

User manual

MET BD 30/60/90/120



Manufacturer: Metacon B.V.
James Wattstraat 14
2809 PA Gouda
The Netherlands
Tel. no.: +31 (0)182 - 510777
Fax no.: +31 (0)182 - 510632
Website: www.metacon.nl
E-mail: info@metacon.nl



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1. Preface

Metacon B.V. supplies products solely to the distributive trade: the company supplies exclusively semi-finished products, not finished products.

The manufacturer will issue only a IIB declaration of conformity when a third party assembles and installs the product and the installation company makes the arrangements for the controller. The installation company is responsible for affixing the CE marking, drawing up a IIA declaration of conformity and issuing the instructions for use to the user.

Metacon B.V. cannot be held liable for unsafe situations, accidents, injuries or loss caused by:

- Ignoring warnings of directions displayed on the roller shutter or stated in the instructions;
- Inadequate maintenance;
- Modifications to the fire-retardant roller shutter carried out by third parties, including the installation of replacement parts other than the prescribed parts (battery) and the modification of the control program;
- The inexpert installation or assembly of the unit.

Reference documents:

- NEN-EN 13241-1; NEN-EN 60204; NEN-EN 1634-1; NEN 6069;
- RoMaZo warranty card (guarantee);
- Delivery document + declaration of conformity (on request);
- Construction drawing/layout drawing;
- Confirmation of the order;
- Instructions for the use of motors and controllers issued by the suppliers for the adjustment of the motors and the settings of the controller;
- Instructions for the use of any accessories, where relevant, supplied with the unit.

The installation company and the user are required to follow the directions stated in the instructions for use. Always contact Metacon B.V. in the event of any questions. The instructions for use should be supplied with the fire-retardant roller shutter. More information is available from Metacon's website, www.Metacon.nl

2. Introduction

This is a passive door and is neither intended nor suitable for day-to-day use. This fire-retardant roller shutter is intended to separate connected areas in the event of fire or smoke development to slow the rate at which the fire spreads to the adjacent areas. The fire-retardant roller shutter can be installed as part of a fire-retardant system such as a fire detection system.

The fire-retardant roller shutter is operated solely by a technician from the installation company. The user does not need to operate the fire-retardant roller shutter.

3. Technical specifications:

The technical specifications of fire-retardant roller shutters are summarised below.

Fire-retardant roller fabric:	Manufactured from non-flammable material:
MET BD-30	Fibre glass incorporating battens: double-walled, 1000 gram per m ²
MET BD -60/60/90/120	HT (high temperature) fibre glass incorporating battens, double-walled, 1000 gram per m ²
Fittings, material:	Sendzimir galvanised steel / stainless steel 304 / stainless steel RVS 316
Moving unit:	Comprised of: 2 guides to which 2 end plates are attached, each of which is fitted with bearings and supports on which the tube around which the fire-retardant roller fabric is wound, and an intermediate bar that ensures that the shutter passes smoothly into the guides. These parts are enclosed in a housing and form a self-supporting structure
Side guides:	150/160/170/180/190/200/210/220/220 X 30 X 2 [mm] (depending on the clear width) with swelling agent serving as flame barrier
Upper roll structure:	With housing to prevent the spread of fire
Motors:	Standard tubular motor or failsafe tubular motor 230 [V]
Controller:	All types that may be required by the fire brigade or authorities
Fire retardance:	30/60/90/120 minutes, depending on the type of fabric and the dimensions of the shutter
Complies with the standards:	NEN-EN 1634-1 (European standard) and NEN 6069
Certificate:	TNO Report number: 2004-CVB-R0281 (30 min) TNO Report number: 2005-CVB-R0416 (60/90/120min)
Options:	Failsafe tubular motor that closes the shutter in the event of a power failure. Emergency power battery that ensures that the shutter can still be operated in the event of a power failure. Smoke and temperature alarms, etc. Fittings of stainless steel, finished in a RAL colour or with a food safe coating.
Dimensions:	Available in total widths of up to 12000 mm, dimensions in consultation.

4. Safety

The applicable safety regulations, such as the use of personal protective equipment, must be observed when installing the fire-retardant roller shutter.

The directions stated in these instructions for use must be followed precisely. The instructions in the appendices to this document must be followed precisely when installing the electrical components. The manufacturer of the flame-retardant roller shutter cannot be held liable for any injury or loss, etc., caused by failure to observe these instructions for use.

