

OPERATION AND MAINTENANCE MANUAL

Automatic curtain mcr PROSMOKE ONE FS

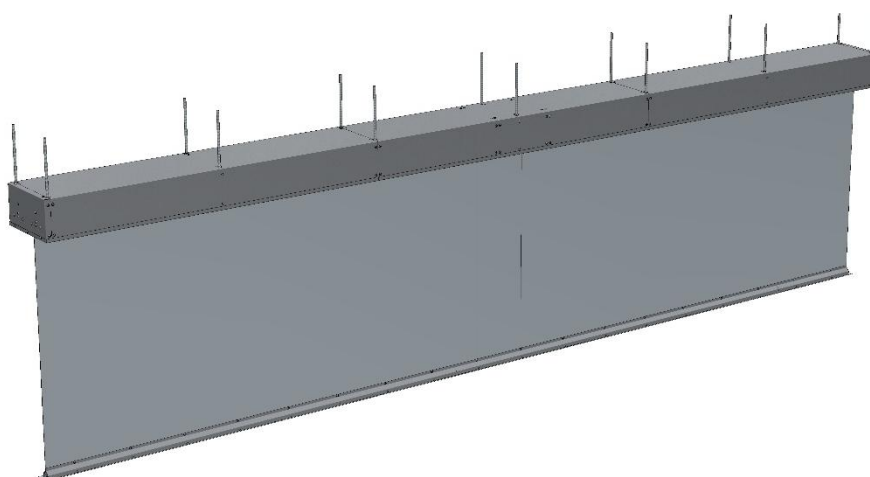
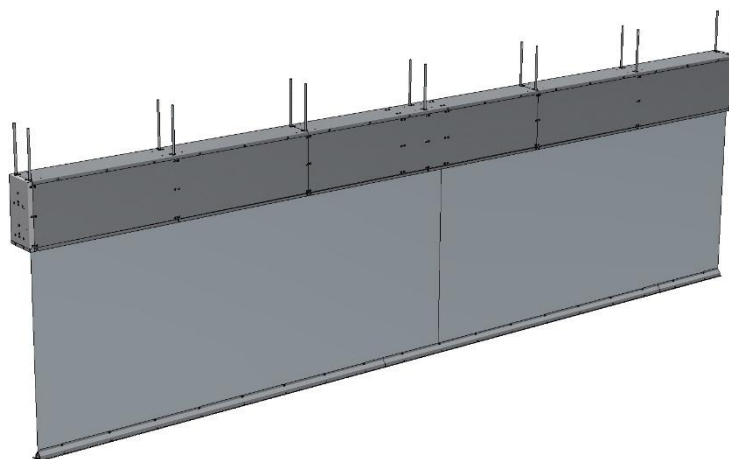


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1 INTRODUCTION

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 FS 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 FS curtains equipped with end switches for smooth adjustment of the upper and the lower positions (by using the XL40/17M drive supplied by BECKER – Antriebe GmbH).

2 PURPOSE OF THE DEVICE

mcr PROSMOKE ONE FS 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 FS 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 FS smoke curtains have a certificate of conformity  No. 1396-CPR-0132, 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 FS 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).

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

The drive system mounted in the roller consists of a 230 V AC motor, a 24 V DC brake keeping the fabric rolled up, and an additional brake limiting the rate of dropping down.

The smoke-tight fabric has a bottom bar ensuring correct rolling out and rolling up and minimising the risk of bending and lifting the fabric when affected by the pressure of fire gases.

The masking element is an 60 mm wide aluminium profile painted to order in any RAL colour.

The smoke-tight material used in mcr PROSMOKE ONE FS curtains is not hemmed 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.

The curtain casing houses the MECU XL control system ensuring correct operation of the curtain.

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.

