AMS
AIR MOVEMENT SUPPLIES

"Our work is presentation of our capabilities."
— Edward Gibbon

TRUSTED PARTNER OF

Rf-t Rf-Technologies

SMOKE DAMPERS
MARKAGE MB

The MARKAGE MB rectangular Multi MA smoke control damper.

Suitable for installation in a wall or a smoke rated duct.



AMS
AIR MOVEMENT SUPPLIES

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Ph: +353 1 463 4300

www.airmovementsupplies.ie

Conforms with:

CE

- Standard EN 12101-8
- Tested to EN 1366-10 (-500Pa)
- Classified under EN 13501-4

Explanation of the abbreviations and pictograms

Wn = nominal width
Hn = nominal height
Sn = free air passage
Sl = free surface
E = integrity
I = thermal insulation
S = smoke leakage
60/120 = fire resistance time
Pa = pascal
o -> i = meets the criteria from the outside (o) to the inside (i)
i <-> o = fire side not important
AA = automatic activation
MA = manual activition
multi = multi compartment
ved = vertical duct
hod = horizontal duct
vew = vertical wall penetration
V = volt
W = watt
V AC = Volt alternating current
V DC = Volt direct current
E.TELE = power supply magnet
E.ALIM = power supply motor
Auto = automatic
Tele = remote controlled
Pnom = nominal capacity
Pmax = maximum capacity
DAS MOD = modular product
OP = option (delivered with the product)
KIT = kit (delivered separately for repair or upgrade)
PG = connection flange to the duct
GKB (type A) / GKF (type F): "GKB" stands for standard plasterboards (type A according to EN 520) while "GKF" plasterboards offer a higher fire resistance for a similar plate thickness (type F according to EN 520)
Cal-Sil = calcium silicate
ζ [-] = pressure loss coefficient
Q = airflow
ΔP = static pressure drop
v = air speed in the duct
Lwa = A-weighted sound power level
ME = motorised
H = habitat

	large dimensions		fast and easy installation
-1500 Pa	superior air tightness (tested at 1500 Pa)		

" We're all working together, that's the secret. "
— Sam Walton

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SMOKE DAMPERS

MARKAGE MB

The MARKAGE MB rectangular Multi MA smoke control damper is suitable for installation in a wall or a refractory duct.

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DECLARATION OF PERFORMANCE

CE_DoP_Rf-t_V32_EN C-04/2021

1. Unique identification code of the product-type:	**MARKAGE MB**
2. Intended use/es:	Rectangular single and multi MA smoke control damper for installation in a wall or refractory duct.
3. Manufacturer:	Rf-Technologies NV, Lange Ambachtstraat 40, B-9860 Oosterzele
4. System/s of AVCP:	System 1
5. Harmonised standard / European Assessment Document; notified body / European Technical Assessment, Technical Assessment Body, notified body; certificate of constancy of performance:	EN 12101-8:2011, Efectis with identification number 1812; Efectis_1812-CPR-1821
6. Declared performance according to EN 12101-8:2011	(fire resistance according to EN 1366-10, classification according to EN 13501-4)

Essential characteristics					Performance
Range	**Wall type**	**Wall**	**Sealing**	**Installation**	**Classification**
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Rigid wall	Aerated concrete ≥ 100 mm	Mortar	1	EI 90 (v_{ew} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
		Aerated concrete ≥ 100 mm	Stone wool + coating ≥ 140 kg/m³	1	EI 90 (v_{ew} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
	Rigid floor	Aerated concrete ≥ 100 mm	Mortar	1	EI 90/120 (h_{ow} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
	Rigid floor	Aerated concrete ≥ 100 mm	Stone wool + coating ≥ 140 kg/m³	1	EI 90/120 (h_{ow} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
	Horizontal refractory duct	Promatect LS ≥ 35 mm	Promat glue K84	1	EI 90/120* (h_{od} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
		Promatect L500 ≥ 40 mm	Promat glue K84	1	EI 90/120* (h_{od} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
		Promatect AD ≥ 40 mm	Promat glue K84	1	EI 90/120* (h_{od} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
	Vertical refractory duct	Promatect LS ≥ 35 mm	Promat glue K84	1	EI 90/120* (v_{ed} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
		Promatect L500 ≥ 40 mm	Promat glue K84	1	EI 90/120* (v_{ed} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
		Promatect AD ≥ 40 mm	Promat glue K84	1	EI 90/120* (v_{ed} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
		Masonry, concrete blocks, concrete EI 90/120	Promat glue K84	1	EI 90/120* (v_{ed} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
200x200 mm ≤ MARKAGE MB-1S ≤ 1000x1600 mm	Rigid wall	Aerated concrete ≥ 100 mm	Not applicable	1	EI 90/120 (v_ew i ↔ o) S1500 C10000 HOT 400/30 MA MULTI

1 Type of installation: built-in 0/90/180/270°. * Installation in EI120 certified ducts for EI120 classification of the complete system.

Harmonised standard EN 12101-8:2011

Nominal activation conditions/sensitivity:	Pass
Response delay (response time): closure time	Pass
Operational reliability: cycling	BEN / BEE / BE - 10000 cycles (with load)
Durability of response delay:	Pass
Durability of operational reliability:	Pass
High operational temperature (HOT 400/30):	Pass

The performance of the product identified above is in conformity with the set of declared performance/s. This declaration of performance is issued, in accordance with Regulation (EU) No 305/2011, under the sole responsibility of the manufacturer identified above.

Signed for and on behalf of the manufacturer by:
Mathieu Steenland, Technical Manager

Oosterzele, 04/2021

Product presentation MARKAGE MB

The MARKAGE MB rectangular Multi MA smoke control damper is suitable for installation in a wall or a refractory duct and has a fire resistance of 90 or 120 minutes, depending on the application and installation. The damper is available in a wide range of dimensions. The MARKAGE MB smoke control damper has an MA and HOT400/30 classification which ensures that in the event of a fire, the damper blades can still change position during the first 30 minutes. In this way, smoke control can be adjusted during or after a fire.

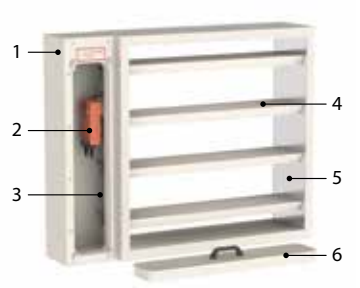
Smoke control shutters and dampers are suitable for use in ventilating protected lobbies, venting to shafts either naturally or mechanically. They open to evacuate smoke in emergency situations whilst maintaining fire resistant integrity in standby position.

- ☑ large number of installation options
- ☑ can be activated with a bus communication module
- ☑ large dimensions
- ☑ version available for dry installation
- ☑ superior air tightness (tested at 1500 Pa)



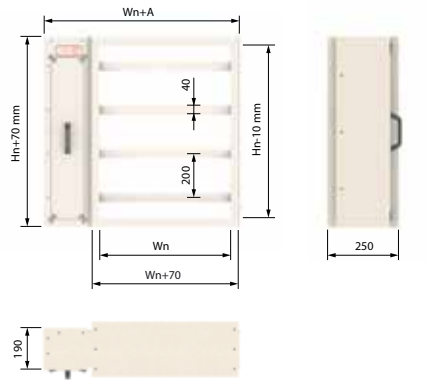
- ■ compliant with EN 12101-8
- ■ tested according to EN 1366-10 and EN 1366-2
- ■ suitable for installation in rigid wall and refractory ducts
- ■ maintenance-free
- ■ for indoor use

1. actuator compartment (+ communication module)
2. actuator
3. damper blade mechanism
4. damper blade
5. damper housing
6. access hatch



Range and dimensions MARKAGE MB

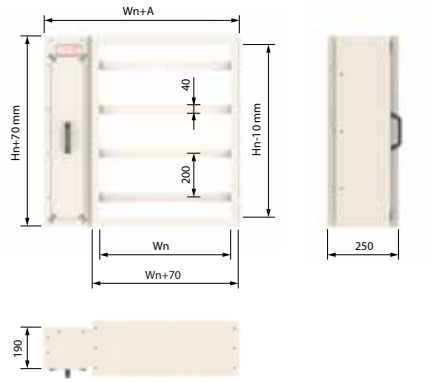
Hn in steps of 200 mm, Wn in steps of 50 mm.
For dimensions (Wn x Hn) from 200 x 200 mm to 1000 x 1600 mm, A = 295 mm.



	≥	≤
(W x H) mm	200x200	1000x1600

MARKAGE MB + BP FM / IXI-R1

Smoke control damper with provision/space for a bus communication module (option BP FM) or integrated IXI-R1.
For dimensions (Wn x Hn) from 200 x 200 mm to 1000 x 400 mm, A = 465 instead of 295 mm.

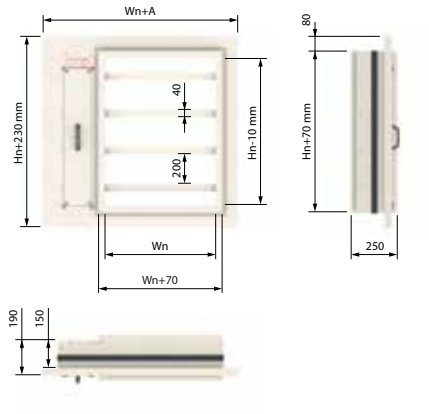


	≥	≤
(W x H) mm	200x200	1000x1600

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Range and dimensions MARKAGE MB-1S

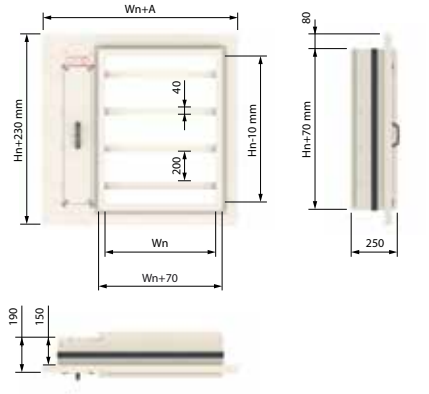
Smoke control damper with collar for dry installation.
For dimensions (Wn x Hn) from 200 x 200 mm to 1000 x 1600 mm, A = 455 mm.