4.1 Safeguards

- The tubular motor is fitted with a thermal cut-out. Note: operation of the motor more than 8 times within 24 hours will trip the cut-out. Take this into account when adjusting the motor;
- Smoke alarms, temperature alarms, fire alarm installation

4.2 Safety instructions

- The fire-retardant roller shutter will always lower in the event of a fire or smoke alarm even when people are in the vicinity.
- Disconnect the power supply to the fire-retardant roller shutter before carrying out any maintenance work or repairs;
- The fire-retardant roller shutter may not be installed in an escape route.

4.3 Residual risks

Regular use:

- Risk of becoming caught when the fire-retardant roller shutter lowers. The fire-retardant roller shutter lowers even when people are in the vicinity. However, the risk of becoming trapped is very low due to the low weight of the shutter and the slow speed at which the shutter is lowered.

Maintenance:

- Risk of electrical shocks. However, this risk is absent in normal use. The power supply to the fire-retardant roller shutter must be disconnected before carrying out maintenance work or repairs. The risk of an electrical shock will then be low. The instructions for use warn against these residual risks.
- Preference is given to a system that is fully earthed.

5. Product

The fire-retardant roller shutter is a fabric shutter which lowers vertically to seal openings in partition walls. The roller shutter is normally rolled up and protected by the metal housing. Guide sections on each side of the opening in the wall seal the space between the sides of the shutter and the wall. Fire-retardant roller shutters are comprised of the following parts:

<i>Part:</i>	<i>Description:</i>	<i>Quantity</i> :	<i>Reference:</i>
1	Left guide + end plate	1	
2	Right guide + end plate	1	
3	Tube + motor + rolled-up shutter	1	
4	Top and back of housing	1	
5	Front and bottom of housing	1	
6	Housing brackets	x	Depending on clear height
7	Intermediate bar	1	
8	Tubular motor control box	1	
9	Bag with adjustment strip/split pin and extra screws and nuts	1	

A variety of options are available for the fire-retardant roller shutter:

<i>Part:</i>	<i>Description:</i>	<i>Quantity</i> :	<i>Reference:</i>
10	Emergency power battery	-	
11	Failsafe tubular motor	-	
12	Smoke alarm(s)	-	
13	Temperature alarm(s)	-	
14	Key-operated switch	-	
15	Key-operated switch with up-stop-down function	-	
16	Mushroom switch	-	
17	RED/GREEN flashing light	-	
18	Alarm	-	

Table 1: List of parts.

6. Installation

Check the following before beginning work on the installation of the fire-retardant roller shutter:

- Verify that you have all parts listed on the delivery note/order form or shown in the list of parts in Section 5 of these instructions for use;
- Verify that the dimensions – the **clear and total width and the clear and total height** – correspond with the specifications on the delivery note/conformation of the order.

6.1 Essential tools and equipment for installation

The following lists some of the tools and equipment that will be required:

- Hammer drill with a variety of bits (depending on the type of wall, for example masonry);
- Extension lead;
- Fastening screws, etc., to mount the guides on the wall;
- Materials to fasten or enclose the cables from the motor and peripheral equipment;
- Steps, elevated platform or ladder;
- Hoisting or lifting equipment, pursuant to the working conditions legislation, for the installation of wide or high fire-retardant roller shutters;
- Standard tools.

You may think that this list is incomplete: the list serves solely to indicate the type of rolls and equipment you may need.

6.2 Inspect the work area

Inspect the following before beginning work on the installation of the fire-retardant roller shutter:

- Verify that the necessary electrical connections are present;
- Verify that the voltage corresponds with the specification on the confirmation of the order;
- Verify that the (clear) width and (clear) height correspond with the specifications on the confirmation of the order;
- Verify that the area in which the fire-retardant roller shutter is to be installed is free of obstacles;
- Verify that space is available for the installation of the controller;
- Verify that the walls are completely vertical.