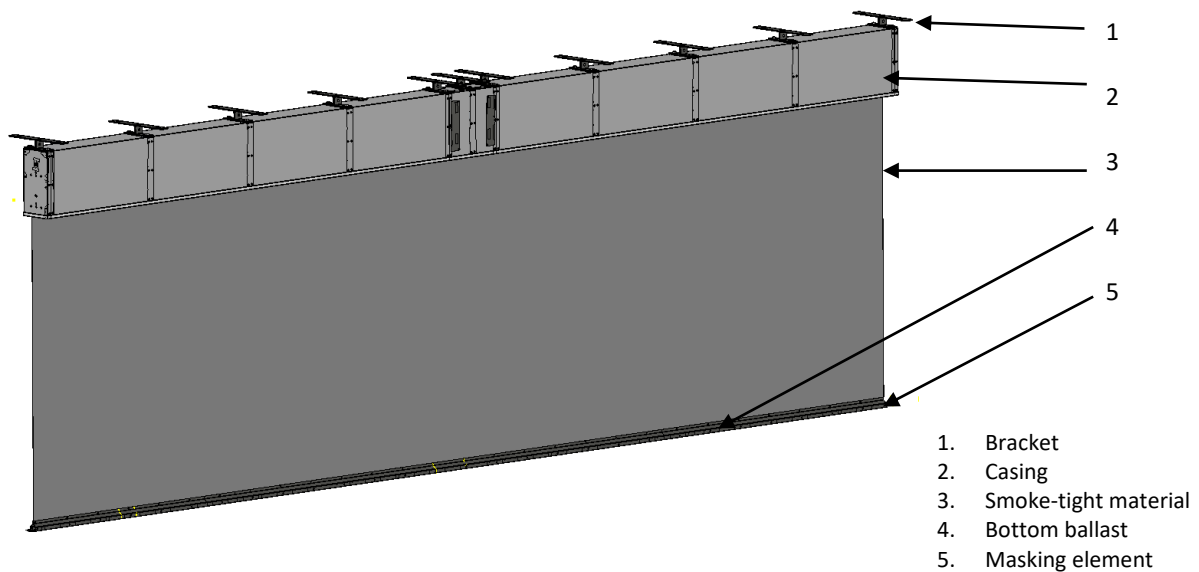


Fig. 1 Structure of the mcr PROSMOKE ONE FS roller curtain.