	≥	≤
(W x H) mm	200x200	1000x1600

Variant MARKAGE MB-1S + BP FM / IXI-R1

Smoke control damper with collar for dry installation and provision/space for a bus communication module or integrated IXI-R1.
For dimensions (Wn x Hn) from 200 x 200 mm to 1000 x 400 mm, A = 625 instead of 455 mm.

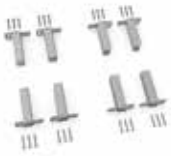


	≥	≤
(W x H) mm	200x200	1000x1600

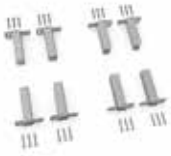
Evolution - kits

	KITS BEN24	Servomotor BEN 24V
	KITS BEN230	Servomotor BEN 230V
	KITS BEN24-ST	Servomotor BEN 24V with plug (ST)
	KITS BEE24	Servomotor BEE 24V
	KITS BEE230	Servomotor BEE 230V
	KITS BEE24-ST	Servomotor BEE 24V with plug (ST)
	KITS BE24	Servomotor BE 24V
	KITS BE230	Servomotor BE 230V
	KITS BE24-ST	Servomotor BE 24V with plug (ST)

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	KITS BP FM	Base plate for a bus communication module
	VS	Mounting brackets for vertical suspension
	HS	Mounting brackets for horizontal suspension
	JK BAT	Mounting hardware for combining multiple dampers into a battery
	IXI-R1	Universal field module to control and monitor motorised fire or smoke extraction dampers through a Modbus, BACnet or analog connection. The field module is supplied mounted on the fire damper.

Options - at the time of order

	BP FM	Base plate or space for a bus communication module
	VS	Mounting brackets for vertical suspension
	HS	Mounting brackets for horizontal suspension
	JK BAT	Mounting hardware for combining multiple dampers into a battery

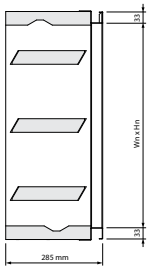


1S	Option for dry installation of the damper



IXI-R1	Universal field module to control and monitor motorised fire or smoke extraction dampers through a Modbus, BACnet or analog connection. The field module is supplied mounted on the fire damper.

Flange types - at the time of order



PG30	Flange for connection to metal ducts.



PPT	Galvanised steel grille.

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Storage and handling

As this product is a safety element, it should be stored and handled with care.

Avoid:

- any kind of impact or damage
- contact with water
- deformation of the casing

It is recommended:

- to unload in a dry area
- not to flip or roll the product to move it
- not to use the damper as a scaffold, working table, etc.
- not to store smaller dampers inside larger ones

Installation

General points

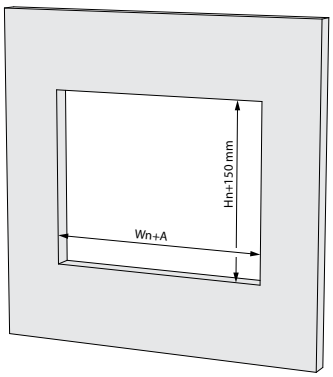
- The installation must comply with the installation manual and the classification report.
- The installation of the smoke control duct must comply with the classification report delivered by the manufacturer.
- Axis orientation: see the declaration of performance.
- Avoid the obstruction of adjoining smoke control ducts.
- Verify if the blade can move freely.
- Rf-t smoke dampers may be applied to smoke control ducts that have been tested according to EN 1366-8 and EN 1366-9 as appropriate, constructed from similar materials with a fire resistance, thickness and density equal or superior to these of the tested materials.
  - ⚠ Caution: when fitting, the product should be handled with care and remain protected from any sealing products.
  - ⚠ Caution: before putting the installation into operation, clean off all the dust and dirt.

Installation in a rigid wall

The product was tested and approved in:

Range	Wall type		Sealing	Classification
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Rigid wall	Aerated concrete ≥ 100 mm	Mortar	EI 90 (v_ew i ↔ o) S1500 C10000 HOT 400/30 MA MULTI

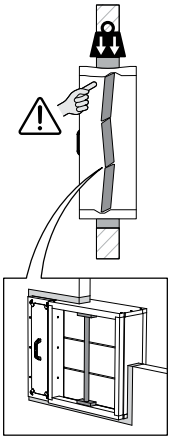
1



1. Make an opening with dimensions (Wn+A) x (Hn+150) mm. A = 375 mm for a standard damper.

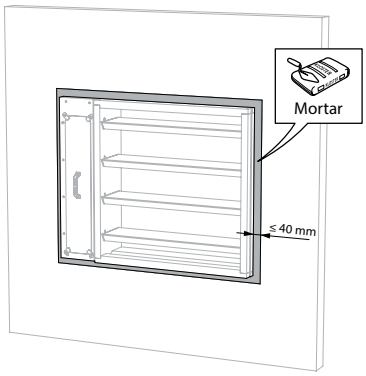
⚠ Caution: for a damper with height ≤ 400 mm and option BP FM or IXI-R1, A = 545 mm.

2



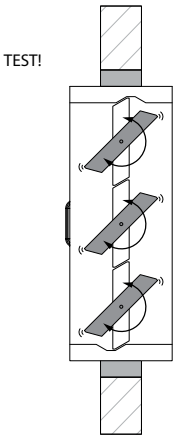
2. Mount the damper in the opening.
Support the tunnel and block the damper blades in the closed position to prevent deformation of the tunnel while the sealing is curing.

3



3. Seal the rest of the opening with standard mortar.

4



4. Check the functioning of the damper blades after the curing time of the sealing and after removing the struts.
Test the mechanism of the damper.

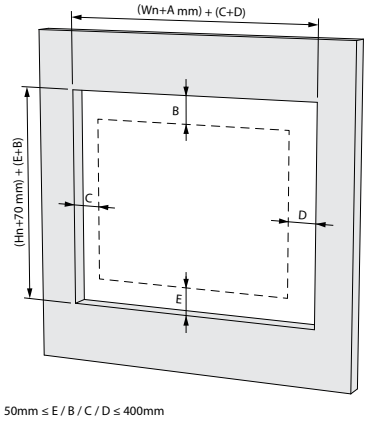
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Installation in a rigid wall, sealing with coated rigid rock wool boards

The product was tested and approved in:

Range	Wall type		Sealing	Classification
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Rigid wall	Aerated concrete ≥ 100 mm	Stone wool + coating ≥ 140 kg/m^3	EI 90 (v_ew i ↔ o) S1500 C10000 HOT 400/30 MA MULTI

1

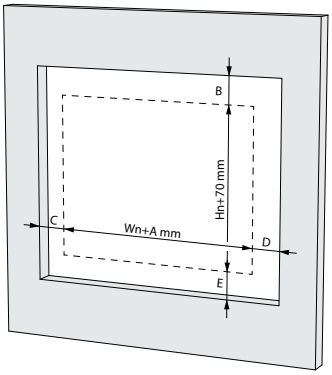


50mm ≤ E / B / C / D ≤ 400mm

1. Make an opening with dimensions (Wn+A+C+D) x (Hn+70+B+E) mm. A = 295 mm for a standard damper.

⚠ Caution: for a damper with height ≤ 400 mm and option BP FM or IXI-R1, A = 465 mm.

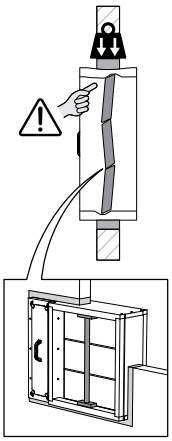
2



50mm ≤ E / B / C / D ≤ 400mm

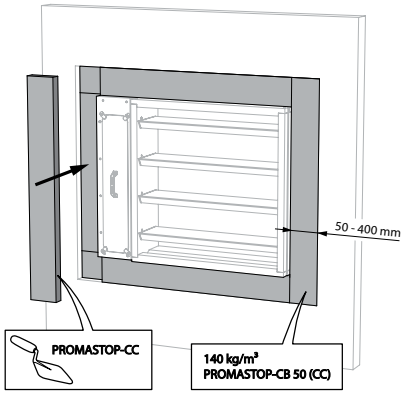
2. Mount the damper in the opening. Sealing B, C, D & E between 50 and 400 mm each.
The damper does not need to be centered in the opening. The maximum distance between the damper and the edge of the opening is 400 mm.

3



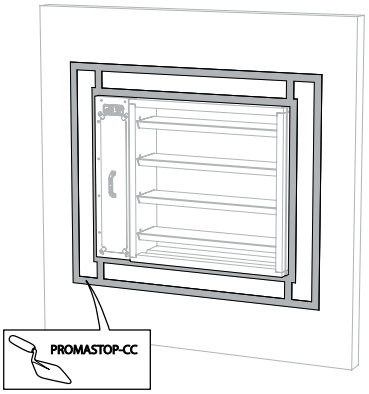
3. Support the tunnel and block the damper blades in the closed position to prevent deformation of the tunnel while the sealing is curing.

4



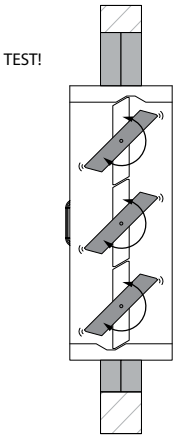
4. Seal the rest of the opening with 2 layers of 50 mm thick coated rigid mineral wool panels (type PROMASTOP CB-CC). The panels must be installed staggered. When installing, always apply coating (type PROMASTOP CC) to the end of each panel.

5



5. The panels must be installed staggered and the joints must be covered all around with coating (type PROMASTOP-CC) to create a uniform layer thickness for the entire sealing.

