Mercor Light&Vent sp. z o.o.
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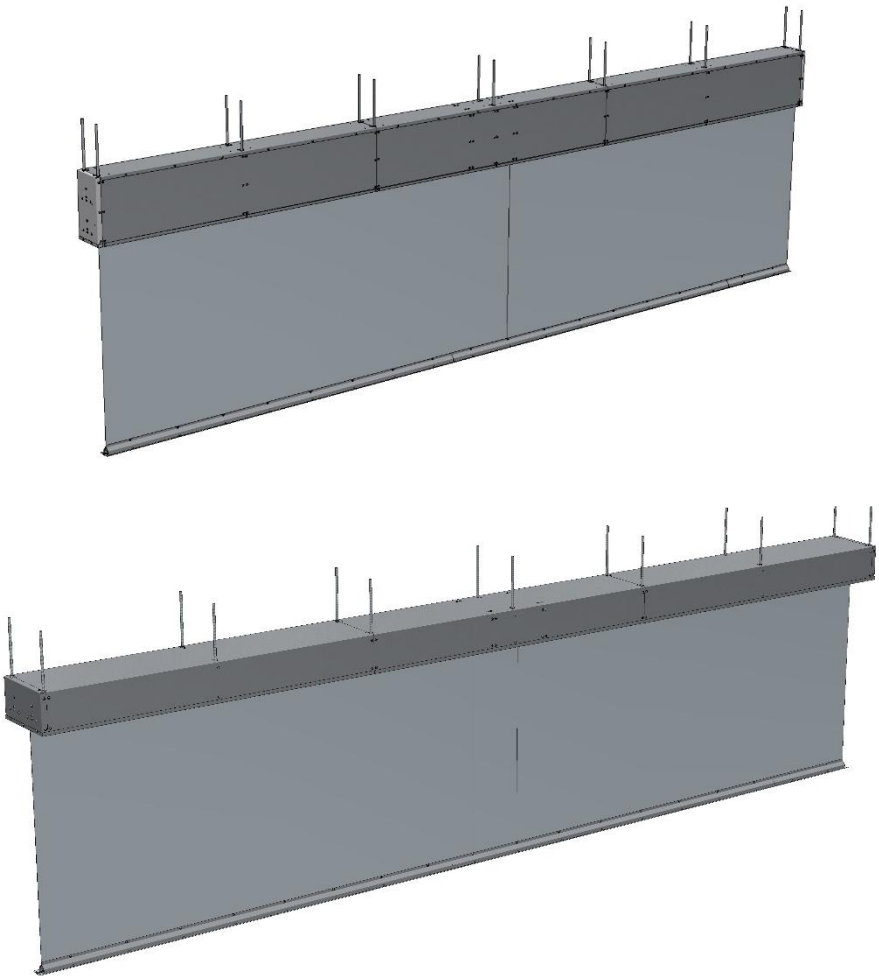
OPERATION AND MAINTENANCE MANUAL
Automatic curtain mcr PROSMOKE ONE C



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1 INTRODUCTION

The aim of this Operation and Maintenance Manual is to make the user familiar with the intended use, design, operating principle, correct installation and operation of mcr PROSMOKE ONE C automatic rolling curtains. The OMM also contains additional information on the conditions of use, maintenance and warranty of the product.

Complying with the recommendations included in the OMM will ensure proper functioning of the smoke venting systems as well as the safety of their users.

Mercor Light&Vent reserves the right to make changes to the product or to this document without prior notice.

The Operation and Maintenance Manual applies to mcr PROSMOKE ONE C curtains equipped with end switches for smooth adjustment of the upper and the lower positions (by using the R60/8G electric motor manufactured by BECKER – Antriebe GmbH).

