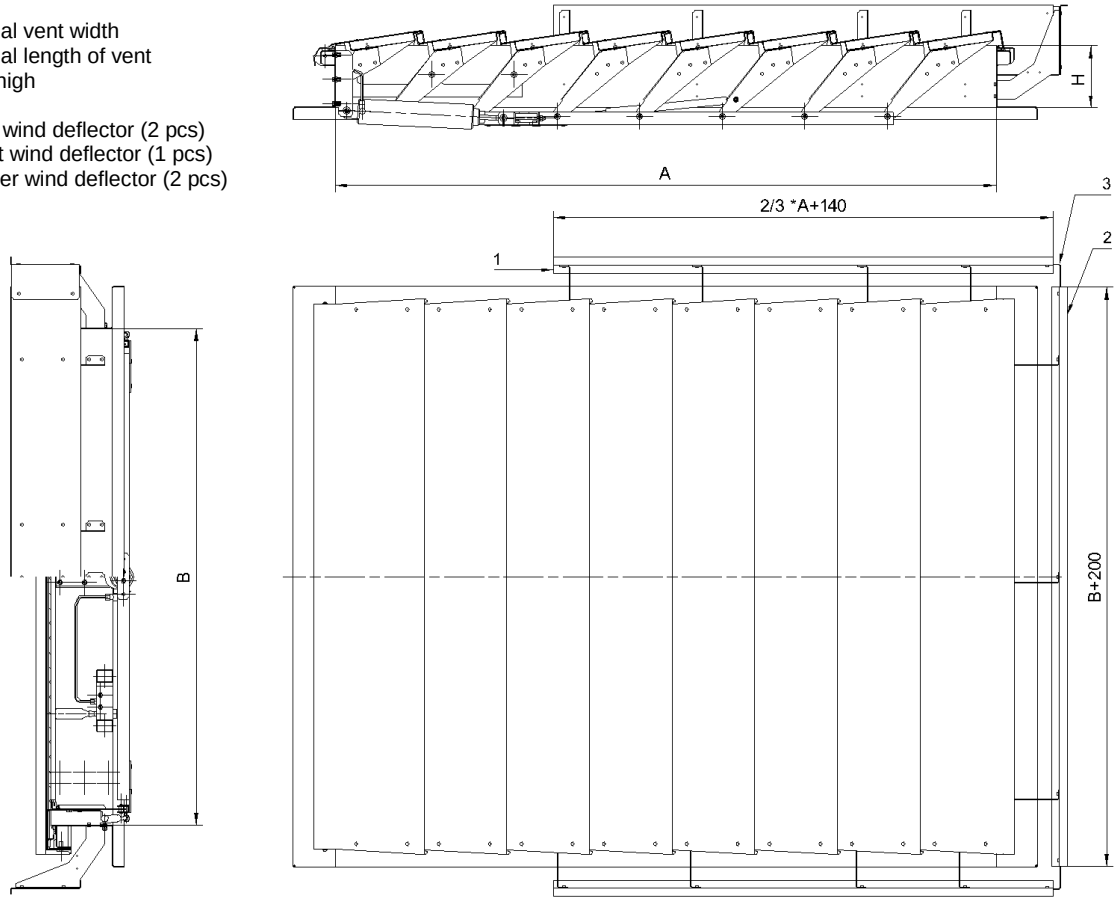


1. mcr LAM vent base
2. Louver blades
3. Wind deflectors
4. Roof curb
5. Actuators

Fig. 2 Main dimensions of the louvre vent. Elements of the three-sided wind deflector of louvre vent.

A - Nominal vent width
B - Nominal length of vent
H - Base high

1. Side wind deflector (2 pcs)
2. Front wind deflector (1 pcs)
3. Corner wind deflector (2 pcs)

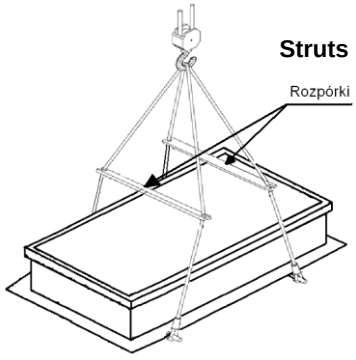


4 SHIPMENT AND DELIVERY

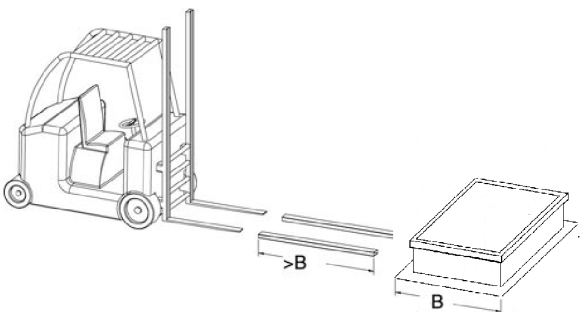
mcr LAM louvered vents are supplied factory assembled, except for additional external flashings, higher base assembles, etc. which, if required, come separately. The roof curbs, i.e. additional base assemblies, always come separately. The reason is to protect the different components from damage during transport and avoid road safety hazards. The vents can be unloaded manually or by means of universal loading equipment in the presence of a person authorised by the manufacturer.

Fig. 3 Handling by means of hoist (a) or a forklift truck (b)

a/



b/



5 INSTALLATION

5.1 General information

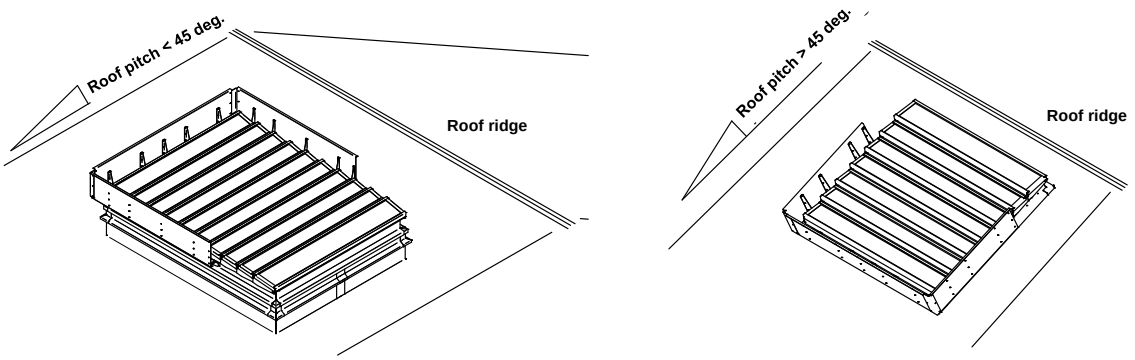
mcr LAM louvered vents are designed for installation on the roof (smoke exhaust function) or in the walls (smoke exhaust and air inlet function).