6



6. Check the functioning of the damper blades after the curing time of the sealing and after removing the struts.
Test the mechanism of the damper.

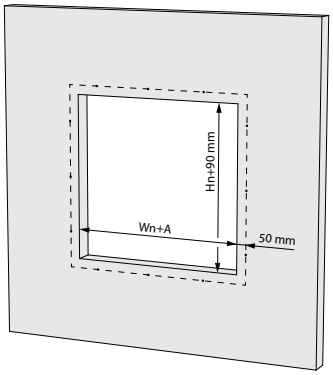
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Installation in a rigid wall with collar 1S

The product was tested and approved in:

Range	Wall type		Sealing	Classification
200x200 mm ≤ MARKAGE MB-1S ≤ 1000x1600 mm	Rigid wall	Aerated concrete ≥ 100 mm	Not applicable	EI 90/120 (v_ew i ↔ o) S1500 C10000 HOT 400/30 MA MULTI

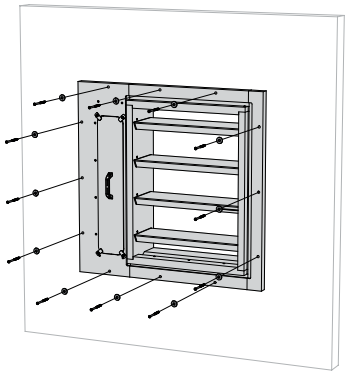
1



1. Make an opening with dimensions (Wn+A) x (Hn+90) mm.
A = 315 mm for a standard damper.

Caution: for a damper with height ≤ 400 mm and option BP FM or IXI-R1, A = 485 mm.

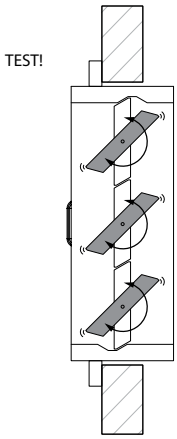
2



2. Mount the damper centrally in the opening with the collar against the wall and the collar mounting holes positioned 50 mm from the edge of the opening.
Secure the collar to the wall with the supplied screws Ø 8 x 110 mm and tabs.

⚠ Caution: the supplied screws are only suitable for aerated concrete. Use the appropriate type of screws for each wall type: For full bricks: pre-drill with Ø6mm and use the screws and tabs supplied. For compacted concrete: use concrete screws or anchors with characteristic resistance R90...R120 ≥ 0.1kN.

3



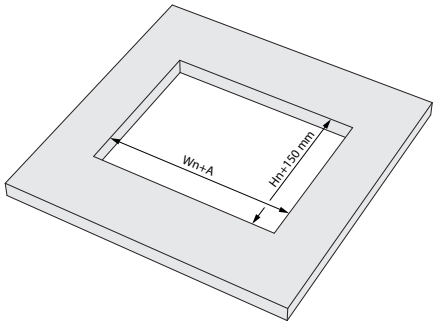
3. Check the functioning of the damper blades.
Test the mechanism of the damper.

Installation in rigid floor

The product was tested and approved in:

Range	Wall type		Sealing	Classification
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Rigid floor	Aerated concrete ≥ 100 mm	Mortar	EI 90/120 (h_ow i ↔ o) S1500 C10000 HOT 400/30 MA MULTI

1



1. Make an opening with dimensions (Wn+A) x (Hn+150) mm. A = 375 mm for a standard damper.

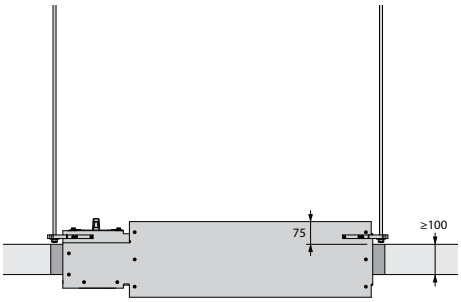
⚠ Caution: for a damper with height ≤ 400 mm and option BP FM or IXI-R1, A = 545 mm.

2



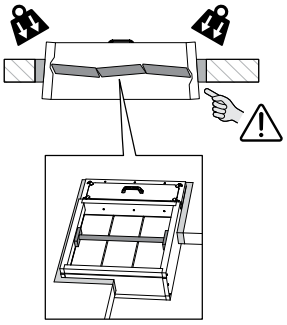
2. Mount the damper in the opening.

3



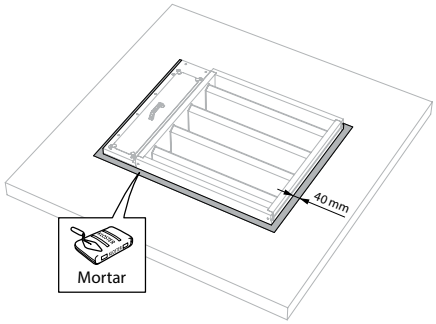
3. Optionally, the damper can be suspended separately with the horizontal suspension (HS MAS).

4



4. Support the tunnel and block the damper blades in the closed position to prevent deformation of the tunnel while the sealing is curing.

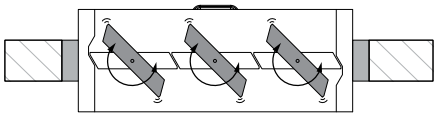
5



5. Seal the rest of the opening with standard mortar.

6

TEST!



6. Check the functioning of the damper blades after the curing time of the sealing and after removing the struts.
Test the mechanism of the damper.

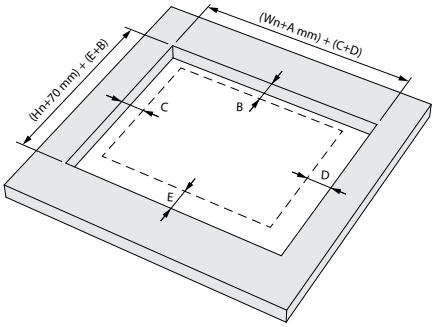
Rf-t Rf-Technologies
AMS AIR MOVEMENT SUPPLIES

Installation in rigid floor, sealing with rigid rock wool boards with coating

The product was tested and approved in:

Range	Wall type		Sealing	Classification
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Rigid floor	Aerated concrete ≥ 100 mm	Stone wool + coating ≥ 140 kg/m^3	EI 90/120 (h_ow i ↔ o) S1500 C10000 HOT 400/30 MA MULTI

1

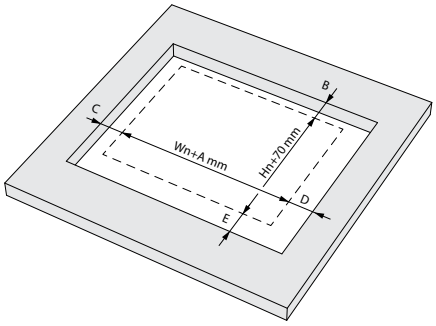


50mm ≤ E / B / C / D ≤ 400mm

1. Make an opening with dimensions (Wn+A+C+D) x (Hn+70+B+E) mm. A = 295 mm for a standard damper.

⚠ Caution: for a damper with height ≤ 400 mm and option BP FM or IXI-R1, A = 465 mm.

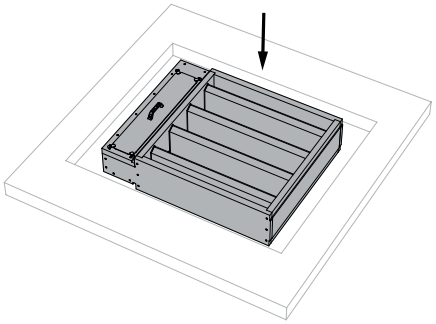
2



50mm ≤ E / B / C / D ≤ 400mm

2. Sealing B, C, D & E between 50 and 400 mm each.
The damper does not need to be centered in the opening. The maximum distance between the damper and the edge of the opening is 400 mm.

3



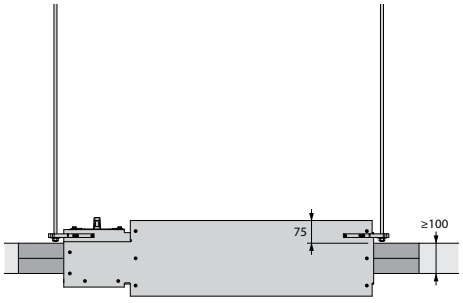
3. Mount the damper in the opening.

4



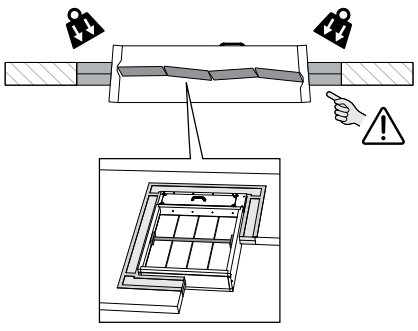
4. Bring the damper to the correct height so the seal fits centrally on the damper.

5



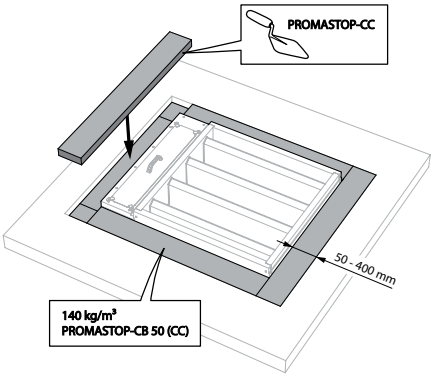
5. Optionally, the damper can be suspended separately with the horizontal suspension (HS MAS).

6



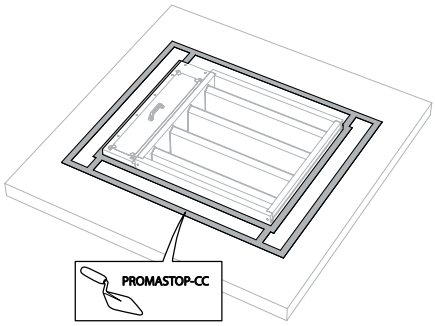
6. Support the tunnel and block the damper blades in the closed position to prevent deformation of the tunnel while the sealing is curing.