2 PURPOSE OF THE DEVICE

mcr PROSMOKE ONE C rolling curtains form part of a smoke control system also including other products by Mercor Light&Vent, such as point smoke vents mcr PROLIGHT, mcr ULTRA THERM and mcr S-THERM, mcr LAM, mcr OSO THERM, smoke vents integrated in continuous rooflights and skylights of the mcr PROLIGHT system, mcr 9705 and mcr 0204 smoke control panels, and others.

mcr PROSMOKE ONE C rolling curtains are used to define the smoke zone in the space under the ceiling in smoke and heat gravitational exhaust systems. Fire smoke is collected in the smoke containers and then is removed by smoke exhaust vents, e.g. mcr PROLIGHT. Defining a smoke zone in the space under the ceiling, the curtains confine the spread of smoke, prevent it from cooling off and form a smoke layer of a designed thickness, ensuring appropriate conditions for smoke exhaust vents to operate in.

mcr PROSMOKE ONE C smoke curtains have a certificate of conformity CE No. 1396-CPR-0133, meeting the requirements of the 12101-1:2005/A1:2006 standard, granted by notified certification body No. 1396.

It is the designer of the building who is responsible for designing a smoke exhaust system properly and choosing appropriate curtains for a particular application. mcr PROSMOKE ONE C curtains are not intended for use as smoke-tight doors.

The curtains are fire-protection devices, and as such may not function as gates or the like and are not designed for daily operation/use for other purposes.

3 STRUCTURE OF THE CURTAINS

Rolling curtains consist of a casing, a roller with smoke-tight fabric rolled up with bottom ballast, and a drive system (Fig. 1).

The casing is a three-piece one, having a fixed part and two inspection covers made as S, V, H types (Fig. 2**Błąd! Nie można odnaleźć źródła odwołania.**).

The roller is mounted by means of integrated catches, which are inserted into the appropriate brackets located inside the casing.

The drive system installed in the roller consists of a 24 V DC motor with a built-in brake released electrically.

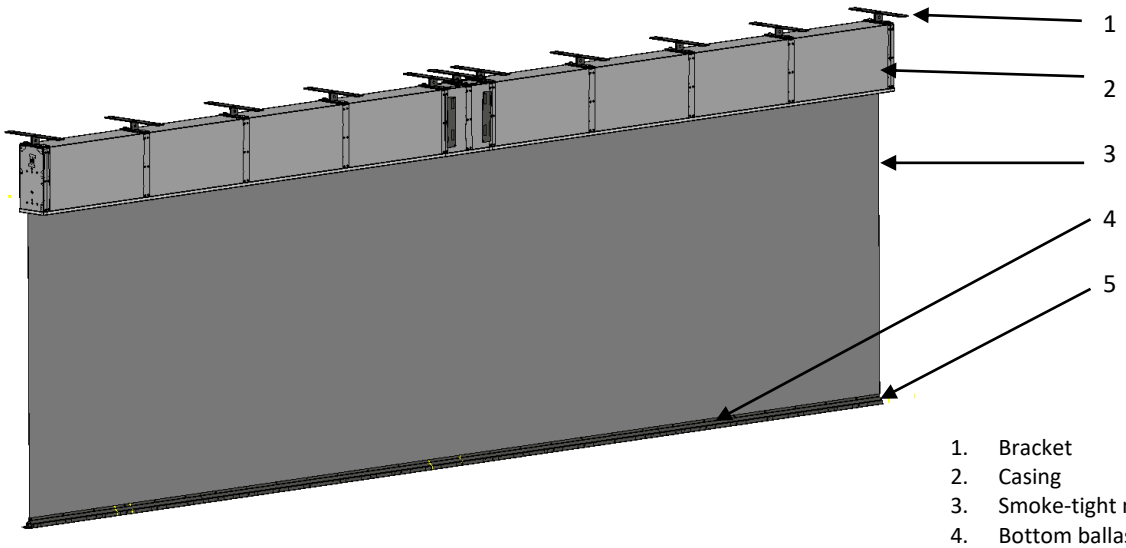
that it is properly unrolled or rolled up, and minimising its deflection or ascent due to the pressure of fire gases.

The masking element is an aluminium profile 60 mm in width, painted in any RAL colour depending on the order.

The smoke-tight material used in mcr PROSMOKE ONE C curtains is not trimmed at the edges, and it becoming slightly frayed on the edges is a natural process that does not affect the use or the quality of the product.

Single curtains (type S) are made with a length of up to 5.45 m. For curtains longer than 5.45 m, they are made using V- or H-type casings.

The steel sheets used in the curtains comply with the PN-EN 10346:2015-09 standard for surface type A.