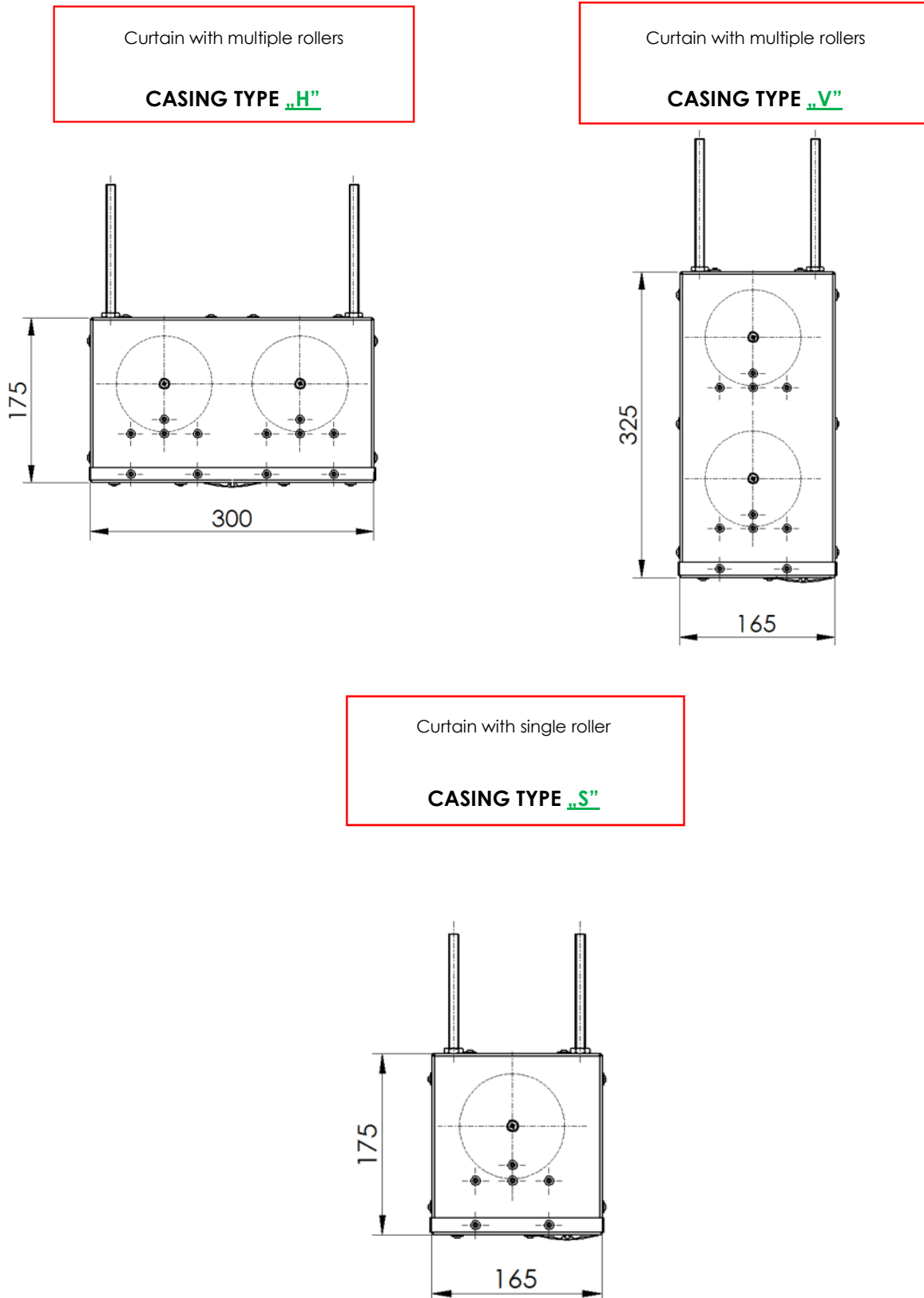


Fig. 2 Types of casings for mcr PROSMOKE ONE FS.

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

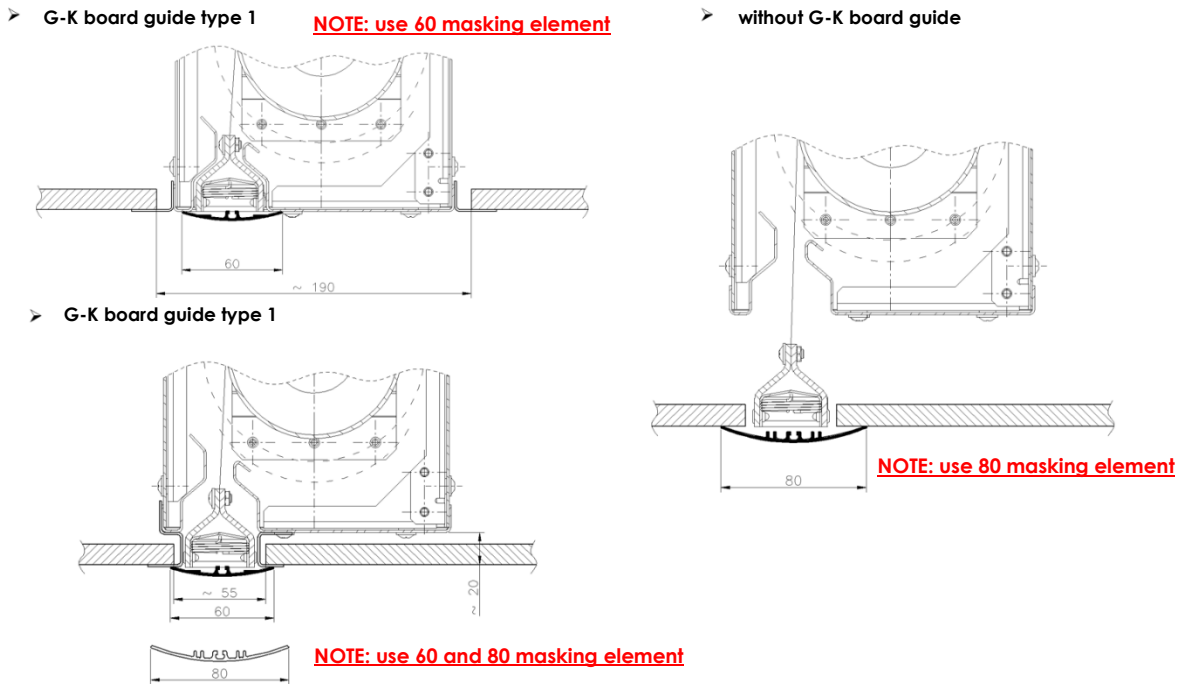


Fig. 3 Recommended position of casings relative to the ceiling. Gap width.