Roof vents need to be supported by the roof structure components, such as purlins, trimmers, metal decking, curbs, etc.

If the roof pitch is less than 45° the vent should be oriented with the louver blades running perpendicular to the roof ridge and for greater pitches the louver blades should preferably run parallel to the roof ridge (tilt up to open configuration).

In case of setting a vent on existing plinth with horizontal mounting plain, it is recommended to prepare vent prop with 1 … 3° drop along louvered vent's blade.

Fig. 4 Recommended spatial orientation of mcr LAM vent in relation to the roof ridge.



mcr LAM louvered vents can be mounted on steel, concrete or timber roofs. The additional lower base – the plinth – features a ledge at its bottom to support and secure the vent to the supporting structure. The fasteners should be appropriate to the supporting structure material (steel, concrete, timber) and not smaller than 6 mm in diameter. The intervals between fasteners should not be greater than 50÷60 cm.

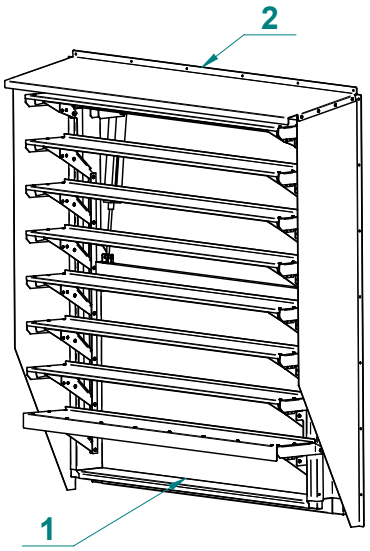
The vent bases are suitable for roofing flashings with roofing paper, PVC membrane or sheet metal.

When installed in walls, the louver blades should be positioned horizontally. In this configuration the louver blades are tilted up to open. The vents in the walls are to be fitted to the structural elements so that the blades are aligned horizontally. Direction of blade opening upwards. Depending on the material of the wall elements (steel, concrete, wood), select appropriate connectors (min. diameter 6 mm). The fasteners should be installed with a maximum spacing of 50÷60 cm.

5.2 Rain shields

The use of a rain shields for wall-mounted vents depend on the depth of the vent's foundation in the wall, but in most cases a rain shield is recommended.

Fig. 5 Mounting position of mcr LAM vent installed in a wall.



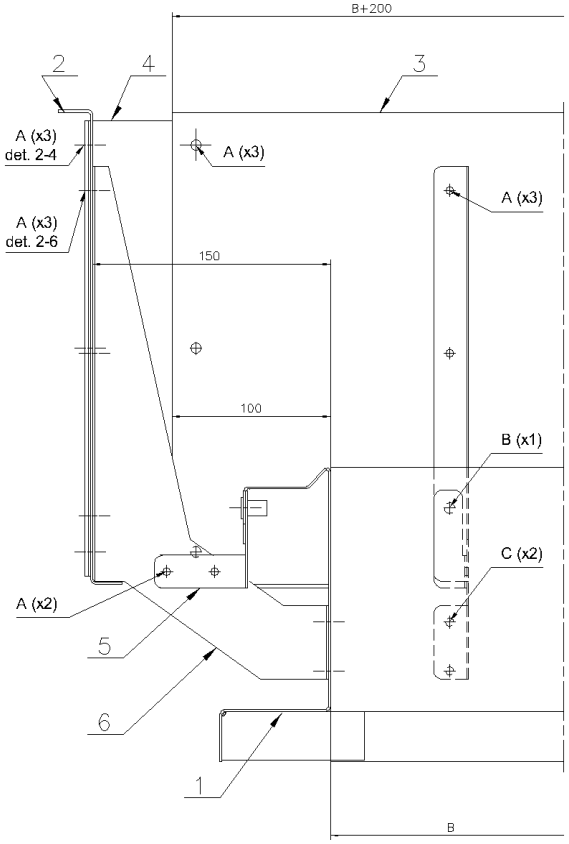
1. Louvered vent
2. Rain shields (optional)

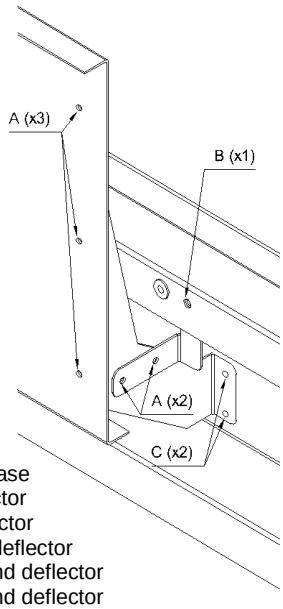
5.3 Wind deflectors

Exceptionally mcr LAM louvered vents meant for roof installation might be delivered without wind deflectors factory fitted. In such case, install wind deflector following the directions included in the figure below, using base connector. Mounting holes are prepared.

Attention: detail no. 5 is delivered in particular cases (for example no isolated vent base or high wind deflector).

Fig. 6 Installation details of the wind deflector supplied separately.



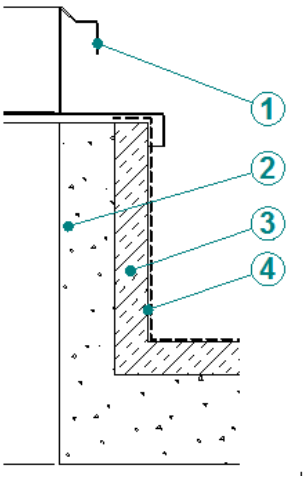


1. mcr LAM vent base
2. Side wind deflector
3. Front wind deflector
4. Corner of wind deflector
5. Console 1 of wind deflector
6. Console 2 of wind deflector

A: ISO 15977 ϕ4.8x12 Al/St rivet (may be C)
B. ISO 15977 ϕ6.4x12 Al/St rivet
C. ISO 15973 ϕ4.8x12 Al/St rivet (sealed)

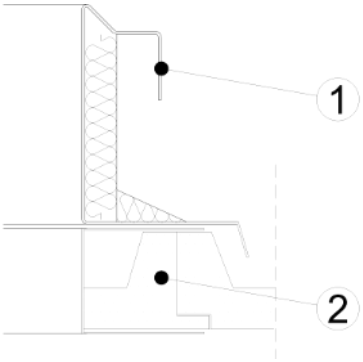
6 ROOF INSTALLATION (EXAMPLES)

Fig. 7 mcr LAM vent mounted on a concrete base.