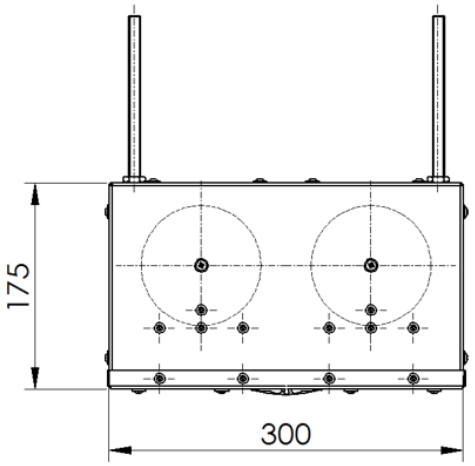


1. Bracket
2. Casing
3. Smoke-tight material
4. Bottom ballast
5. Masking element

Fig. 1 Structure of the mcr PROSMOKE ONE C roller curtain.

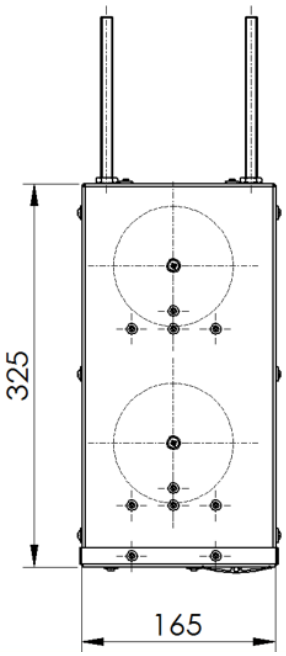
Curtain with multiple rollers

CASING TYPE „H"



Curtain with multiple rollers

CASING TYPE „V"



Curtain with single roller

CASING TYPE „S"

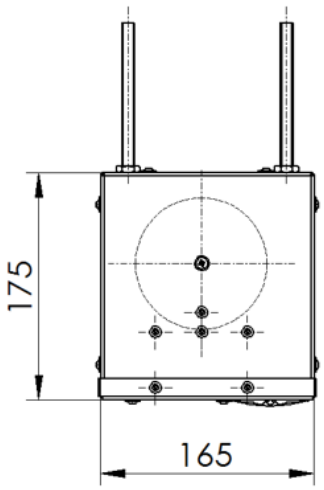


Fig. 2 Types of casings for mcr PROSMOKE ONE C.

NOTE: Keep the rectilinearly and the flatness of the surface of suspended ceiling near the gap of 5 mm / 5000 mm.