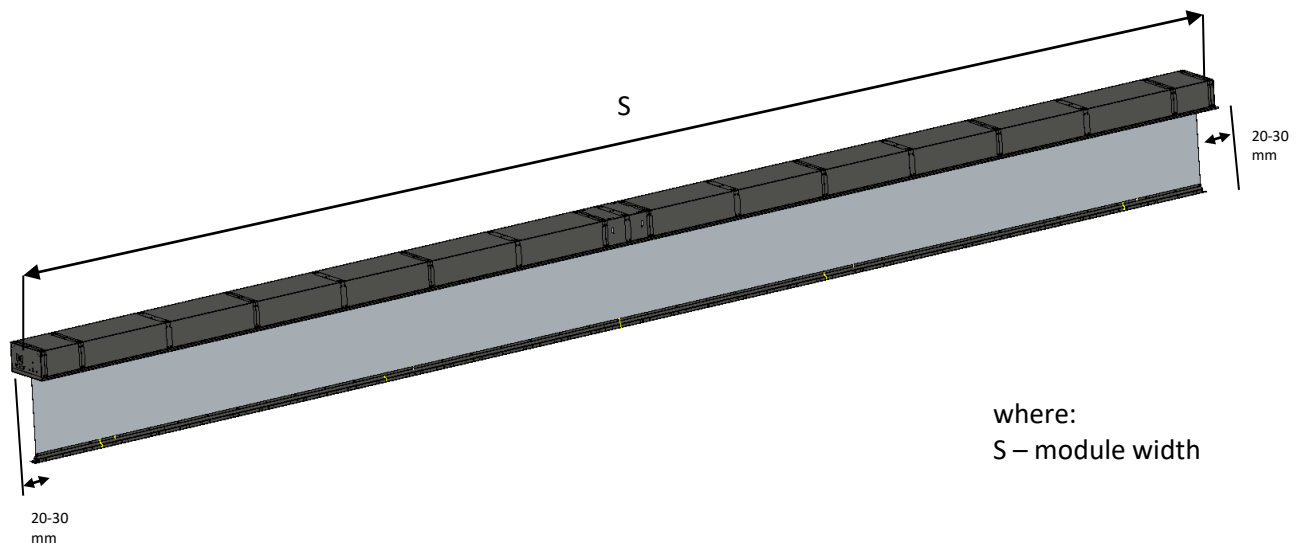


Fig. 4 Gap sizes in the longitudinal direction of mcr PROSMOKE ONE FS curtains.

4 OPERATING PRINCIPLE OF mcr PROSMOKE ONE FS CURTAINS

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

In order to function properly, a mcr PROSMOKE ONE FS rolling curtain must be connected to a mcr 9705-5A or mcr 0204 smoke vent control unit. In order to keep the mcr PROSMOKE ONE FS curtain rolled up, a non-interrupted power supply from the mcr 9705 or mcr 0204 smoke vent control unit is required. If the power supply from the control unit to the curtain is interrupted for one of the following reasons:

- alarm signal,
- disconnection or power shortage (including burning out in case of fire) of the circuit connecting the mcr 9705 or mcr 0204 control unit with the MECU XL motor control system,
- failure of 230 V AC power supply to the mcr 9705 or mcr 0204 and discharged control unit batteries,

the brake is released and the curtain fabric drops down in a controlled manner to the required height (until it is fully rolled out).

The mcr 9705-5A control unit interacting with the curtain should be set to the door control mode, while the mcr 0204 control unit should be set to the curtain mode.

After the mcr 9705 or mcr 0204 control unit is returned to the standby mode, the curtain fabric rolls up using a 230 V AC motor. The fabric rolls up until it reaches the height set by the motor limit switch. When it does, the curtain goes into the mode of keeping the fabric rolled up.