7



7. Seal the rest of the opening with 2 layers of 50 mm thick coated rigid mineral wool panels (type PROMASTOP CB-CC). The panels must be installed staggered. When installing, always apply coating (type PROMASTOP CC) to the end of each panel.

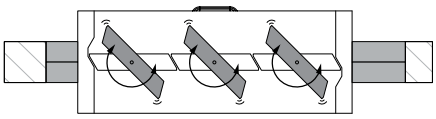
8



8. The joints must be covered all around with coating (type PROMASTOP-CC) to create a uniform layer thickness for the entire sealing.

9

TEST!



9. Check the functioning of the damper blades after the curing time of the sealing and after removing the struts.
Test the mechanism of the damper.

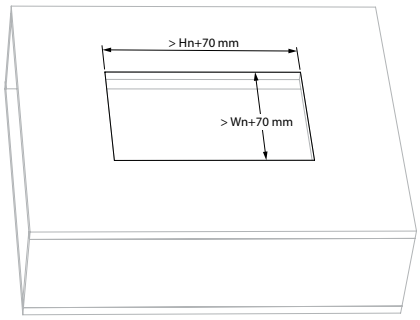
Rf-t Rf-Technologies
AMS AIR MOVEMENT SUPPLIES

Installation in a horizontal refractory duct, in the plane of the duct

The product was tested and approved in:

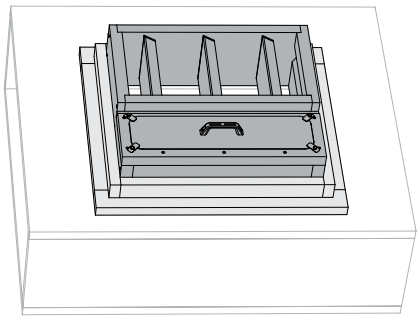
Range	Wall type		Sealing	Classification
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Horizontal refractory duct	Promatect LS ≥ 35 mm	Promat glue K84	EI 90/120* (h_{od} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Horizontal refractory duct	Promatect L500 ≥ 40 mm	Promat glue K84	EI 90/120* (h_{od} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Horizontal refractory duct	Promatect AD ≥ 40 mm	Promat glue K84	EI 90/120* (h_{od} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI

1



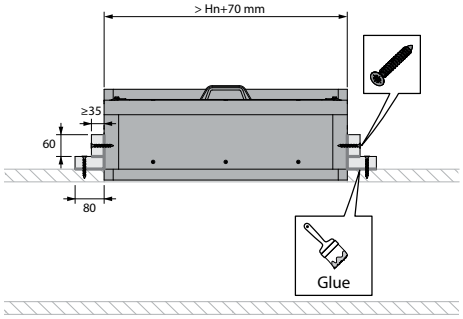
1. Make an opening with minimum dimensions (Wn+70) x (Hn+70) mm.

2



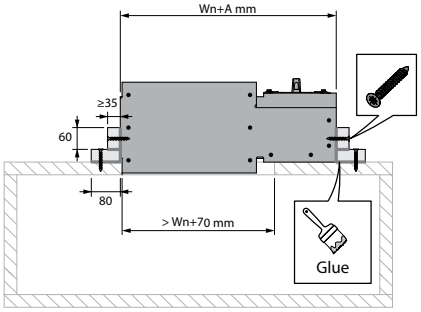
2. The damper can be mounted directly in this opening.
Fit the damper in the opening with the access hatch accessible.
Place the back wall of the damper against the duct.
Installation of the damper does not require a minimum duct depth. The product will not obstruct the airflow in the duct.

3



3. Seal the joint between the damper and the opening with Promat Glue K84. Install the positioning and sealing strips with screws Ø 5 x 50 mm with a maximum spacing of 200 mm and Promat Glue K84. Make sure no screws penetrate the damper casing.
Fabricate the positioning and sealing strips from duct material. For a corner seal, use two strips of 80 mm and 60 mm respectively.

4

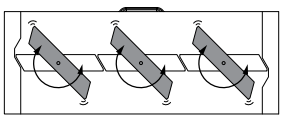


4. A = 295 mm for a standard damper.

⚠ Caution: for a damper with height ≤ 400 mm and option BP FM or IXI-R1, A = 465 mm.

5

TEST!



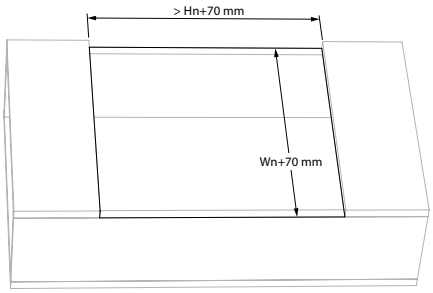
5. Check the functioning of the damper blades after the curing time of the sealing and after removing the struts.
Test the mechanism of the damper.

Installation in a horizontal refractory duct, overlapping with one side of the duct

The product was tested and approved in:

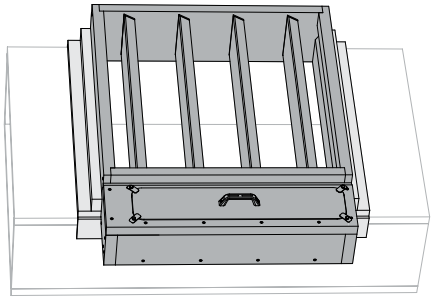
Range	Wall type		Sealing	Classification
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Horizontal refractory duct	Promatect LS ≥ 35 mm	Promat glue K84	EI 90/120* (h_{od} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Horizontal refractory duct	Promatect L500 ≥ 40 mm	Promat glue K84	EI 90/120* (h_{od} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Horizontal refractory duct	Promatect AD ≥ 40 mm	Promat glue K84	EI 90/120* (h_{od} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI

1



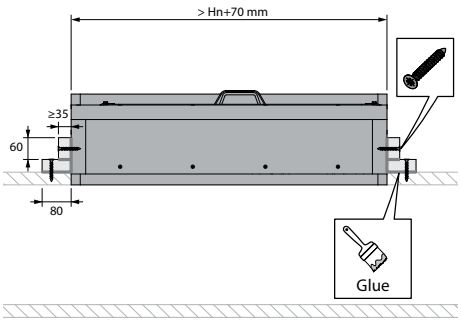
1. Make an opening with minimum dimensions (Wn+70) x (Hn+70) mm.
If the opening overlaps with an edge of the duct, follow the installation method below.

2



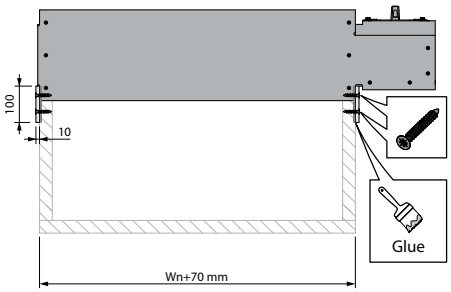
2. The damper can be mounted directly in this opening.
If the flanges of the damper coincide with an edge of the duct, make sure they are flush with the duct.
Installation of the damper does not require a minimum duct depth. The product will not obstruct the airflow in the duct.

3



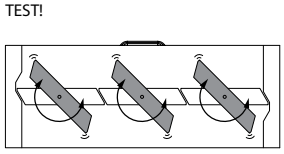
3. Seal the joint between the damper and the opening with Promat Glue K84. Install the positioning and sealing strips with screws Ø 5 x 50 mm with a maximum spacing of 200 mm and Promat Glue K84. Make sure no screws penetrate the damper casing.
Fabricate the positioning and sealing strips from duct material. For a corner seal, use two strips of 80 mm and 60 mm respectively.

4



4. For flat sealing on the flange of the damper, use a strip 10 x 100 mm made from calcium silicate with a density of 870 kg/m^3 (type PROMATECT H). Fasten these bars strips two rows of screws Ø 3.9 x 35 mm at intervals of 150 mm.

5



5. Check the functioning of the damper blades after the curing time of the sealing and after removing the struts.
Test the mechanism of the damper.

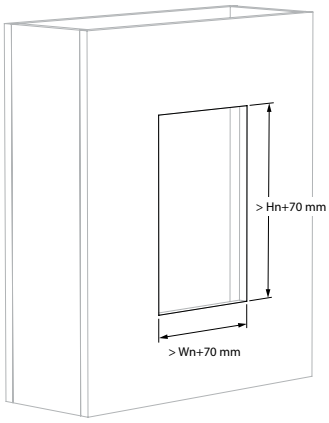
Rf-Technologies
AMS AIR MOVEMENT SUPPLIES

Installation in a vertical refractory duct or in the vertical plane of a horizontal duct, within the plane of the duct

The product was tested and approved in:

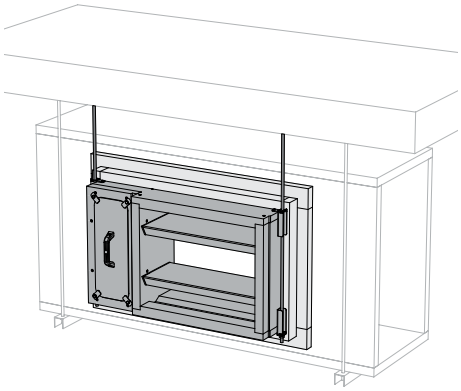
Range	Wall type		Sealing	Classification
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Vertical refractory duct	Promatect LS ≥ 35 mm	Promat glue K84	EI 90/120* (v_{ed} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Vertical refractory duct	Promatect L500 ≥ 40 mm	Promat glue K84	EI 90/120* (v_{ed} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Vertical refractory duct	Promatect AD ≥ 40 mm	Promat glue K84	EI 90/120* (v_{ed} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI

1



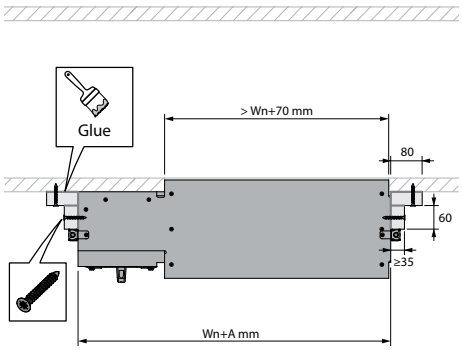
1. Make an opening with minimum dimensions (Wn+70) x (Hn+70) mm.