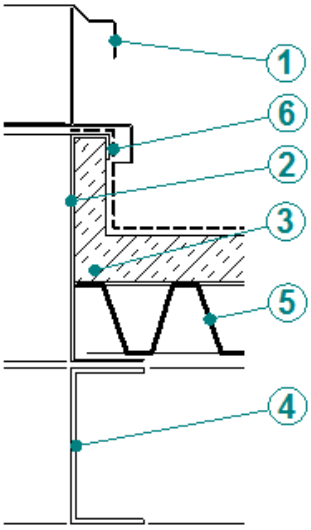
1. Base of mcr LAM vent
2. Concrete curb
3. Concrete curb insulation
4. Waterproofing barrier

Fig. 8 mcr LAM vent installed on a panel roofing system.



1. Base of mcr LAM vent
2. Roofing panel

Fig. 9 mcr LAM vent with roof curb mounted on steel structure.

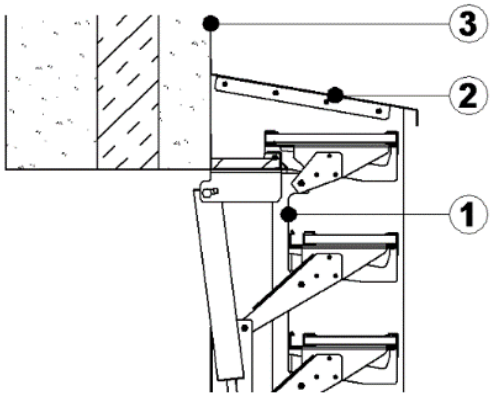


1. Base of mcr LAM vent
2. Roof curb
3. Thermal insulation
4. Steel roof frame
5. Sheet metal decking
6. Waterproofing barrier

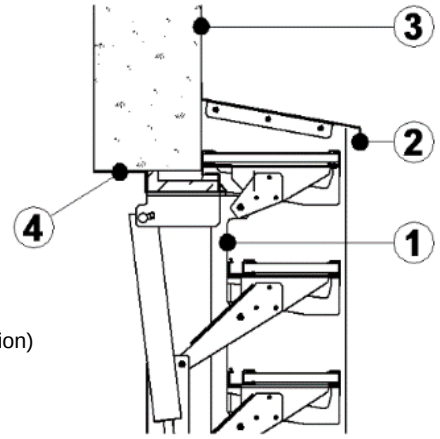
7 WALL INSTALLATION (EXAMPLES)

Fig. 10 mcr LAM vent mounted in a wall.

a/ attached directly to the wall surface

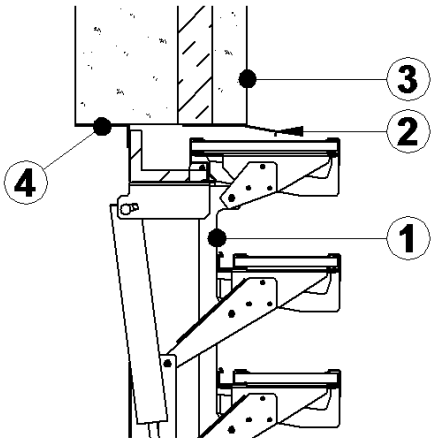


b/ attached using additional elements (option 1)

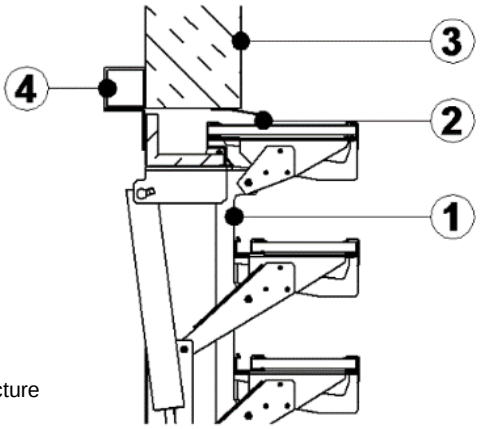


1. mcr LAM vent
2. Rain shield (MERCOR product supplied as an option)
3. Wall or facade
4. Support bracket

c/ in a wall opening, without additional elements (option 2)



d/ attached to the steel frame of the wall



1. mcr LAM vent
2. Drip cap
3. Wall or facade
4. Support bracket or structure

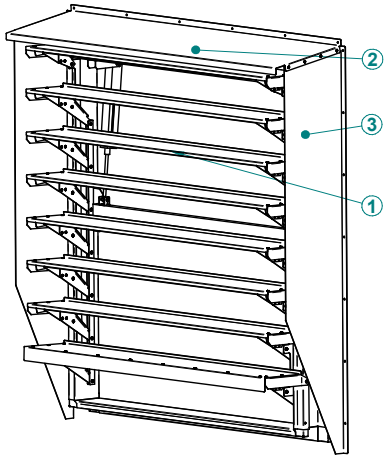
The mounting and fitting details depend on the wall construction and should be determined before installation.

A foam gasket, e.g., PES 40x3, should be used between the vent base and wall elements.

Vents installed in walls should be fitted with rain shields. The rain shields are attached to the vent once it has been mounted in the wall. Use fasteners adequate to the wall type, 4.0 ÷ 4.5 mm in diameter. For fixing the shields to the wall use the pre-drilled mounting holes. The gap between the rain shields and the wall should be filled with the supplied PES 5x20 gasket or butyl tape or a silicone sealant.

With the rain shield in place, the assembly is not as yet weatherproof. To make it fully weatherproof, the joint between the base and the wall surface must be sealed.

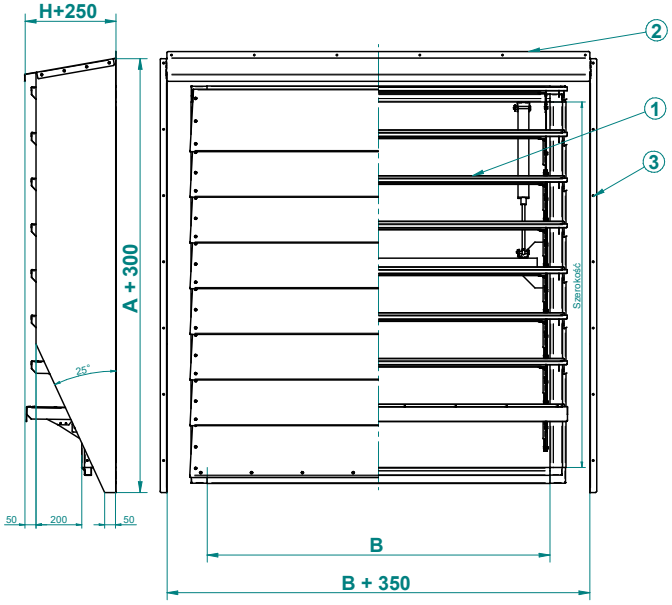
Fig. 11 mcr LAM vent with rain shields



1. mcr LAM vent
2. Rain shield – top plate
3. Rain shield – side plate

A – vent width

B – vent length



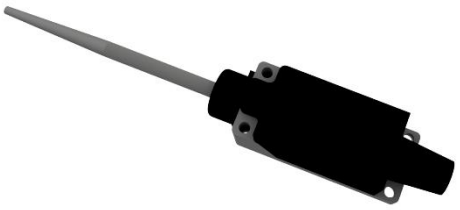
8 LIMIT SWITCHES

mcr LAM vent can be fitted with limit switches to indicate:

- fully open position (1 pc.) or
- fully open position or any mid-position (1 pc.) or
- fully open, fully closed or any mid-position (2 pc.).