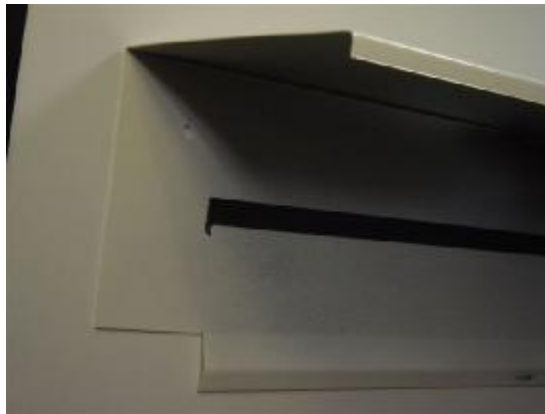
6.3 Installation sequence

Once you have completed all the checks listed in Subsection 6.2 you can begin work on the installation of the fire-retardant roller shutter. The installation is carried out in the following steps:

Step 1: *Install the top and back of the housing*

Remarks:

NOTE! The top and back of the housing must be mounted absolutely horizontal. The screws required to fasten the back of the housing are not supplied by the unit: these must be supplied by the technician. Note! Do not use plugs or other fittings that **CANNOT** withstand high temperatures.



Step 2: *Remove the guide plates from both guides*

Remark:

These are attached to the guides by a number of bolts (the number depends on the clear height).

Step 3: *Install the right and left guides*

Remarks:

See also the remarks to Step 1. The guides must be installed absolutely vertically.



Step 4: Install the tubular motor (with the shutter)

Remarks: Fit the tubular motor into the motor bracket and feed the cable through the appropriate opening. Fit the shaft into the bearing mounted on the end plate.

NOTE! The tubular motor is wrapped in film for transport. To avoid damage, remove this film only immediately before fitting the motor.



Step 5: Connect the motor and controller

Remarks: See Appendix 3 and 4: instructions for the motor & controller, enclosed with these instructions for use (the last page of these instructions)
95% of the settings of all motors are adjusted in the factory.

Step 6: Install the intermediate bar

Remark: The intermediate bar must be fitted to the end plate. The fastening screws are supplied with the unit. **NOTE!** The shutter must lie behind the intermediate bar.



Step 7: Align the threaded ends

Remark: The washers fitter to the projecting threaded ends must be aligned vertically above the C sections of the guides. The nuts on the threaded ends can be loosened to adjust the position and then retightened.

Step 8: Check the movement of the shutter

Remark: Lower the shutter and check that the shutter fabric/battens lower correctly. This will need to be checked several times. **(Note: larger roller shutters can trap air. Allow this air to escape by waiting about 10 seconds before raising the shutter)**

Step 9a: Adjust the limit switches (95% of the settings have been adjusted in the factory)

Remarks: See Annex 3, instructions for the use of the motors for more information (the up and down switch must be used when making this adjustment rather than the controller: when a failsafe motor is installed then wires 4 and 5 must be connected to the 24 V power supply on the right in the control box. After the adjustment, connect the motor wires to the controller. The controller must always be installed out of the reach of persons and the shutter must be

operated using a key-operated switch or key-operated switch with up-stop-down buttons.

Step 9b: Adjust the limit switches (electronic)

Remarks: See Appendix 4 for information on memorising the motor running time. Make sure that the shutter is raised and lowered with a dead man's switch to comply with the safety requirements.

Step 10: Check the movement of the shutter

Remarks: Raise and lower the shutter several times and check that the shutter moves correctly. Take account of the drive's switching-in time.

Step 11: Fit the guide plates to both guides

Remarks: These are attached to the guides by a number of bolts (the number depends on the clear height).



Step 12: Install the front and bottom of the housing

Remark: Fit the front and bottom housing to the end plates. **NOTE!** Fastening screws are not supplied with the unit. Steel fastening screws must be used.



Step 13: Connect the peripheral equipment

Remark: A number of options are available for the fire-retardant roller shutter. These are stated in the technical specifications. Information on the installation and connections of the peripheral equipment is given on the equipment's packaging and the instructions for use.

7. Use

The *fire-retardant roller shutter is relatively simple to use*. Once the fire-retardant roller shutter has been installed it can be operated as a stand-alone unit. The activation of the smoke/temperature alarm or fire-alarm system will lower the fire-retardant roller shutter. The shutter is lowered at a relatively slow speed so that persons in the vicinity of the fire-retardant roller shutter can move away and are not placed in danger.

The high temperatures cause the swelling agent to expand. This swelling agent is located at points where the flames could penetrate (the structure). The swelling agent then seals off the entire area. TNO/Efectis has tested the installation to verify a flame retardance of 30/60/90/120 minutes (depending on the type of fabric).

As an option, the installation can be equipped with an emergency power battery, failsafe motors or a combination of the two. In the event of a power failure the fire-retardant roller shutter can then be lowered in a controlled manner.