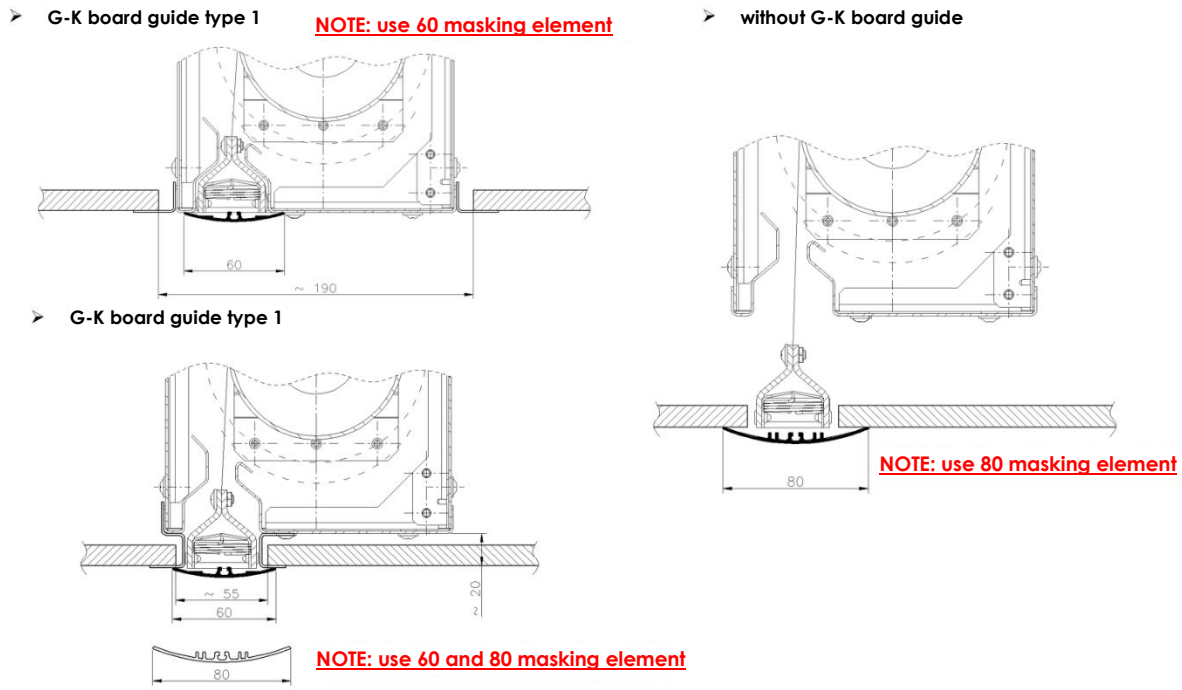


Fig. 3 Recommended position of casings relative to the ceiling. Gap width.

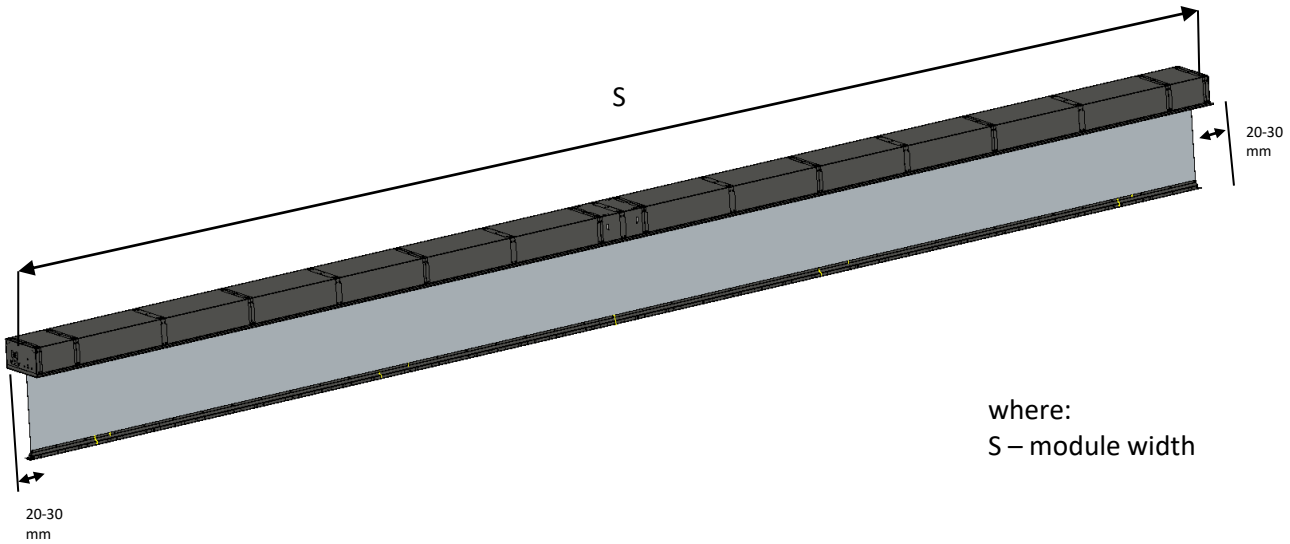


Fig. 4 Gap sizes in the longitudinal direction of mcr PROSMOKE ONE C curtains.

4 OPERATING PRINCIPLE OF mcr PROSMOKE ONE C CURTAINS

When in standby mode, mcr PROSMOKE ONE C rolling curtains are hidden in casings. In case of fire, they automatically roll out to the predetermined height.

The mcr PROSMOKE ONE C rolling curtain must be connected to the mcr 9705-5A/8A smoke exhaust control unit (optionally with mcr R0424/48 extension modules) in order to operate properly.

After the control unit is switched to alarm mode, a 24 V DC voltage is supplied to the curtain motor, the curtain is unrolled to the position to which the bottom limit switch is set.

After the control unit is restored to standby mode (alarm reset), the curtain rolls up using the motor (a voltage with reversed polarity is supplied). The fabric rolls up until it reaches the height set by the upper limit switch of the motor – at this point, the curtain enters the holding position in the rolled-up state.