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

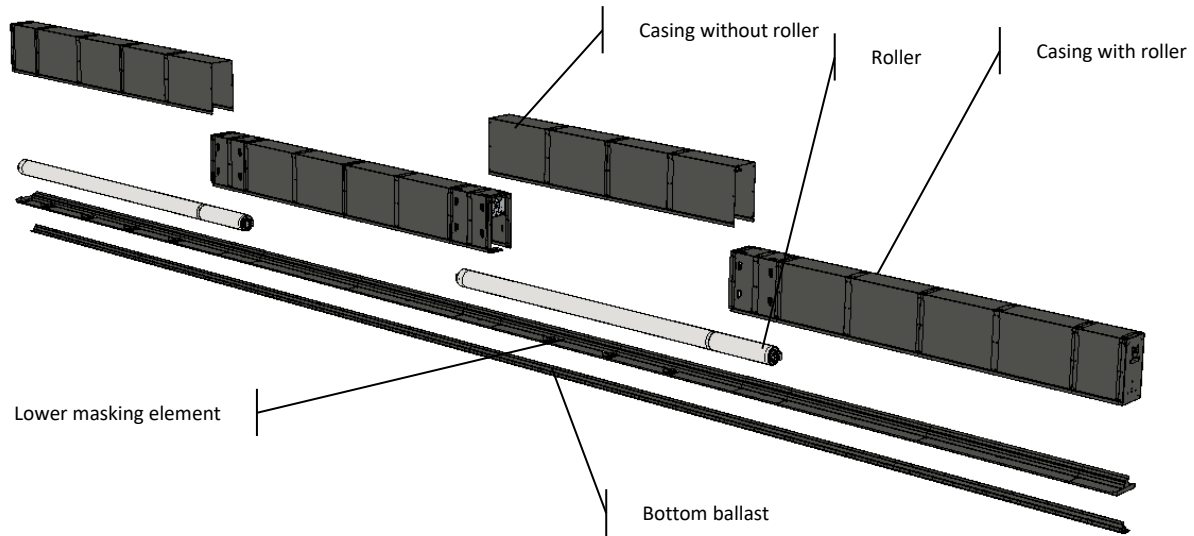


Fig. 5 Curtain components in the delivery.

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.

Do not disassemble and do not disconnect the MECU XL motor control system from the motor. Each curtain model requires a 230 V AC supply voltage.

Curtains should be installed in civil structures in accordance with their respective construction designs, in order to ensure the design gap sizes. 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 FS 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. 10). 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 free terminals of MECU XL (Fig. 8) to the control device, i.e. the mcr 9705 or mcr 0204 control unit, and to the 230 V AC power supply. Observe polarity (+ to +, - to -). The mcr 9507 control unit should be set to the door control mode or the mcr 0204 control unit should be set to the curtain control mode.
8. Install lower covers.

7 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 (8 ADJUSTMENT OF THE LIMIT SWITCHES.ADJUSTMENT OF THE LIMIT SWITCHES.

9.).
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.

Modules connected to the panels:

1. The time of keeping the curtain rolled up by the control unit if there is no primary power supply:
 - mcr 0204 – up to 12 hours for 1 pcs.
 - mcr 9705 – up to 20 hours for 1 pcs.
2. The control unit and each curtain module requires a 230 V AC power supply.
3. The maximum power of a 230 V AC motor in a single module is 270 W.

7.1 Electrical connections.

CABLES

Regular cable 2 x 1.5 mm (2.5 mm)

NOTE

In the case of multi-modular curtains, cables of the same length must be used to ensure the same supply voltage drop