The signaling of each of the above is carried out by a ADELID WK-66 limit switch.

Fig. 12 ADELID WK-66 limit switch



The mcr LAM louvered vents are supplied with installed limit switches if this option has been selected in the order. If purchased separately, they are delivered together with the mounting components. The limit switches do not require adjustment after installation.

9 CONTROL

The control systems to open and close the vent blades are an indispensable part of mcr LAM louvered vents. Smoke exhaust control or smoke exhaust and ventilation control systems can be employed in this function. Two type of smoke exhaust control systems are available, each comprising a different set of components:

- **pneumatic** – when the louver blades are opened by a pneumatic actuator or
- **electric** – when the blades are operated by an electric actuator.

9.1 Pneumatic control

mcr LAM louvered vents enable the following use of pneumatic opening system:

C1 – The system used in vents with smoke exhaust and aeration options only. Blades opening occurs as a result of valve activating (mcr LAM) or broadcasting a pneumatic signal from external system (mcr LAM). After opening (regardless the source) vent blades remain permanently open. Closing the vent is conducted manually from the roof. Device doesn't include pneumatic installation to plug in pneumatic close off signal, only one pneumatic wire is required to perform remote signal.

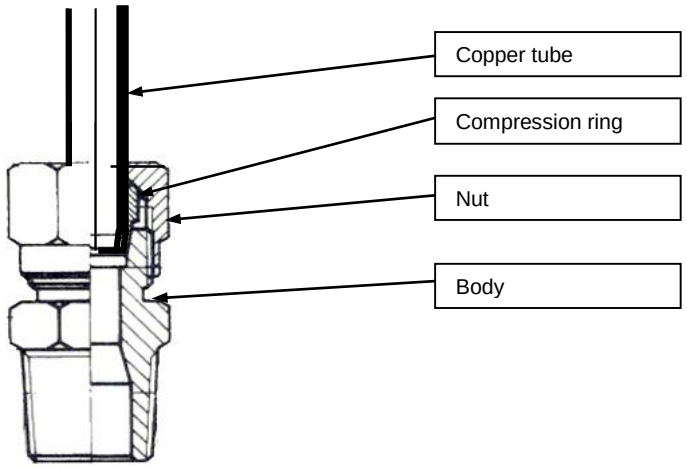
C2 – The system used in vents to exhaust smoke or ventilation and daily aeration. Opening vent blades occurs as a result of valve activating (mcr LAM) or broadcasting a pneumatic signal from external system (mcr LAM). Afterwards (regardless tge source), vent blades remain permanently open. Closing the vent might be conducted remotely with a pneumatic closing signal or manualy from the roof. It is required to use separate pneumatic wires for opening signal and closing signal. C2 system is additionally used when the vent function as a daily ventilation.

C3 – The system used when remote control is required for daily ventilation (or ventilation and smoke exhaust) through one pneumatic wire. Vent opens for ventilation after serving low coefficient pressure on pneumatic actuator (from ventilation installation) and remains open as long as the pressure is served. After cancelling the pressure in electric installation vent blades are closing through embedded gas springs. Adding high coefficient pressure on pneumatic actuator (after triggering valve or pneumatic installation), vent opens to smoke exhaust and stays permanently open. C3 system closing procedure enclosed below.

Depending on the system configuration it may be necessary to connect additional pneumatic lines to the vent (e.g. copper/steel tube connecting to the alarm box including bottles).

Threaded connections of pipe unions with valves, actuators, etc. are sealed by applying appropriate chemical agents, such as Loctite 243 (recommended) or PTFE thread seal tape. To seal the connection with Loctite 243 apply a few (2-3) drops on the tread surface. After the connection has been tightened, the applied Loctite 243 will set, thus protecting the connection from uncontrolled loosening (important for connections of actuators). It is impossible to loosen a union protected in this way other than by means of hand tools.

Fig. 13 Connection of union with a copper/steel air tube.

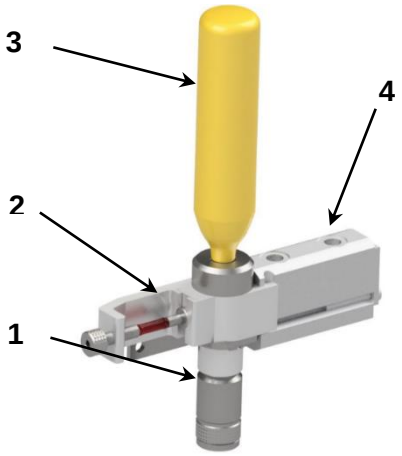


<u>IMPORTANT:</u> For safety reasons, the thermal release valve fitted in the vent is not engaged before shipping. Therefore, the valve must be engaged once the vent has been installed on the roof.

Before arming the thermal release remove all plugs in the connectors and threaded holes of the thermal release body. Then please proceed as follows:

- Type **TAVE-3, TAVZ-3**:
  - check if the **release screw (1)** is unscrewed, and if not, fully unscrew it manually,
  - free the space for the **thermo bulb (2)** of any contamination,
  - insert **thermo bulb (2)** so that the tip points **in the direction of the tension screw** and manually tighten the screw fastening the ampoule
  - slide in the **valve slider (4),**
  - fully tighten the **release screw (1)** – manually,
  - check if the piercing needle is positioned below the bottom of the cartridge socket and if the gasket is present in the cartridge socket,
  - manually screw in the **CO_2 bottle (3).**

Fig. 15 Thermal release valve (on example of TAVZ 3).