The mcr PROSMOKE ONE C curtain does not require power supply to remain in the rolled-up position.

5 TRANSPORT AND DELIVERY

The curtains are delivered in modules. Some modules consist of casings with a roller with fabric, casing without roller, separate roller with fabric, lower masking elements, and bottom ballast (Fig. 5). The unloading should be carried out when supervised by a person authorised by the manufacturer, using widely available reloading means (e.g. forklift trucks, cranes equipped with slings with crossbars) or manually while special care is exercised to protect the curtains from damage.

6 INSTALLATION OF CURTAINS

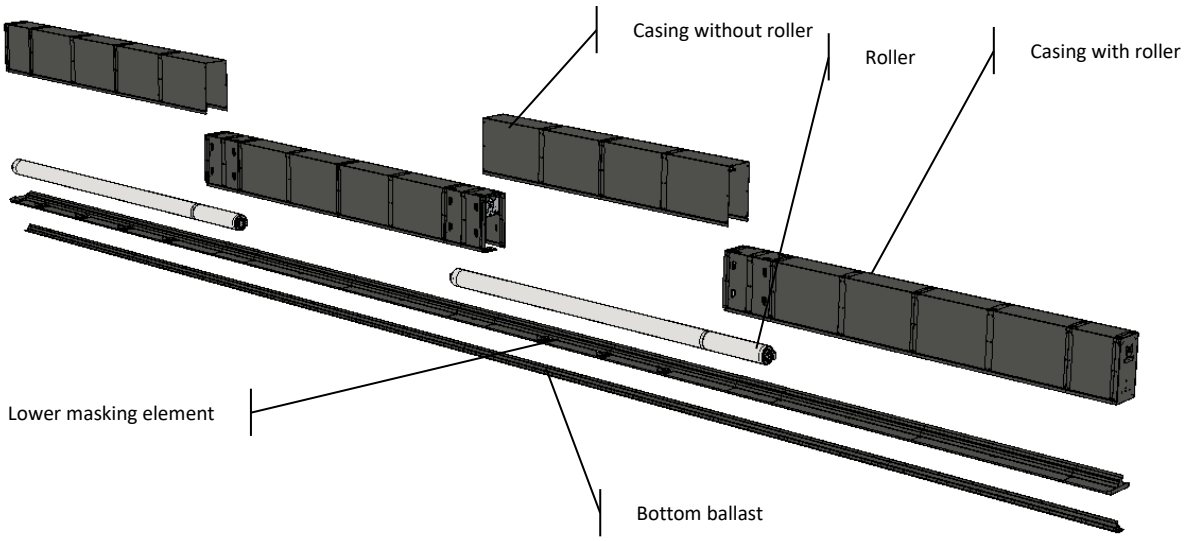


Fig. 5 Curtain components in the delivery.

NOTE:

Inside the casing of curtains longer than 4 m, protective sponges have been placed around the curtain roller. These must be removed before connecting the curtain to the power supply. Leaving the sponge in place may cause damage to the drive or fabric.

Curtains should be installed in the building in accordance with the construction design to maintain the specified gap dimensions. If the construction project does not include guidelines, the installation of curtains should follow the principles from CEN/TR 12101-4 and CR 12101-5.

Curtains should be fitted under the ceiling and to the lintels, prepared constructions or other elements of the building that are designed for that purpose. The bearing element should be made of reinforced concrete or steel. Depending on the height of the curtain, the design of the bearing element must allow for the weight of the device, approx. 200 ÷ 300 N/mb. In the case of the curtains without the installation handles, the mounting plane should be vertical or horizontal, with a flatness deviation of up to 5 mm along the length of the curtain.