NOTE! Goods and equipment, etc., may never be placed under the fire-retardant roller shutter!

If the shutter is lowered for a longer period of time then damage may occur due to the movement of the shutter backwards and forwards over the floor.

8. Maintenance

Periodic maintenance is essential to ensure that the installation performs correctly. The warranty will become void if the installation is not subjected to an annual inspection. For this reason Metacon B.V. recommends that you conclude a maintenance contract your installation company. The maintenance must be carried out by a qualified and competent technician. At least the following must be inspected during this maintenance:

- Visual inspection of all parts for damage;
- Inspection of all fastenings to verify that they are present and still suitable for their purpose;
- Inspection of the attachment of the cover plates to the guides;
- Inspection of the opening of the guides;
- Inspection of the attachment of the shutter to the tubular motor;
- Inspection of the shutter for damage, in particular at the seams;
- Inspection of the swelling agent;
- Inspection of the motor controls for correct performance;
- Inspection of the wiring for damage;
- Inspection of the movement of the shutter fabric/battens in the guides;
- Inspection of the limit switches to verify that the movement of the shutter is still correct;
- Inspection of the performance of the peripheral equipment

It is also important that follow observe the instructions in the appendix to the instructions for use. Read the appendix before carrying out the maintenance.

Each fire-retardant roller shutter is fitted with an identification plate stating the type, supplier, year of construction, type of motor, weight and order number. This is fitted to the end plate under the motor support. Other (company) identification plates may have been fitted to the guide plate later.

State this number when reporting any malfunctions to your installation company. Metacon B.V. has stored a technical file in the company archives under the order number.

The installation must be cleaned at periodic intervals. The user is responsible for cleaning the installation: you are in the best position to assess when cleaning is necessary. The maintenance technician will clean the parts enclosed in the housing during the annual maintenance. The following need to be taken into account when cleaning the installation:

- Use the correct cleaning agent (read the instructions on the label to ensure that you use the correct cleaning agent). NOTE! Do not use cleaning agents that could cause damage to the installation (such as to the paint or other finish) or the environment or could cause injuries to persons or animals;
- Use the correct quantity of cleaning agent;
- Dilute the cleaning agent with lukewarm water;
- Do not use high-pressure cleaners delivering a pressure above 50 bar;
- Rinse the installation with water;
- Do not use hard brushes that could cause damage to the fire-retardant roller shutter;
- Do not use scourers or similar.

9. Troubleshooting and repairs

The power supply must always be disconnected from the fire-retardant roller shutter before carrying out maintenance or repair work. Repairs and the rectification of malfunctions must always be carried out by the installation company with whom you have concluded a maintenance contract. The malfunctions that could occur are listed in the troubleshooting table (Table 2). Solutions for malfunctions are also listed in the appendices to the instructions for use. Contact your installation company if a malfunction occurs that is not listed in the table or the appendixes or these instructions for use. If your installation company cannot help you then you can contact Metacon B.V.

Troubleshooting table

Problem	Remedy
The motor does not turn	Test the electrical connections, wiring and switch
The motor no longer turns, although it has turned just before	The thermal cut-out has tripped: allow the motor to cool (15 to 75 minutes)
The motor turns in one direction only	Reverse the motor's direction for at least 1 second. Then try turning the motor again in the required direction
The motor tries to lower the fully raised shutter but switches off again immediately	Make sure that the shutter can move freely in the guides. Test to check that the shutter moves freely and is not jammed in the housing
The motor lowers the shutter but switches off too early	Check whether the guides are obstructed or barred in some other manner. Test whether the shutter moves freely
The motor lowers the shutter but does not switch off (quickly enough)	Check whether the shutter contacts the ground or another section while it is being lowered. Check that the tubular motor can turn freely. Bring the roller shutter back into use in accordance with the instructions
Air trapped in shutter	<u>Larger roller shutters can trap air. Take account of this possibility and allow the air to escape by waiting about 10 seconds before raising the shutter.</u>

Table 2: Troubleshooting table

10. Storage and transport

The parts are packed in film or in plastic sleeves before transport. However, it is recommended that the parts are nevertheless stored indoors. All products have been finished with a surface coating. Damage to this surface coating can considerably reduce the service life.

Transport is relatively simple as Metacon B.V. supplies solely semi-finished products.

Some parts may too heavy to be moved easily by two persons. The working conditions legislation then prescribes the use of lifting or hoisting equipment.