- Type **TAVE-4, TAVZ-4**:
  - Screw the **reset tool / single-use reset tool** (Fig. 17) completely into the bottle screw-in thread.
  - free the space for the **thermo bulb (2)** of any contamination,
  - insert thermo bulb so that the tip points in the direction of the **tension screw (1)** and then hand tight fix,
  - remove reset tool / single-use reset tool,
  - Check with the **status gauge** that it is ready for operation (Fig. 14)
  - Screw in **CO_2 bottle (3).**

Fig. 14 Reset tool / status gauge.

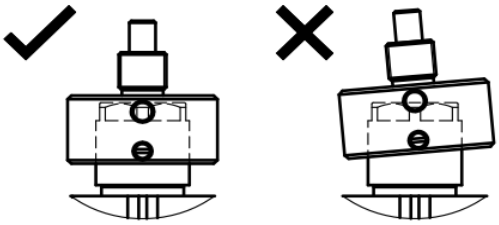


Fig. 16 Thermal release valve (on example of TAVZ 4).

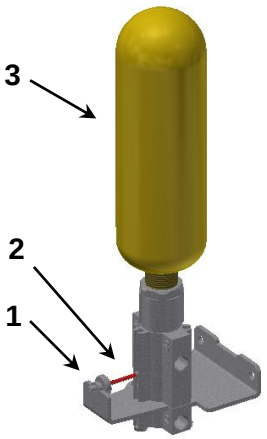


Fig. 17 Single use reset tool.

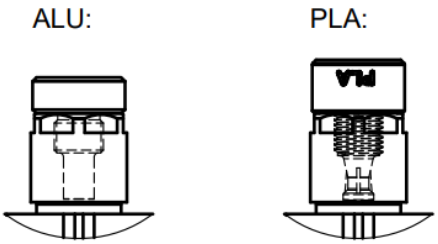
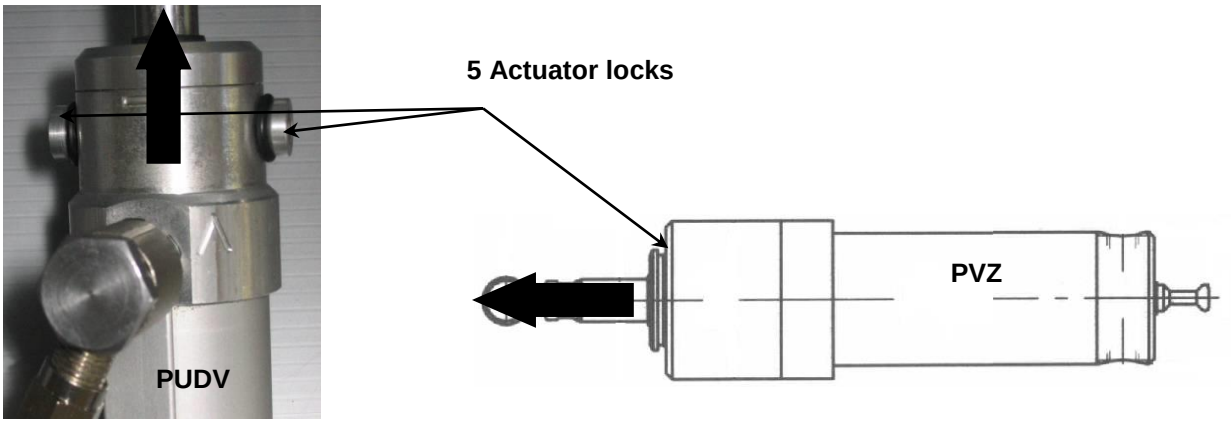


Fig. 18 Pneumatic actuator – lock releasing direction.



The pneumatic actuator for smoke exhaust C1, C2, C3 features integral locks, which prevent opening of the louver blades when the vent is idle or closing them when it has been opened in the emergency mode (to extract smoke) – see Fig. 18.

Closing of pneumatically operated vents after emergency opening – for systems without remote closing function (**C1**):

1. Release CO_2: unscrew the bottle from the thermal release valve or alarm box (Warning: high pressure – unscrew slowly: the CO_2 bottle may frost over).
2. Release the actuator locks (5) by lifting them in the motion direction of the actuator (shown by arrow in Fig. 18 Pneumatic actuator – lock releasing direction.).
3. Tilt down the louver blades.
4. Check closing status.
5. Fit a new CO_2 bottle in the thermal release valve or in the alarm box.
6. The thermal fuse (thermo bulb) should be replaced if needed (2).

WARNING: In the case of TAVx-4, first remove the CO_2 cylinder, then insert the reset tool, and only then remove the ampoule by loosening the ampoule tensioning screw. Skipping the previous steps will result in damage to the TAVx-4.

Closing of vents fitted with a pneumatic actuator and a gas spring after emergency opening – for systems without remote closing function with ventilation box (**C3**):

1. Release CO_2: unscrew the bottle from the thermal release valve or alarm box (Warning 1: high pressure! unscrew slowly! Warning 2: the CO_2 bottle may frost over).
2. Move the ventilation box valve lever to the vent opening position.
3. After ca. 5 sec. move the ventilation box valve lever to the vent closing position.
4. Fit a new CO_2 bottle in the thermal release valve or in the alarm box.
5. The thermo bulb (alcohol filled glass bulb) should be replaced if needed (2). **WARNING: In the case of TAVx-4, first remove the CO_2 cylinder, then insert the reset tool, and only then remove the ampoule by loosening the ampoule tensioning screw. Skipping the previous steps will result in damage to the TAVx-4.**

Method of closing a vent with a pneumatic actuator after an alarm opening for systems with remote closing function (**C2**): remove the medium (bleed) from the part of the pneumatic system responsible for opening, then supply CO_2 or compressed air to the pneumatic line "closing".

9.2 Electric control

9.2.1. Louvered smoke and aeration vents

The vent opening / closing system, based on 24 V DC electric actuator, used for smoke exhaust, is pre-installed at the factory.