Order of installation of the curtain:

1. **The PROSMOKE ONE C curtain is delivered to the construction site in modules (Fig. 5). Assemble the modules and curtain components according to the detailed curtain installation instructions.**
2. Mount M10 threaded rods of suitable length in the structural component to match the arrangement of brackets (Fig. 9). To mount the threaded rods, use fasteners suitable for the structural component material (e.g. HK8 HILTI anchors). In case of installation without suspension bracket, the arrangement of rods should correspond to the arrangement of holes in the curtain casing.
3. Screw M10 nuts onto the rods.
4. Hang the curtain on the rods using a M10 rough finish washer and a nut with protection cap.
5. Using the nuts, adjust the horizontal position of the curtain casing.
6. Tighten the nuts screwed according to point 2 and check that the connections are firm.
7. Connect the motor of the curtain to the mcr 9705 control unit or the R042-K or mcr R0448-K extension module according to the diagram contained in the operation and maintenance manual of control unit or the module.
8. Install lower covers.
9. Check that there are no obstructions under the curtain and the curtain unrolls to the required height and is rolled up correctly. If necessary, adjust the length of the extension of the fabric (7 ADJUSTMENT OF THE LIMIT SWITCHES.).
10. Install the linear weight on the previously adjusted fabric.
11. Check the operation of the system by triggering the alarm from all the available sources.

6.1 Electrical connections.

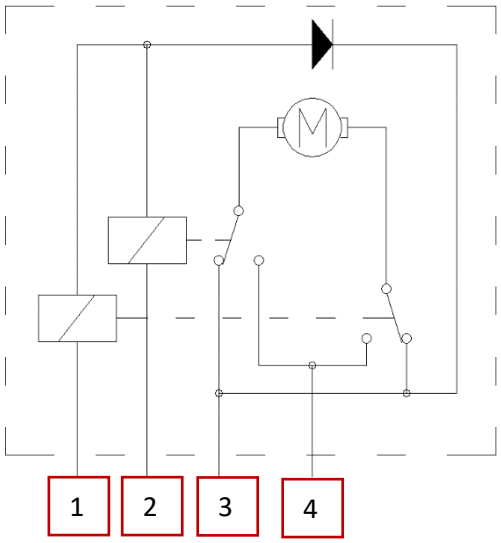
The curtains should be controlled and powered directly from the mcr 9705 control unit in the curtain version, or using a set of devices: the mcr R0424-K or mcr R0448-K extension module together with the mcr 9705 or mcr 0204 control unit.

In the case of a set of curtains operating **with a shared load**, all curtain modules should be **powered from a single source**: either a single mcr 9705 control unit (in the curtain version) or an mcr R0424(48)-Kx extension module (Fig. 7), where x represents the number of extension module outputs equal to the number of curtain modules (motors). In such cases, cables of equal length should be used to ensure a uniform voltage drop between the control device and the motor.

Electrical connections should be made according to the operating and maintenance manual of the control units and modules, as well as in compliance with the construction project and regulations.

- Typical curtain motor current consumption during retraction: approx. 4 A.
- Maximum curtain motor current consumption: 6.3 A.
- The motor does not have built-in overload or thermal protection.
- **Do not exceed the maximum motor operating time – max. 8 minutes.**

Recommended wires for curtain <> control unit (extension module) – PH30 cable, e.g., HDGs/HLGs/HTKSH 4x1.5 mm² or 4x2.5 mm².



Description of motor wire terminal connections:

Wire 1 - Control contact 1 (brown/grey)
Wire 2 - Control contact2 (blue)
Wire 3 - 0 V (mass or – power supply) (black)
Wire 4 - +24 V DC (red)

The direction of the motor rotation is changed by applying +24 V DC to terminal 1 **OR** terminal 2.

Fig. 6 Internal circuit scheme of the R60/8G curtain motor.