2



2. Optionally, the damper can be suspended separately with the vertical suspension (VS MAS).

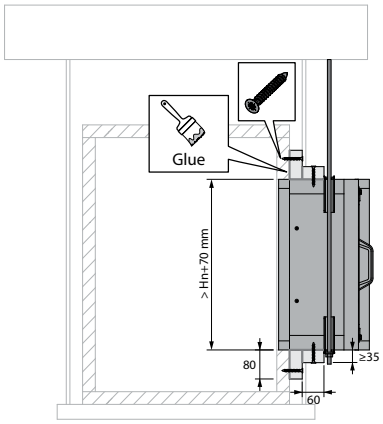
3



3. The damper can be mounted directly in this opening.
Fit the damper in the opening with the access hatch accessible.
Place the back wall of this compartment against the duct.
Installation of the damper does not require a minimum duct depth. The product will not obstruct the airflow in the duct.
A = 295 mm for a standard damper.

⚠ Caution: for a damper with height ≤ 400 mm and option BP FM or IXI-R1, A = 465 mm.

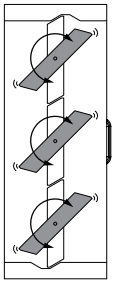
4



4. Seal the joint between the damper and the opening with Promat Glue K84. Install the positioning and sealing strips with screws Ø 5 x 50 mm with a maximum spacing of 200 mm and Promat Glue K84. Make sure no screws penetrate the damper casing.
Fabricate the positioning and sealing strips from duct material. For a corner seal, use two strips of 80 mm and 60 mm respectively.

5

TEST!



5. Check the functioning of the damper blades after the curing time of the sealing and after removing the struts.
Test the mechanism of the damper.

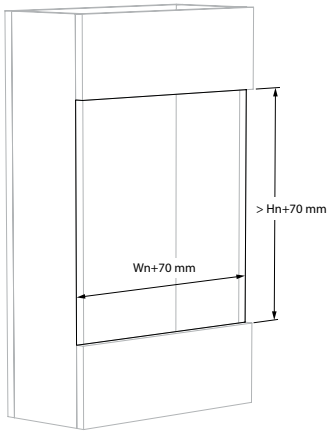
Rf-t Rf-Technologies
AMS AIR MOVEMENT SUPPLIES

Installation in a vertical refractory duct, overlapping with one side of the duct

The product was tested and approved in:

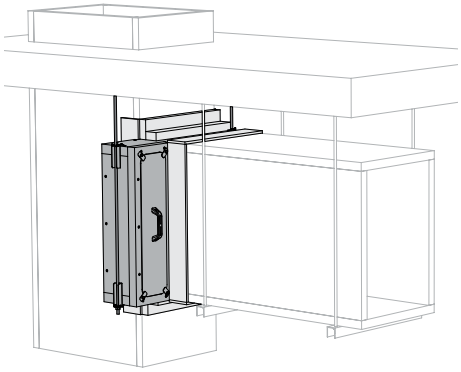
Range	Wall type		Sealing	Classification
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Vertical refractory duct	Promatect LS ≥ 35 mm	Promat glue K84	EI 90/120* (v_{ed} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Vertical refractory duct	Promatect L500 ≥ 40 mm	Promat glue K84	EI 90/120* (v_{ed} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Vertical refractory duct	Promatect AD ≥ 40 mm	Promat glue K84	EI 90/120* (v_{ed} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI

1



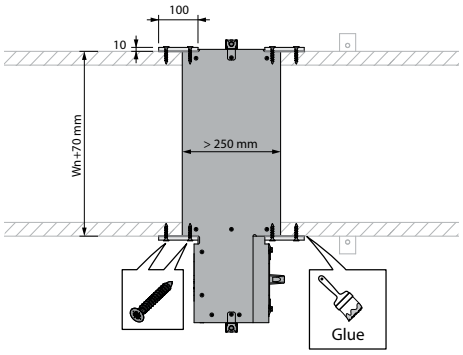
1. Make an opening with minimum dimensions (Wn+70) x (Hn+70) mm.
If the opening overlaps with an edge of the duct, follow the installation method below.

2



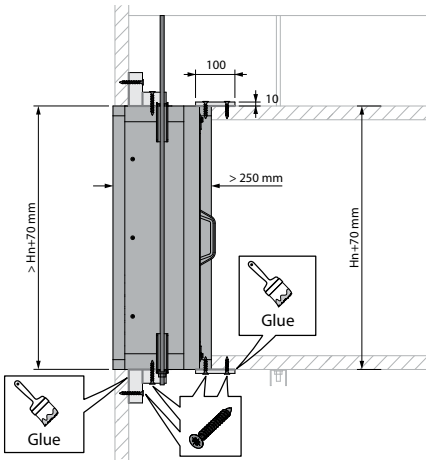
2. Optionally, the damper can be suspended separately with the vertical suspension (VS MAS).
The damper can be mounted directly in this opening.
Fit the damper in the opening with the access hatch accessible.
The back wall of the damper is placed against the duct if it does not extend outside the duct.
If the flanges of the damper coincide with an edge of the duct, make sure they are flush with the duct.
Installation of the damper does not require a minimum duct depth. The product will not obstruct the airflow in the duct.

3



3. Seal the joint between the damper and the opening with Promat Glue K84. For flat sealing on the flange of the damper, use a strip 10 x 100 mm made from calcium silicate with a density of 870 kg/m^3 (type PROMATECT H). Fasten these strips with two rows of screws Ø 3.9 x 35 mm at intervals of 150 mm.

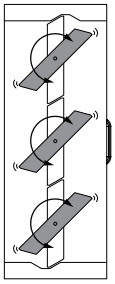
4



4. Install the positioning and sealing strips with screws Ø 5 x 50 mm with a maximum spacing of 200 mm and Promat Glue K84. Make sure no screws penetrate the damper casing. Fabricate the positioning and sealing strips from duct material. For a corner seal, use two strips of 80 mm and 60 mm respectively.

5

TEST!



5. Check the functioning of the damper blades after the curing time of the sealing and after removing the struts.
Test the mechanism of the damper.

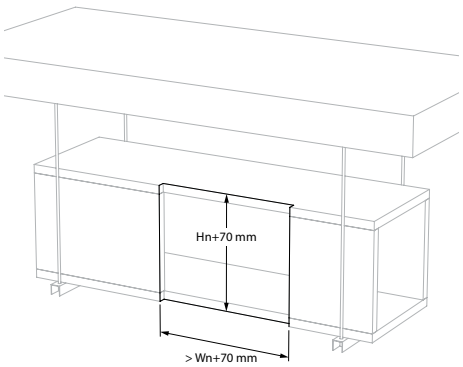
Rf-t Rf-Technologies
AMS AIR MOVEMENT SUPPLIES

Installation in the vertical plane of a horizontal refractory duct, overlapping with one side of the duct

The product was tested and approved in:

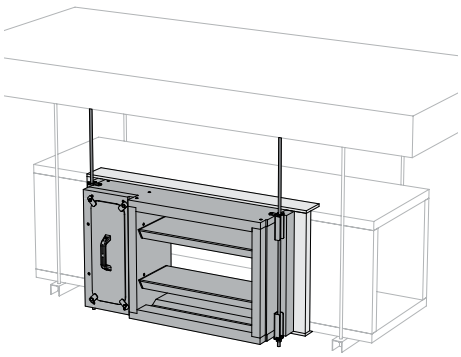
Range	Wall type		Sealing	Classification
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Horizontal refractory duct	Promatect LS ≥ 35 mm	Promat glue K84	EI 90/120* (h_{od} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Horizontal refractory duct	Promatect L500 ≥ 40 mm	Promat glue K84	EI 90/120* (h_{od} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI
200x200 mm ≤ MARKAGE MB ≤ 1000x1600 mm	Horizontal refractory duct	Promatect AD ≥ 40 mm	Promat glue K84	EI 90/120* (h_{od} i ↔ o) S1500 C10000 HOT 400/30 MA MULTI

1



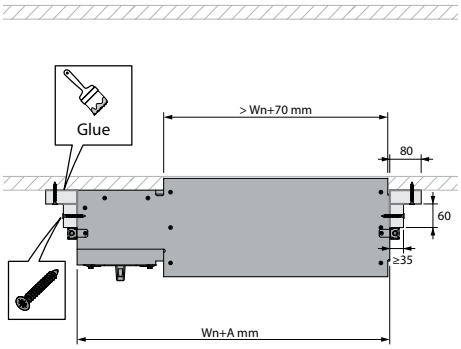
1. Make an opening with minimum dimensions (Wn+70) x (Hn+70) mm.
If the opening overlaps with an edge of the duct, follow the installation method below.

2



2. Optionally, the damper can be suspended separately with the vertical suspension (VS MAS).
The damper can be mounted directly in this opening.
Fit the damper in the opening with the access hatch accessible.
The back wall of the damper is placed against the duct if it does not extend outside the duct.
If the flanges of the damper coincide with an edge of the duct, make sure they are flush with the duct.
Installation of the damper does not require a minimum duct depth. The product will not obstruct the airflow in the duct.