Wiring diagram of Gxx actuator (polarity of conductors):

Brown +	Rod is withdrawn	Brown –	Rod is extended
Blue –	(vent closes)	Blue +	(vent opens)

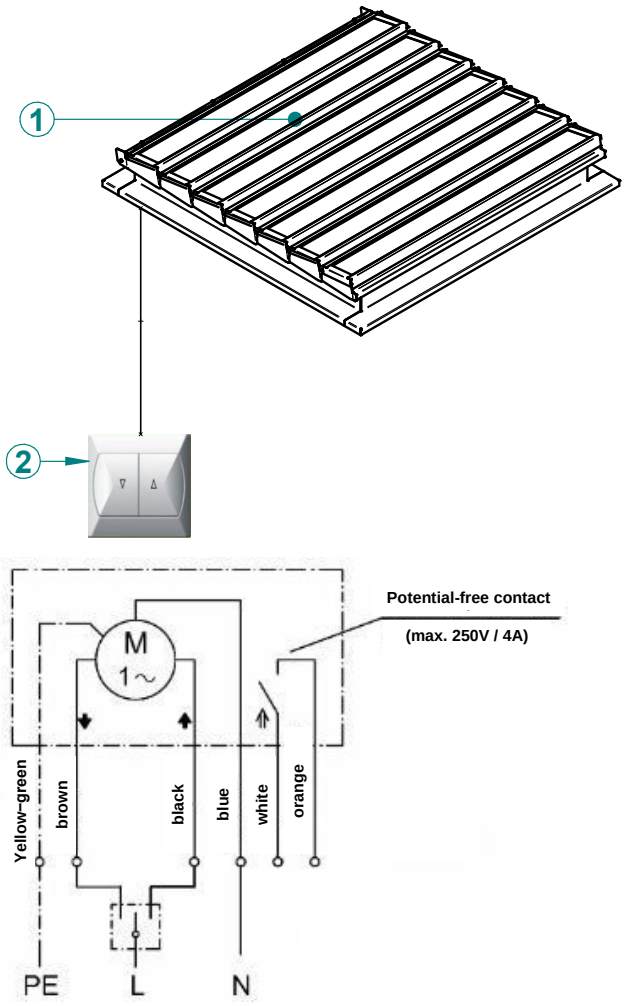
mcr 9705, mcr 0204 smoke exhaust and daily ventilation control units with mcr R0424 and/or mcr R0448 extension modules are used to supply electricity and control the MCR-W actuators fitted in mcr LAM louvered vents.

9.2.2. Louvres for daily ventilation with 230 V AC actuator

The vent opening/ closing system, based on 230 V AC electric actuator, used for daily ventilation, is pre-installed at the factory.

Below is the wiring diagram for connection of the actuator to the mains, via LT (or equivalent) ventilation switch.

Fig. 19 Wiring diagram for connection of 230 V AC louvered vent actuator.



1. mcr LAM louvered vent with 230 V AC electric actuator
2. LT ventilation switch

9.3 Use of louvered smoke vents for daily ventilation

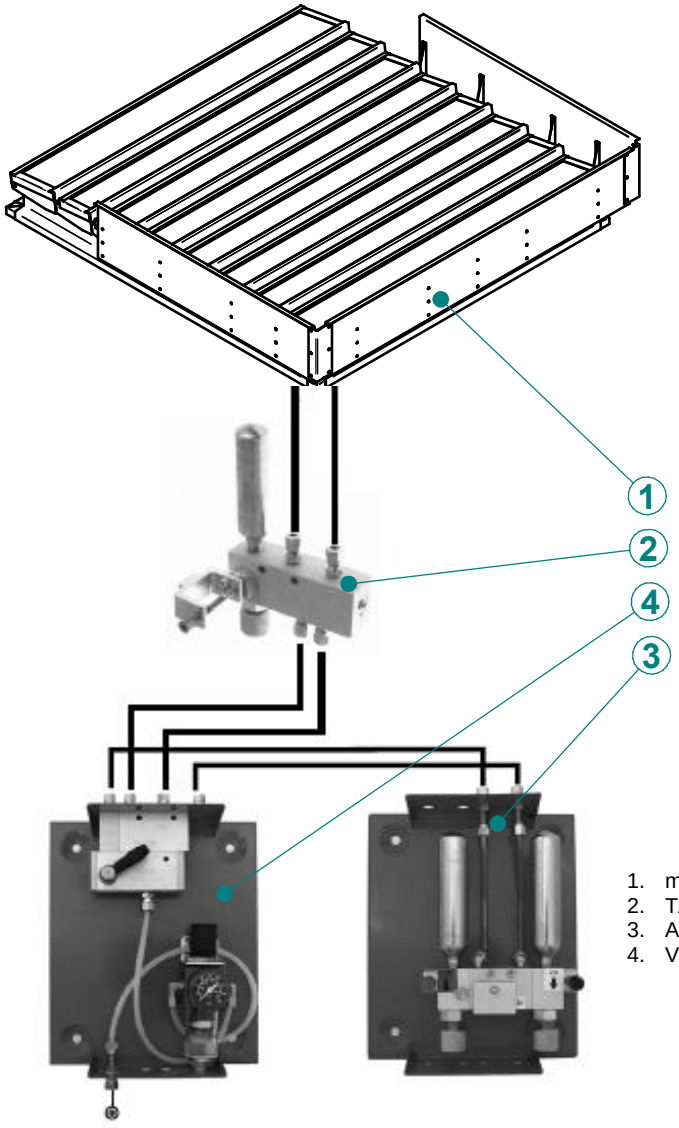
The ventilation function is realized in louvre vents by means of actuators used to open the vents for smoke extraction.

Louvre vents with C2 or C3 control can be used for ventilation.

In order to use the mcr LAM vents with the C2 control for the ventilation function, the pneumatic system must be equipped with the PLZ or LUK ventilation boxes (with a two-circuit priority valve, e.g. VVAZ, when the vents are opened for smoke exhaust by the alarm boxes) and the vents must be equipped with the TAVZ type thermal release.

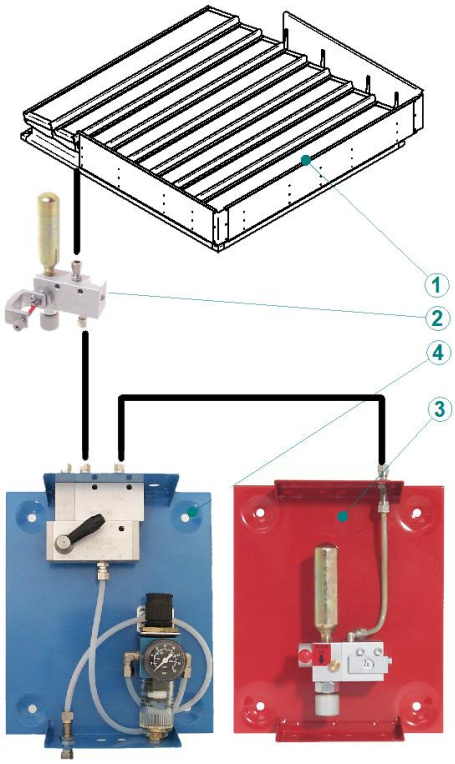
In order to use the mcr LAM vents with C3 control for ventilation functions, the pneumatic system must be equipped with special ventilation boxes (with a single-circuit priority valve, e.g. VVZ, when the vents are opened for smoke removal by alarm boxes) intended for cooperation with a single-circuit pneumatic system. The pressure used for ventilation in C3 systems should not exceed 0.5 MPa (5 bar).