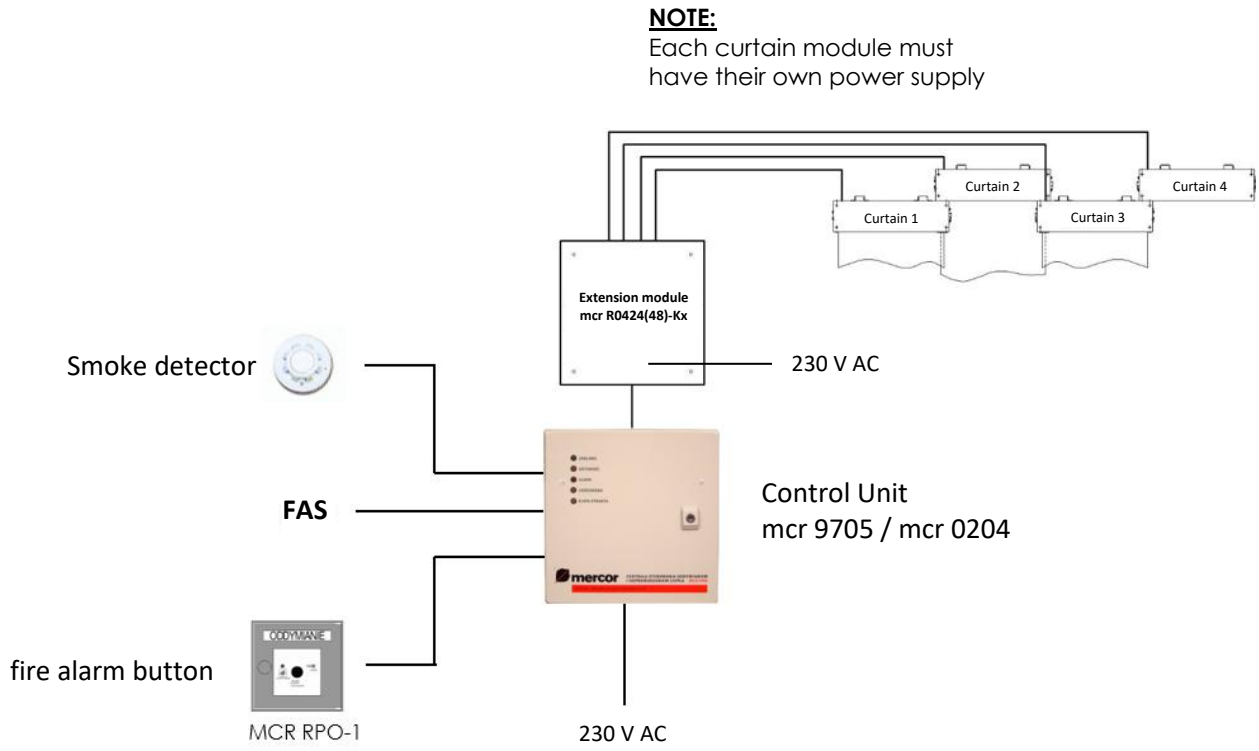


Fig. 7 Wiring diagram for the electrical connections of a multi-module curtain with a common load.

NOTE: To connect the motors of multi-module curtains working with a common load to the control panel/expansion module, cables of the same length should be used to ensure the same voltage drop across the power supply.

Number of curtain modules connected to the control unit and the extension modules:

1. Maximum number of the curtain modules:
   - mcr PROSMOKE ONE C for the mcr 9705-5A control unit – 2 modules, a max length of 3.99 m;
   - mcr PROSMOKE ONE C for the mcr 9705-8A control unit – 2 modules, a length 4 to 5.45m;
   - mcr PROSMOKE ONE C for the mcr R0424-K extension module – 5 modules, a max length of 3.99 m;
   - mcr PROSMOKE ONE C for the mcr R0424-K extension module – 4 modules, a length of 4 to 5.45 m;
   - mcr PROSMOKE ONE C for the mcr R0448-K extension module – 10 modules, a max length of 3.99 m;
   - mcr PROSMOKE ONE C for the mcr R0448-K extension module – 8 modules, a length of 4 to 5.45 m.

In case of the necessity of using a set of curtains out of a larger number of modules than specified above, divide them into sections.

2. Each control unit and each extension module should be provided with 230 V AC power supply.

7 ADJUSTMENT OF THE LIMIT SWITCHES.

The curtains are delivered with pre-set limit switches.
Final adjustment should be made after the curtain is installed.

1. A limit switch is marked with up/down arrows, corresponding to the rotation direction of the motor, the marks +/- indicating the change in the range.
2. The point of triggering the switch may be shifted in the direction of an arrow by rotating the adjustment screw in the + direction or in the opposite direction in relation to the arrow by rotating the control screw in the - direction.
3. One rotation of the adjustment screw causes a change in rotation of the motor shaft of approx. 10° (corresponding to a travel of approx. 1 cm of the curtain fabric).
4. **In order to precisely set the limit switch and check its operation, approach the switch, having turned back the screw by at least ¼ of a rotation.**

NOTE: Incorrect adjustment of the limit switches may cause damage to the curtain (motor, fabric, etc.).