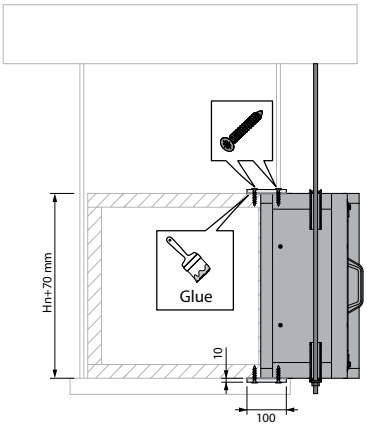
3



3. Seal the joint between the damper and the opening with Promat Glue K84. Install the positioning and sealing strips with screws Ø 5 x 50 mm with a maximum spacing of 200 mm and Promat Glue K84. Make sure no screws penetrate the damper casing.
Fabricate the positioning and sealing strips from duct material. For a corner seal, use two strips of 80 mm and 60 mm respectively.
A = 295 mm for a standard damper.

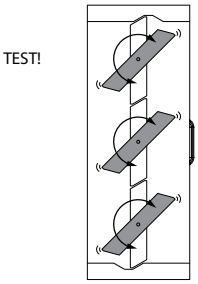
⚠ Caution: for a damper with height ≤ 400 mm and option BP FM or IXI-R1, A = 465 mm.

4



4. For flat sealing on the flange of the damper, use a strip 10 x 100 mm made from calcium silicate with a density of 870 kg/m^3 (type PROMATECT H). Fasten these bars strips two rows of screws Ø 3.9 x 35 mm at intervals of 150 mm.

5



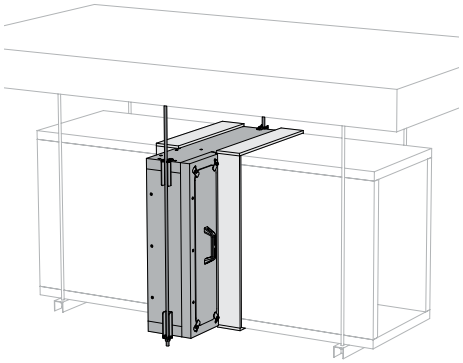
5. Check the functioning of the damper blades after the curing time of the sealing and after removing the struts.
Test the mechanism of the damper.

Rf-t Rf-Technologies
AMS AIR MOVEMENT SUPPLIES

Installation in a refractory duct, in the cross-section of the duct

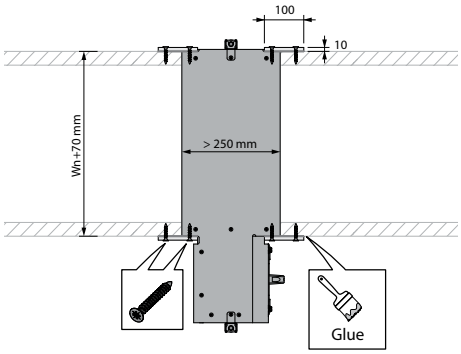
The product was tested and approved in:

1



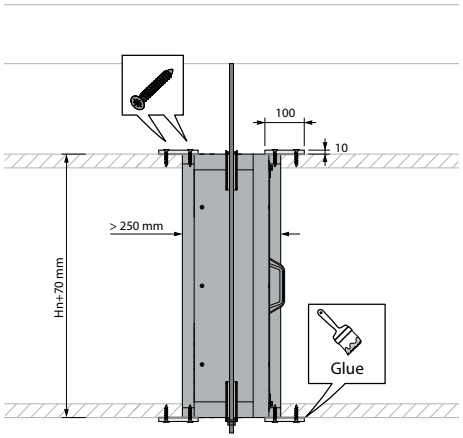
1. Place the damper in the middle of the duct with external dimensions (Wn + 70) x (Hn + 70) mm. The damper can be suspended separately with the vertical suspension (VS MAS). Analogously, the horizontal suspension (HS MAS) can be used with a vertical duct.

2



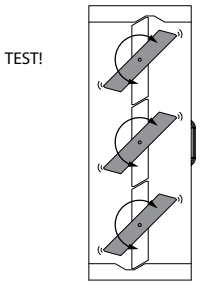
2. Seal the joint between the damper and the opening with Promat Glue K84. For flat sealing on the flange of the damper, use a strip 10 x 100 mm made from calcium silicate with a density of 870 kg/m^3 (type PROMATECT H). Fasten these strips with two rows of screws Ø 3.9 x 35 mm at intervals of 150 mm.

3



3. Finish the sealing completely.

4

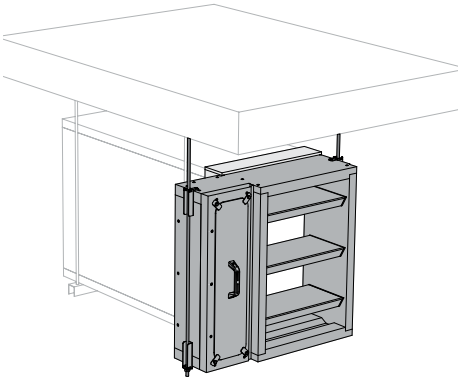


4. Check the functioning of the damper blades after the curing time of the sealing and after removing the struts.
Test the mechanism of the damper.

Installation in a refractory duct, at the end of the duct

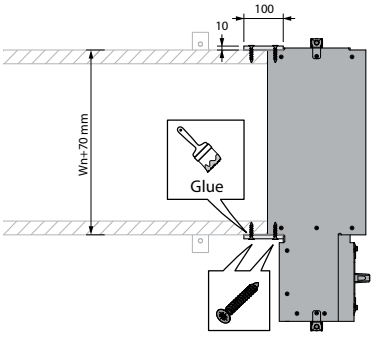
The product was tested and approved in:

1



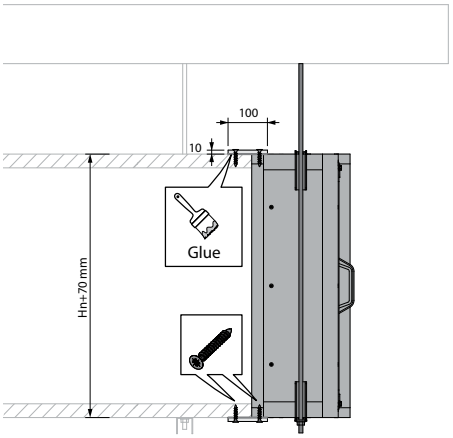
1. Place the damper in the middle of the duct with external dimensions (Wn + 70) x (Hn + 70) mm. The damper can be suspended separately with the vertical suspension (VS MAS). Analogously, the horizontal suspension (HS MAS) can be used with a vertical duct.

2



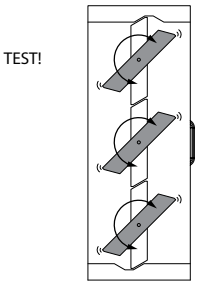
2. Seal the joint between the damper and the opening with Promat Glue K84. For flat sealing on the flange of the damper, use a strip 10 x 100 mm made from calcium silicate with a density of 870 kg/m^3 (type PROMATECT H). Fasten these strips with two rows of screws Ø 3.9 x 35 mm at intervals of 150 mm.

3



3. Finish the sealing completely.

4

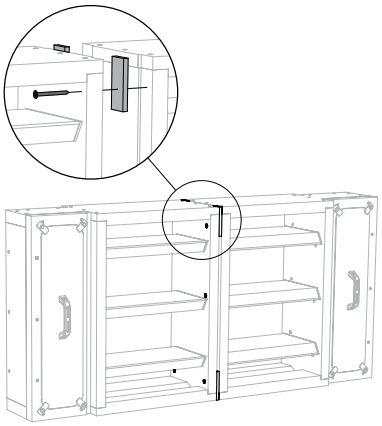


4. Check the functioning of the damper blades after the curing time of the sealing and after removing the struts.
Test the mechanism of the damper.
Place a grille (PPT) on the damper to protect the damper blades.

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AMS AIR MOVEMENT SUPPLIES

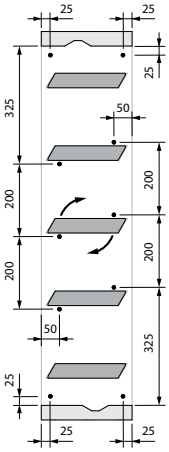
Battery mounting with option JK BAT

1



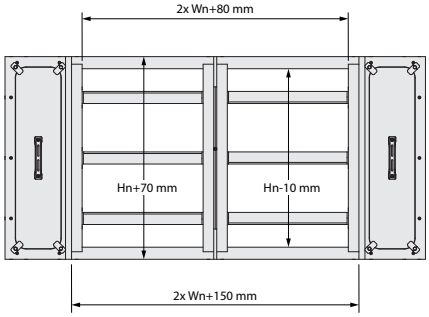
1. For battery mounting with the damper blades in line with each other:
Install both dampers against one another with the connection compartments on opposite sides.
Install the calcium silicate plates at the end of each groove between both dampers. Make sure the plates are flush with the damper connection flanges.

2



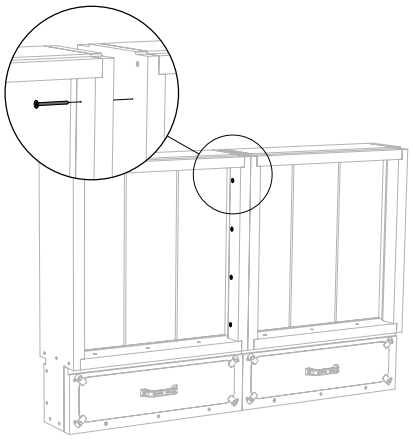
2. Attach one damper to the other with the supplied screws Ø 5 x 70 mm. Pay attention to the rotation direction of the damper blades and ensure that the screws do not interfere with the damper blades.

3



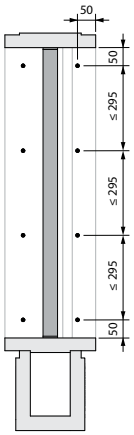
3. The collar with external dimensions ((2 x Wn) +150) mm x (Hn + 70) mm is suitable for connecting a common duct.