Fig. 20 Pneumatic diagram showing connection of mcr LAM louvered vent equipped with a pneumatic actuator (type control C2) with the alarm and ventilation boxes.



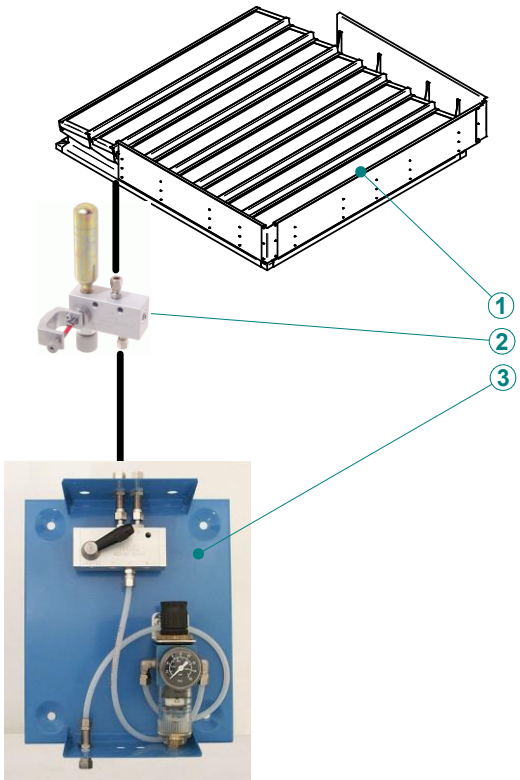
1. mcr LAM vent equipped with a pneumatic actuator
2. TAVZ thermal release valve (mounted in the actuator)
3. AK series alarm box
4. Ventilation box with a priority valve (such as LUK2 or PLZ)

Fig. 21 Pneumatic diagram showing connection of mcr LAM vent (type control C3).



1. mcr LAM vent with a pneumatic actuator and gas spring
2. TAVZ thermal release valve (mounted in the vent)
3. AK series alarm box
4. Ventilation box with a priority valve (such as LUK2 or PLZ)

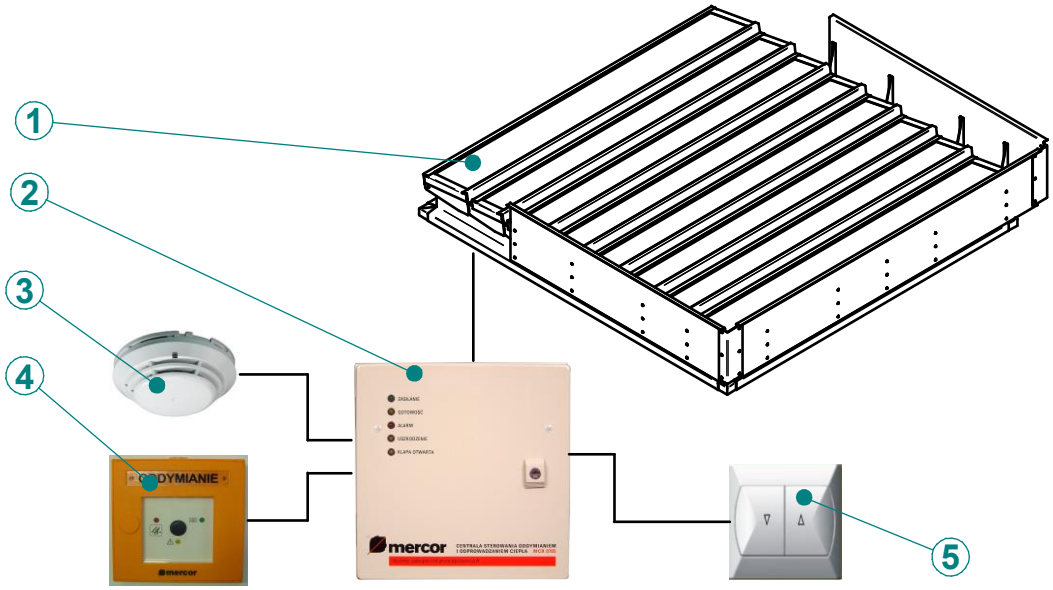
Fig. 22 Pneumatic diagram showing connection of mcr LAM vent equipped with a pneumatic actuator and gas spring (type control C3) with alarm and ventilation boxes.



1. mcr LAM vent equipped with a pneumatic actuator and gas spring
2. TAVZ thermal release valve (mounted in the vent)
3. Ventilation box (such as LUK2 or PLZ)

In in order to use vents equipped with 24 V DC electric actuator for daily ventilation it is necessary to connect the LT ventilation switch to the control unit in accordance with the wiring diagram included in the control unit Operation and Maintenance Manual (OMM).

Fig. 23 Idea diagram showing connection of mcr LAM vent fequipped with 24 V DC electric actuator (type control E1) to enable its use for daily ventilation.



1. mcr LAM vent equipped with 24 V DC actuator
2. Control unit
3. Optical smoke detector
4. RPO-1 emergency pushbutton
5. LT ventilation switch

A control unit with integrated wind/rain module is recommended, such as mcr P054, in order to close the vents during strong wind or rain, thus protecting the property and the vents from damage. The control unit must be connected according to the wiring diagram included in the Operation and Maintenance Manual (OMM).

10 MAINTENANCE AND INSPECTIONS

The user of Mercor Light&Vent sp. z o.o. equipment **shall ensure periodic inspection** and maintenance **every six months** throughout the whole period of operation, both during and after the warranty period.

Therefore, adequate means of access must be provided to enable carrying out periodic inspections, maintenance and warranty repairs of the equipment concerned. The equipment installed on the roof must be accessible by adequate means of access (ladder or lift).

In addition, between the successive inspections it is recommended to:

1. Check the electrical lines, paying particular attention to any mechanical damage.
2. Check the pneumatic lines, focusing on mechanical damage, paying particular attention to any mechanical damage, leak and slack.
3. Check the hook brackets (verify if they are fully closed and not blocked).
4. Check if the leaf hold frame is securely fixed and the seals about the leaf infill.
5. Periodically clean the domes, polycarbonate panels. use a sponge or soft cloth and lukewarm water with some amount of a typical, mild household cleaner. Do not scrub the panels with brushes or sharp utensils. Do not use abrasives, strong alkaline substances, solvents, etc. If unsure, try the cleaner on a sample or small area of the product.
6. Due to natural environmental processes, water vapour may condensate inside the cells of polycarbonate panels. A mist forms in most cases and clearly seen drops can also appear if humidity is really high. Subject to ensuring diffusion of air between the cells and the outside environment the levels of humidity will equalise and the above-described visual effects should disappear.