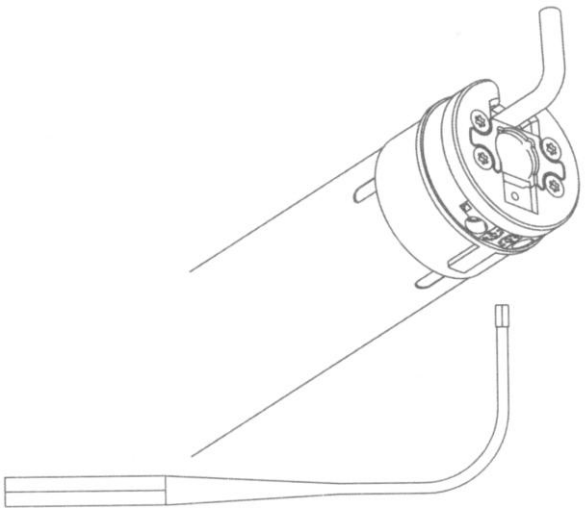
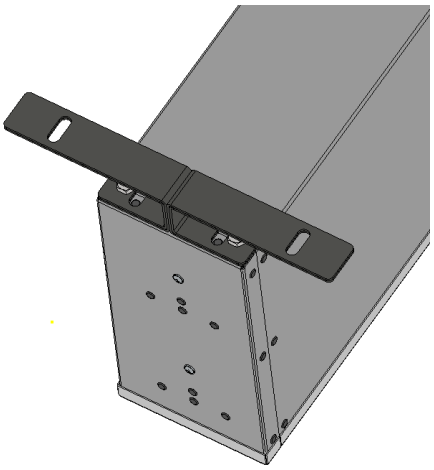


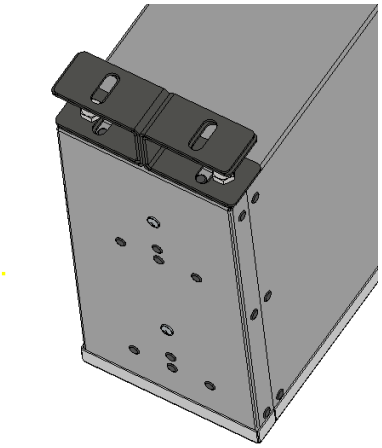
Fig. 8 Adjustment of the limit switch.

Pic. 1 Limit switches of the curtain engine (upper and lower position).

Wide bracket – TYPE A



Narrow bracket – TYPE B



No bracket

Fig. 9 Types of brackets.

8 OPERATING

In order to lower the curtains, turn on the alarm in the curtain control unit (mcr 9705 and mcr 0204).

To lift the curtains after the alarm, cancel the alarm signal and delete the alarm state in the control unit (see the operation and maintenance manual of the mcr 9705 of mcr 0204 control units).

mcr PROSMOKE ONE C rolling curtains, like mcr PROLIGHT smoke exhaust vents controlled electrically, need electric energy to operate (to be raised or lowered). mcr 9705 and mcr 0204 control units ensure the standby state of the system for 72 h and that the system can be activated at least once after that time in case of lack of the basic power supply 230 V AC. At that time, the basic power supply must be restored lest the batteries should become excessively low and damaged.

9 WARRANTY TERMS AND CONDITIONS

1. Mercor Light&Vent 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 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, 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 shall remove them as soon as possible, subject to paragraph 5.

5. Mercor Light&Vent 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 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,

- 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, 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.
3. On issues related to service please contact a local representative of Mercor Light&Vent.

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.

10 CERTIFICATE

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-0133

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

Automatic smoke barrier (ASB) mcr PROSMOKE ONE C

active smoke barrier, type ASB2 and ASB4, is designed as a part of smoke and heat control systems for creation of smoke reservoirs inside the building, for control of movement of smoke and heat inside the building and for increase of efficiency of natural or powered smoke and heat exhaust ventilators. Product used on conditions specified in Assessment and verification of constancy of performance Nr.C1396/18/0002/4004 (published by FIRES, s.r.o., NB 1396 on 13.03.2018) 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

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 Łęgowo, Poland.

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

EN 12101-1:2005 and EN 12101-1:2005/A1:2006

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 13. 03. 2018 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.

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

Representative of Notified Body

In Batizovce, on 29. 03. 2025

Ing. Štefan Rástocký
Head of Product Certification Body

173636

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