11. The environment and disposal

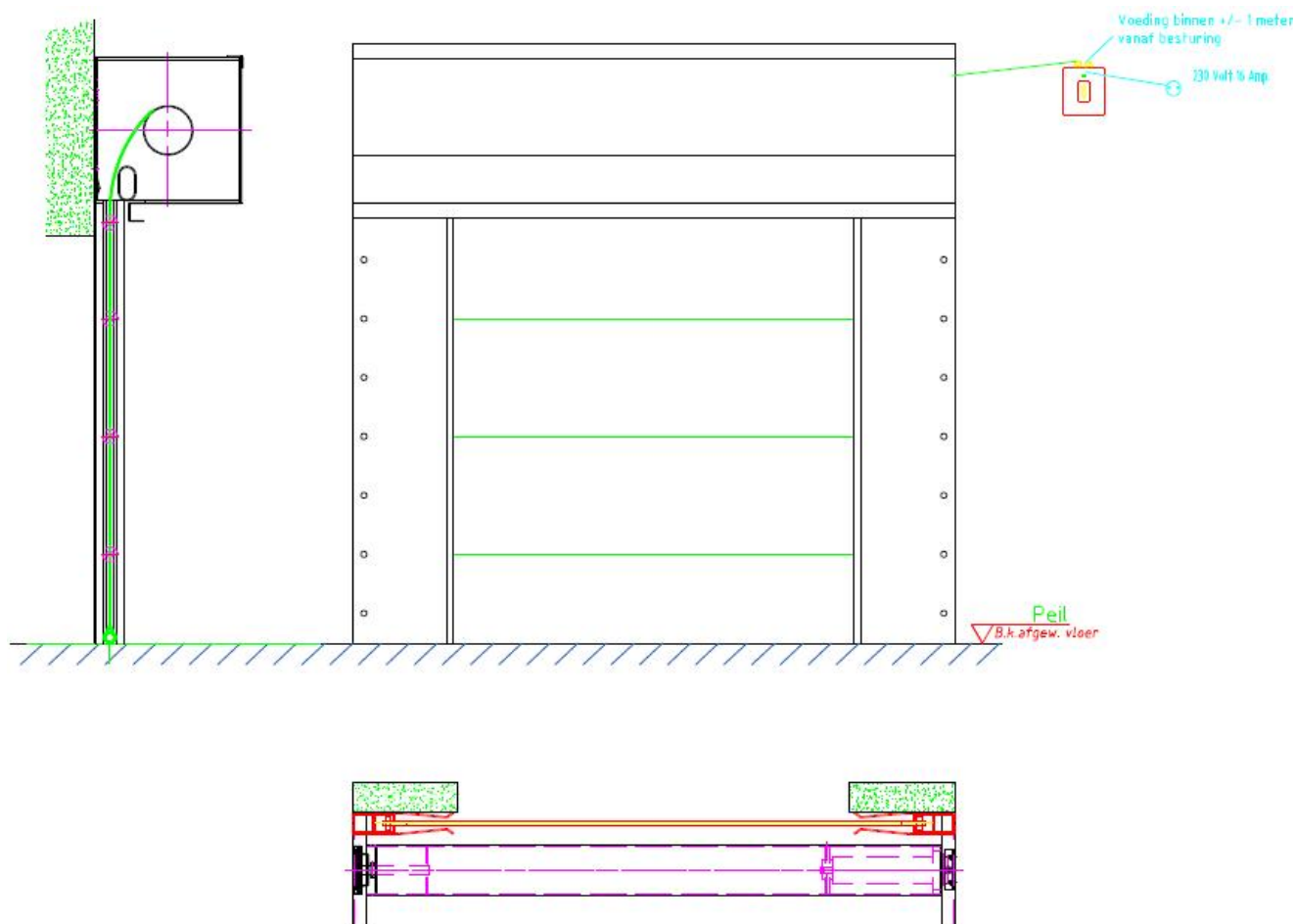
The prevailing local environmental regulations must be observed (the separate disposal of materials with an environmental impact).

The installation can be dismantled in the reverse sequence listed in Subsection 6.3, Installation sequence.

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Appendix 1: Schematic drawing, fire-retardant roller shutter



The actual dimensions may differ from those shown above.
The other information is specified on the delivery note/order form.

Captions

Power supply within approx. 1 metre from the controller
230 Volt 15 Amp

Floor
Finished structural floor