Condensation of water vapour does not compromise the service life of the material or the quality of the product.

NOTE:

Do not use ice melt salts on roofs where there are mcr LAM louvered vents. Salt can discolour or even damage the polycarbonate panels, acrylic domes or aluminium sections. Note that the resulting damage is not covered by the warranty.

11 WARRANTY TERMS AND CONDITIONS

1. Mercor Light&Vent sp. z o.o. grants a 12-month quality guarantee for equipment, starting from the date of purchase, unless the agreement provides otherwise.
2. Each defect under guarantee should be reported to a local representative of Mercor Light&Vent sp. z o.o. immediately, i.e. within 7 days of its discovery.
3. Applications can be made by phone at +48/ 58 341 42 45, by email to claim@mercor.com.pl or by sending a letter to: Mercor Light&Vent sp. z o.o., Grzegorza z Sanoka 2, 80-408 Gdańsk, Poland.
4. If during the term of guarantee any physical defects of the equipment become evident, Mercor Light&Vent sp. z o.o. shall remove them as soon as possible, subject to paragraph 5.
5. Mercor Light&Vent sp. z o.o. reserves the right to lengthen the repair time in the event of complicated repairs or those that require non-standard sub-assemblies [elements] or spare parts to be purchased.
6. Liability under the Guarantee covers only defects resulting from causes inherent in the equipment sold.
7. In the event of defects resulting from inappropriate operation of the equipment or due to other reasons stated in par. 6, the Buyer/ Guarantee Holder shall bear the costs of their removal.
8. In accordance with the generally accepted practice, the guarantee does not cover:
   - damages and breakdowns of the equipment due to inappropriate operation, user's interference, lack of maintenance or periodic servicing;
   - equipment damages resulting from causes other than those that Mercor Light&Vent sp. z o.o. is responsible for, in particular: acts of God such as torrential rainfall, flood, hurricane, flooding, stroke of thunder, overvoltage in the mains, explosion, hail, fall of aircraft, fire, avalanche, landslide and secondary damages due to the above-listed causes. Torrential rain is defined as rain with an efficiency index of at least 4 (or 5 in Chomicz scale or torrential rain grade IV (A_4)). Should it be impossible to determine the index mentioned in the previous sentence, the actual condition and the degree of damage at the place of its origin proving that it is the consequence of torrential rain will be considered. Hurricane is defined as wind blowing at the speed of at least 17,5 m/s (damages are deemed to have been caused by hurricane if the effects of hurricane have been found in the immediate neighborhood);
   - damages due to failure to immediately report the defect discovered;
   - worsened quality of coating due to the natural ageing process (fading, oxidation);
   - defects due to using abrasive or aggressive cleaning products;
   - damages due to aggressive external factors, especially chemical and biological ones.
   - parts liable to natural wear and tear during operation (e.g. seals) unless a manufacturing fault has occurred;
   - damages due to improper transport, unloading and storage of the device;
   - damages due to installation inconsistent with the OMM and the rules of good construction practice;
   - ingress of dust, particles or solids with the effective grain size below 50 µm into the polycarbonate sheet chambers;
   - condensation in the polycarbonate sheet chambers.
9. Guarantee and warranty is void in the following cases:
   - The Buyer/Guarantee Holder makes design modifications on his own without consulting Mercor Light&Vent sp. z o.o.,
   - Maintenance or periodic servicing are not done in due time or are performed by unauthorized persons or a service center not authorized by Mercor Light&Vent sp. z o.o., or the equipment is operated in the wrong way,
   - Any interference of unauthorized persons – except activities connected with normal operation of the equipment.
10. The Buyer/Guarantee Holder is responsible for proper operation and maintenance of the equipment and for regular (min. twice a year) servicing according to service and maintenance instructions included in OMM.

SERVICING INSPECTIONS:

1. Devices should be subject to periodical servicing inspections every 6 months during the entire period of their operation.
2. The servicing inspections should be performed by companies having adequate authorization of Mercor Light&Vent sp. z o.o.
3. On issues related to service please contact a local representative of Mercor Light&Vent sp. z o.o.

Other conditions:

1. As regards matters not regulated by these “Warranty terms and conditions”, the law applicable is Polish law.
2. Any disputes that may arise in connection with the “Warranty terms and conditions” shall be settled through negotiations between the Parties. This provision is not an arbitration clause.
3. If the Parties fail to reach an agreement by negotiation, any disputes arising from or related to the contract shall be settled by the Polish court competent for the seat of the Seller.

12 CERTIFICATE OF CONSTANCY OF PERFORMANCE

SNAS
Reg. No. 041/P-007

NOTIFIED BODY 1396
Osloboditeľov 282, 059 35 Batizovce, Slovakia
Tel.+421 52 285 1611, www.fires.sk

FIRES
The Experts on Fire Safety

Certificate of constancy of performance

1396-CPR-0032

In compliance with Regulation (EU) No 305/2011 of the European Parliament and of the Council of 9 March 2011 (the Construction products Regulation or CPR), this certificate applies to the construction product

Natural smoke and heat exhaust ventilator
louver-type mcr LAM

a device designed to move smoke and hot gases out of construction works naturally under conditions of fire. Assessment and verification of constancy of performance and conditions of product use are defined in document Initial type testing report of constructional product No. C1396/08/0042/5003/SC (issued by FIRES, s.r.o., Batizovce, NB1396 on 26. 05. 2009) and reports of continuous surveillances of factory production control, carried out during the validity of the certificate. The product is

placed on the market under the name or trade mark of the manufacturer

Mercor Light&Vent sp. z o.o.
ul. Grzegorza z Sanoka 2, 80 – 408 Gdańsk, Poland

and produced in the manufacturing plant

Mercor Light&Vent sp. z o.o.
ul. Kwarcowa 3A, Cieplewo, 83-031 Łegowo, Poland.

This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard

EN 12101-2: 2003

under system 1 for the performance set out in this certificate are applied and that the factory production control conducted by the manufacturer is assessed to ensure the

constancy of performance of the construction product.

This certificate was first issued on 26. 05. 2009 and will remain valid as long as neither the harmonized standard, the construction product, the AVCP methods nor the manufacturing conditions in the plant are modified significantly, unless suspended or withdrawn by the notified product certification body.

Representative of Notified Body

NOTIFIKOVANÁ OSOBA 1396 FIRES The Experts on Fire Safety -1- NOTIFIED BODY 1396

In Batizovce, on 30. 04. 2025

Ing. Štefan Rástocký
Head of Product Certification Body

173654

FIRES 136a/C-23/10/2024-E