4



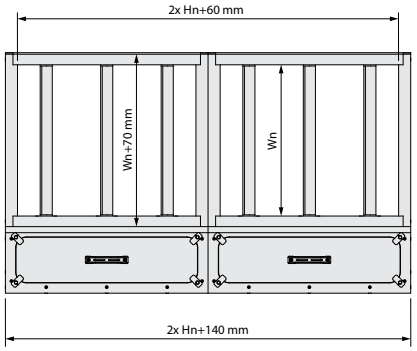
4. For battery mounting with the connection compartments in line with each other:
Install both dampers against one another with the connection compartments aligned.

5



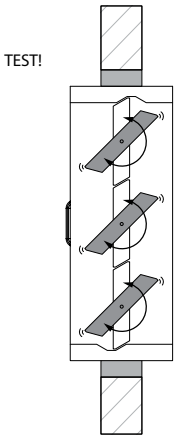
5. Attach one damper to the other with the supplied screws Ø 5 x 70 mm on both the front and back of the dampers.

6



6. The collar with external dimensions ((2 x Wn) +140) mm x (Hn + 70) mm is suitable for connecting a common duct.

7



7. Check the functioning of the damper blades after the curing time of the sealing and after removing the struts.
Test the mechanism of the damper.

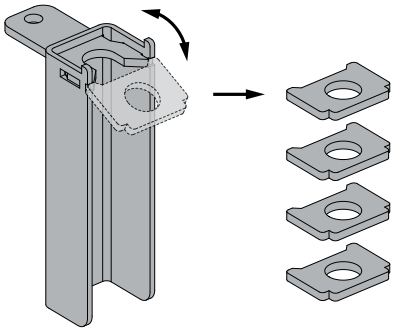
Rf-t Rf-Technologies
AMS AIR MOVEMENT SUPPLIES

Installation with vertical suspension (VS MAS)

1

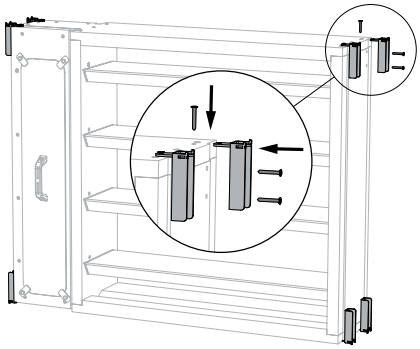


2



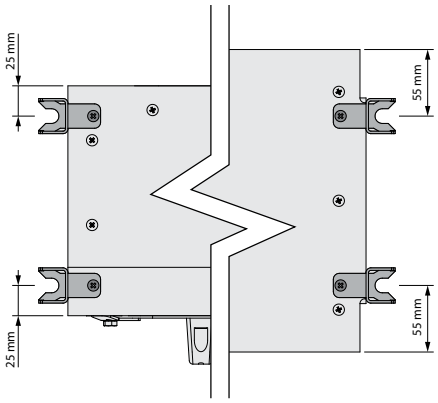
2. Break off the tabs of the angle brackets and save them for further installation.

3



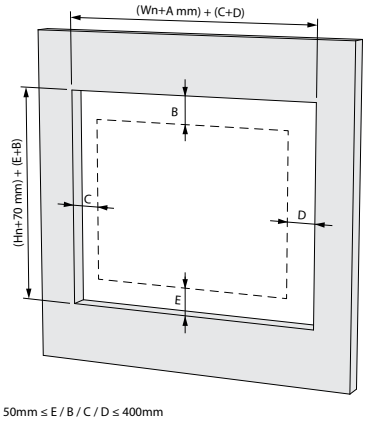
3. Fit the angle brackets on the corners of the damper.
The orientation depends on the desired orientation of the damper (vertical or horizontal damper blades).
Align the U-profiles of the angle brackets with one another and note the vertical direction. The short side of each angle bracket, with one screw, should be on the top or bottom of the damper.

4



4. Attach the angle brackets with the supplied screws Ø 5x35 mm. The screws near the connection compartment are 25 mm from the edge, while screws in the tunnel wall are 55 mm from the edge.

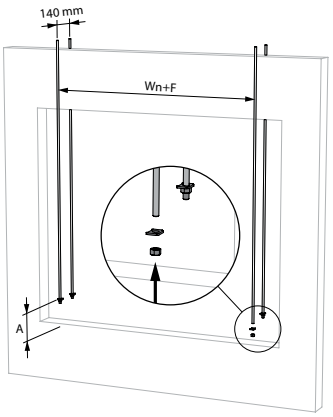
5



50mm ≤ E / B / C / D ≤ 400mm

5. Position the damper in the opening of the wall according to the guidelines for each wall type.

6



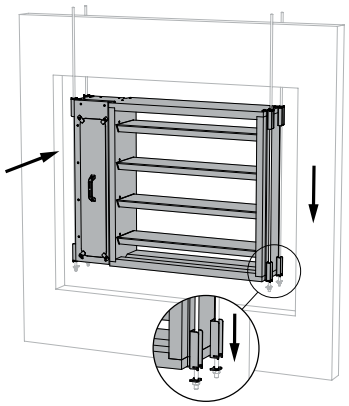
50mm ≤ A ≤ 400 mm

6. Fit the threaded rods (≥ M10) for damper suspension on the front and back of the wall, with F = 320 mm for a standard damper.

⚠ Caution: for a damper with height ≤ 400 mm and option BP FM or IXI-R1, F = 490 mm.

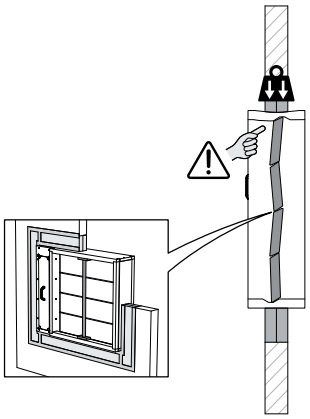
Put a tab and a nut on each threaded rod. Align all tabs at the same height.

7



7. Place the damper on the tabs. The threaded rods must be inside the U profiles of the angle brackets. Make sure to secure the tabs to the bottom angle brackets.
When passing through the compartment wall, the suspension must not be insulated. When installed in ducts, the suspension must be insulated in the same way as the suspension of the duct.

8

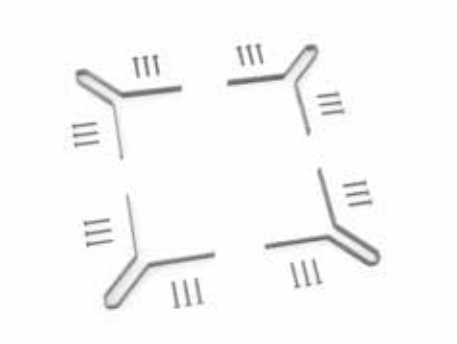


8. Support the tunnel and block the damper blades in the closed position to prevent deformation of the tunnel while the sealing is curing.
Complete the sealing of the damper according to the guidelines per wall type.

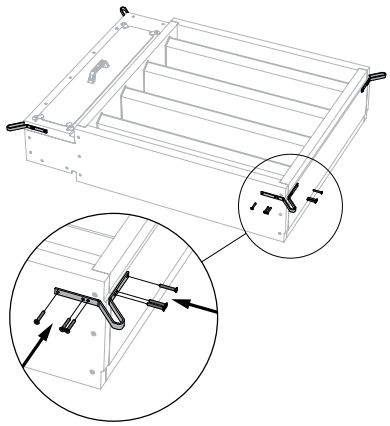
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AMS AIR MOVEMENT SUPPLIES

Installation with horizontal suspension (HS MAS)

1

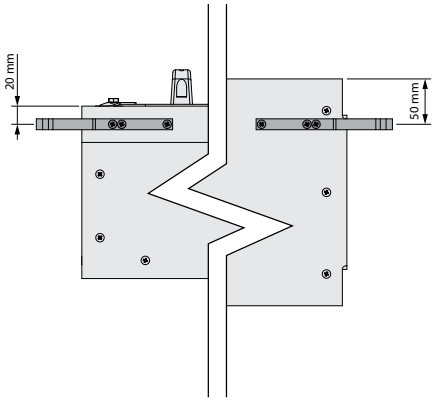


2



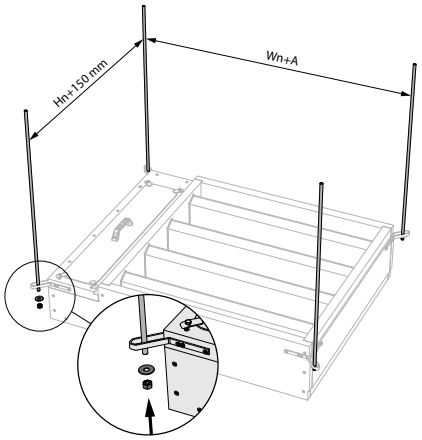
2. Fit the angle brackets on the corners of the damper.

3



3. Attach the angle brackets with the supplied screws Ø 5x35 mm. The screws near the connection compartment are 20 mm from the edge, while screws in the tunnel wall are 50 mm from the edge.

4



4. Fit the threaded rods (≥ M10) for damper suspension, with A = 375 mm for a standard damper. Caution: for a damper with height ≤ 400 mm and option BP FM or IXI-R1, A = 545 mm. Position the damper and place a tab and a nut on each threaded rod for fastening.
Complete the sealing of the damper according to the guidelines per wall type.

Maintenance

- No specific maintenance required.
- Schedule at least 2 visual checks each year.
- Remove dust and all other particles before use.
- Follow local maintenance regulations (i.e. BS9999 Annex V; NF S 61-933) and EN13306.

Operation and mechanisms

BEN/BEE Remotely controlled servomotor

The BEN/BEE servomotor is specifically designed for remote control of smoke control dampers.



1. access for manual resetting
2. plug (ST)

Options - at the time of order

BP FM	Base plate or space for a bus communication module
IXI-R1	Universal field module (Modbus, BACnet or analog connection), pre-mounted on the damper.