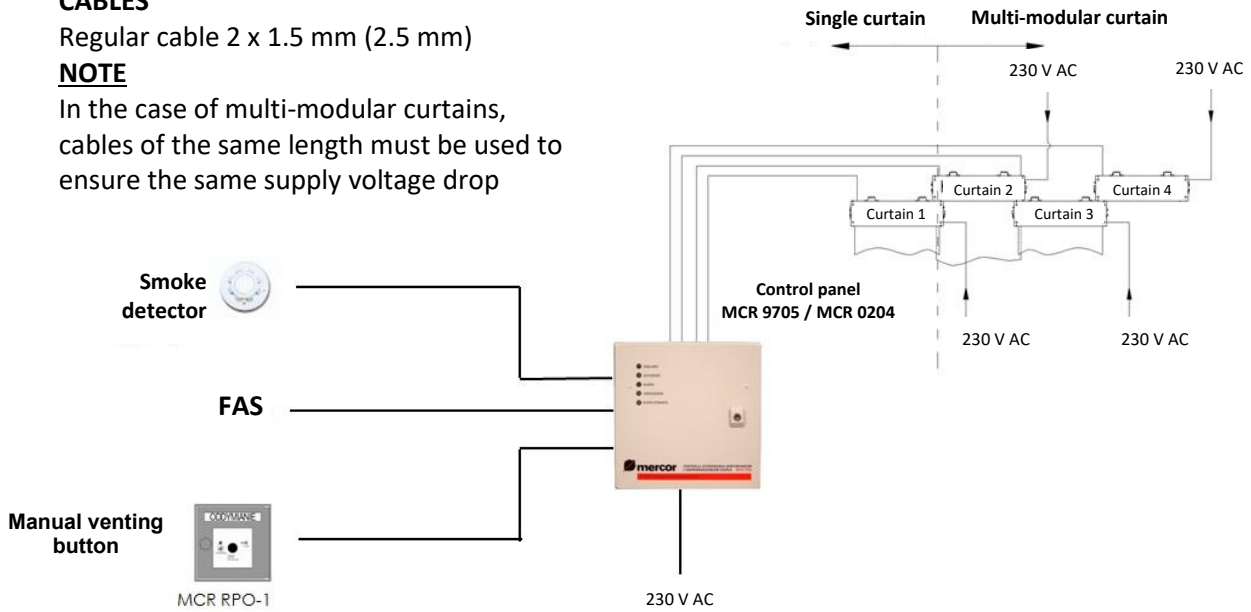


Fig. 6 Schematic diagram of the curtain connections.

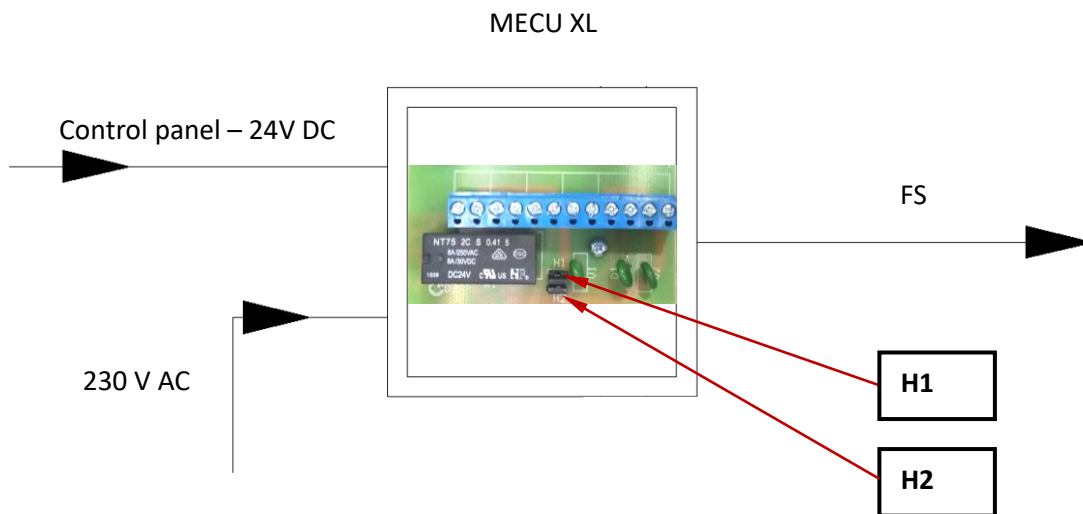


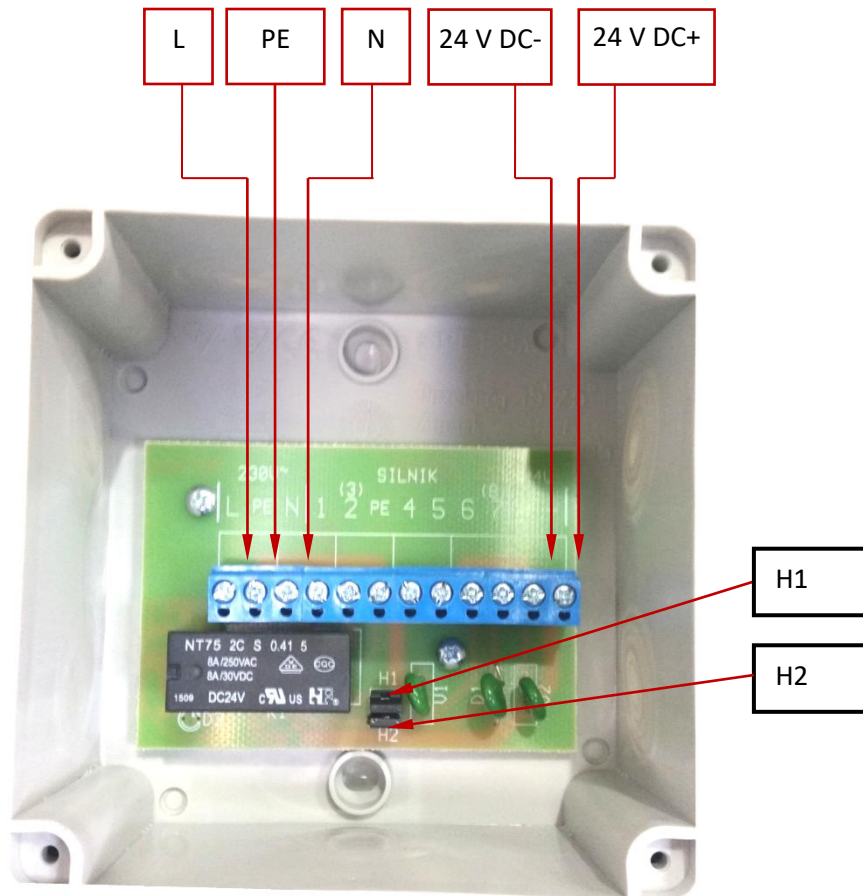
Fig. 7 MECU XL service functions.

H1 jumper – removal releases the brake 24 V DC – curtain descent

H2 jumper – removal cuts off power supply 230 V AC, prevent curtain roll up

IMPORTANT:

To roll the curtain down to the intermediate position, remove the jumper H2, then temporarily remove the jumper H1, until the curtain descends to the desired position. The installation of the H2 jumper causes the curtain to roll up.



H1 jumper – removal releases the brake 24 V DC – curtain descent
H2 jumper – removal cuts off power supply 230 V AC, prevent curtain roll up

1,2,3,4,5,6,7,8,PE	Numbers of motor wires
230 V AC L 230 V AC PE 230 V AC N	Mains
24 V DC – 24 V DC +	mcr 9705 / mcr 0204 control panel – P8 and P11 terminals (brake control) – pay attention to polarity!

Fig. 8 MECU XL connections.

NOTICE:

1. Any decorative or covering elements (e.g. drop ceilings, wall lining) installed later on must not prevent the curtain from dropping freely and must not block possible access to the curtain mechanisms.
2. In the case of fixing curtains with masking elements to a drop ceiling, proper gaps and tolerances should be ensured (Fig. 3) matching a given curtain width.
3. Do not disconnect the MECU XL motor control system from the motor!!!
 Disconnection or damage to the connection between the MECU XL system and the motor may result in the rolling out of the fabric. If disconnection is necessary, the curtain should be protected against rolling out.

8 ADJUSTMENT OF THE LIMIT SWITCHES.

The mcr PROSMOKE ONE FS curtain is equipped only with an upper position limit switch.

The lower position limit switch is blanked off (Pic. 1), and the curtain descends until the fabric is fully unrolled.

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.**

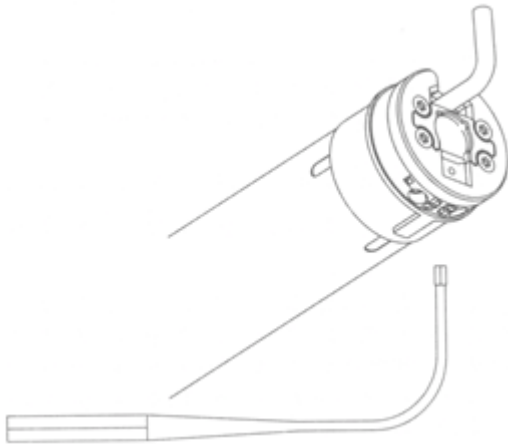
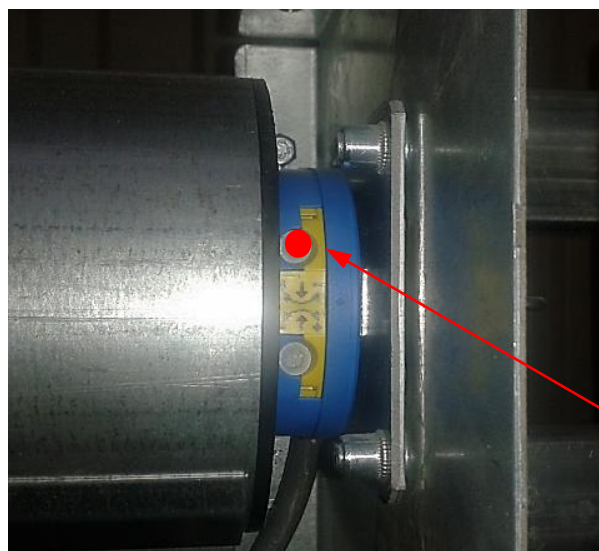


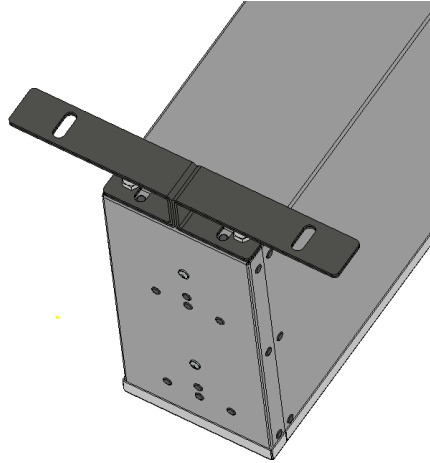
Fig. 9 Adjustment of the limit switch.



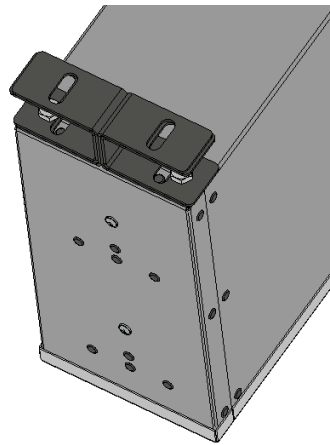
Blanking plug!

Pic. 1 Limit switches of the curtain engine.

Wide bracket – TYPE A



Narrow bracket – TYPE B



No bracket



Fig. 10 Types of brackets.

9 OPERATING

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

mcr PROSMOKE ONE FS 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.

In such a situation, the main power supply must be restored as soon as possible due to the risk of excessive discharge and damage to the batteries. If this condition has lasted for more than 1 hour, the manufacturer's service or an authorised Mercor Light&Vent service centre must also be contacted to check the condition of the batteries.

10 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 (A₄)). 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.

11 CERTIFICATE

 Reg. No. 041/P-007	NOTIFIED BODY 1396 Osloboditeľov 282, 059 35 Batizovce, Slovakia Tel.+421 52 285 1611, www.fires.sk	 The Experts on Fire Safety
Certificate of constancy of performance		
1396-CPR-0132		
<p>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</p>		
Automatic smoke barrier (ASB) mcr PROSMOKE ONE FS		
<p>active smoke barrier, type ASB1 and ASB3, 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 is 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</p>		
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, Ciepłewo, 83-031 Łęgowo, Poland.		
<p>This certificate attests that all provisions concerning the assessment and verification of constancy of performance described in Annex ZA of the standard</p>		
EN 12101-1:2005 and EN 12101-1:2005/A1:2006		
<p>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</p>		
constancy of performance of the construction product.		
<p>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.</p>		
In Batizovce, on 29. 03. 2025		Representative of Notified Body
173637	FIRES 136a/C-23/10/2024-E	 Ing. Stefan Rástocký Head of Product Certification Body