Unlocking

- **manual unlocking**: turn the enclosed handle anticlockwise (VRE) or clockwise (MARKAGE MB).
- **remote unlocking**: power cables 1 and 2.

Caution:

⚠ Do not use a drill or powered screwdriver.

Resetting

- **manual resetting**: turn the enclosed handle clockwise (VRE) or anticlockwise (MARKAGE MB).
- **motorised resetting**: power cables 1 and 3.

Caution:

⚠ Do not use a drill or powered screwdriver.

BE (MAS) Remotely controlled servomotor

The BE actuator is specifically designed for remote control of MARKAGE MB smoke control dampers with large dimensions (Hn ≥ 1200 mm).



1. access for manual resetting
2. plug (ST)

Options - at the time of order

BP FM	Base plate or space for a bus communication module
IXI-R1	Universal field module (Modbus, BACnet or analog connection), pre-mounted on the damper.

Unlocking

- **manual unlocking**: turn the enclosed handle anti-clockwise.
- **automatic unlocking**: n/a
- **remote unlocking**: power cables 1 and 2.

Caution:

⚠ Do not use a drill or powered screwdriver.

Resetting

- **manual resetting**: turn the enclosed handle clockwise.
- **motorised resetting**: power cables 1 and 3.

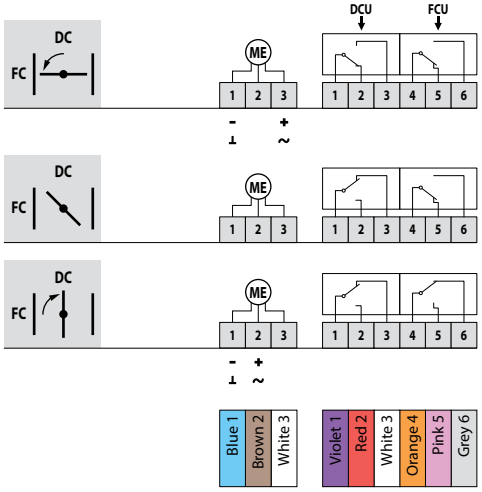
Caution:

⚠ Do not use a drill or powered screwdriver.

Rf-t Rf-Technologies
AMS AIR MOVEMENT SUPPLIES

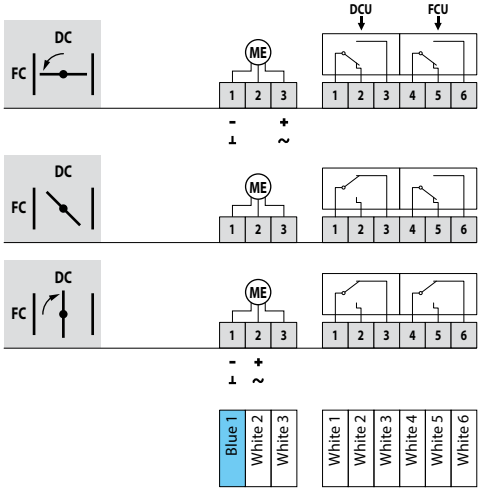
Electrical connection

BEN/BEE



DC : Switch closed position smoke evacuation shutter
FC : Switch open position smoke evacuation shutter

BE (MAS)



DC : Switch closed position smoke evacuation shutter
FC : Switch open position smoke evacuation shutter

MEC	Nominal voltage motor	Nominal voltage magnet	Power consumption (stand-by)	Power consumption (operating)	Standard switches
BEN24	24 V AC/DC		0,1W	3W	1mA...3A, AC 250V
BEN230	230 V AC		0,4W	4W	1mA...3A, AC 250V
BEN24-ST	24 V AC/DC		0,1W	3W	1mA...3A, AC 250V
BEE24	24 V AC/DC		0,1W	2,5W	1mA...3A, AC 250V
BEE230	230 V AC		0,4W	3,5W	1mA...3A, AC 250V
BEE24-ST	24 V AC/DC		0,1W	2,5W	1mA...3A, AC 250V
BE24	24 V AC/DC	N/A	0,5W	12W	1mA...6A, DC 5V...AC 250V
BE230	230 V AC	N/A	0,5W	8W	1mA...6A, DC 5V...AC 250V
BE24-ST	24 V AC/DC	N/A	0,5W	12W	1mA...6A, DC 5V...AC 250V

MEC	Resetting time motor	Running time spring	Noise level motor	Cable supply / control	Cable auxiliary switch	Protection class
BEN24	< 30 s (90°)		58 dB (A)	1 m, 3 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BEN230	< 30 s (90°)		58 dB (A)	1 m, 3 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BEN24-ST	< 30 s (90°)		58 dB (A)	1 m, 3 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BEE24	< 60 s (90°)		58 dB (A)	1 m, 3 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BEE230	< 60 s (90°)		58 dB (A)	1 m, 3 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BEE24-ST	< 60 s (90°)		58 dB (A)	1 m, 3 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BE24	< 60 s (90°)	N/A	ca. 62 dB (A)	1 m, 3 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BE230	< 60 s (90°)	N/A	ca. 62 dB (A)	1 m, 3 x 0.75 mm² (halogen-free)	1 m, 6 x 0.75 mm² (halogen-free)	IP 54
BE24-ST	< 60 s (90°)	N/A	ca. 62 dB (A)	1 m, 3 x 0.75 mm² (halogen-free), with plug connectors, suitable for IXI-R1, IXI-R2(-230), BKNE230-24	1 m, 6 x 0.75 mm² (halogen-free), with plug connectors, suitable for IXI-R1, IXI-R2(-230), BKNE230-24	IP 54

Weights

MARKAGE MB + BEN

Hn\Wn [mm]		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
200	kg	13,9	14,7	15,6	16,4	17,3	18,2	19,0	19,9	20,7	21,6	22,4	23,3	24,1	25,0	25,8	26,7	27,6
400	kg	20,6	21,7	22,8	23,9	25,0	26,1	27,3	28,4	29,5	30,6	31,7	32,8	33,9	35,1	36,2	37,3	38,4
600	kg	27,3	28,6	30,0	31,4	32,8	34,1	35,5	36,9	38,2	39,6	41,0	42,4	43,7	45,1	46,5	47,9	49,2
800	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1600	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

MARKAGE MB + BEE

Hn\Wn [mm]		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
200	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
600	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
800	kg	34,6	36,2	37,9	39,5	41,1	42,8	44,4	46,0	47,7	49,3	50,9	52,6	54,2	55,8	57,5	59,1	60,7
1000	kg	42,7	44,6	46,5	48,4	50,3	52,2	54,1	56,0	57,9	59,7	61,6	63,5	65,4	67,3	69,2	71,1	73,0
1200	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1600	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

MARKAGE MB + BE

Hn\Wn [mm]		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
200	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
600	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
800	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200	kg	49,5	51,7	53,8	56,0	58,1	60,3	62,4	64,6	66,7	68,9	71,0	73,2	75,3	77,5	79,6	81,8	83,9
1400	kg	56,3	58,7	61,1	63,5	65,9	68,3	70,7	73,2	75,6	78,0	80,4	82,8	85,2	87,6	90,0	92,5	94,9
1600	kg	63,3	66,0	68,7	71,3	74,0	76,7	79,3	82,0	84,7	87,4	90,0	92,7	95,4	98,0	100,7	103,4	106,1

MARKAGE MB + BP FM / IXI-R1 + BEN

Hn\Wn [mm]		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
200	kg	17,2	18,1	18,9	19,8	20,6	21,5	22,3	23,2	24,0	24,9	25,8	26,6	27,5	28,3	29,2	30,0	30,9
400	kg	25,7	26,8	27,9	29,0	30,1	31,2	32,3	33,5	34,6	35,7	36,8	37,9	39,0	40,1	41,3	42,4	43,5

Rf-t Rf-Technologies
AMS AIR MOVEMENT SUPPLIES

MARKAGE MB-1S + BEN

Hn\Wn [mm]		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
200	kg	18,4	20,1	21,3	22,4	23,6	24,7	26,0	27,1	26,8	29,4	30,6	31,7	32,9	34,0	35,2	36,3	37,5
400	kg	26,0	28,0	29,4	30,8	32,2	33,6	35,1	36,5	36,5	39,3	40,7	42,2	43,6	45,0	46,4	47,8	49,2
600	kg	33,5	35,7	37,4	39,1	40,7	42,4	44,2	45,8	46,1	49,2	50,8	52,5	54,2	55,9	57,5	59,2	60,9
800	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1600	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

MARKAGE MB-1S + BEE

Hn\Wn [mm]		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
200	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
600	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
800	kg	41,7	44,2	46,1	48,1	50,0	51,9	53,9	55,9	56,3	59,7	61,7	63,6	65,5	67,5	69,4	71,3	73,3
1000	kg	50,7	53,4	55,6	57,8	60,0	62,2	64,5	66,7	67,4	71,0	73,2	75,4	77,6	79,8	82,0	84,2	86,4
1200	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1400	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1600	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

MARKAGE MB-1S + BE

Hn\Wn [mm]		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
200	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
400	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
600	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
800	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1000	kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1200	kg	58,3	61,4	63,8	66,3	68,7	71,2	73,7	76,2	77,2	81,1	83,5	86,0	88,4	90,9	93,3	95,8	98,2
1400	kg	65,9	69,2	71,9	74,7	77,4	80,1	82,9	85,6	86,8	91,0	93,7	96,4	99,1	101,8	104,5	107,2	110,0
1600	kg	73,9	77,4	80,4	83,4	86,3	89,3	92,3	95,3	96,8	101,2	104,2	107,2	110,2	113,1	116,1	119,1	122,0

MARKAGE MB-1S + BP FM / IXI-R1 + BEN

Hn\Wn [mm]		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
200	kg	22,4	24,2	25,3	26,5	27,6	28,8	30,0	31,1	30,9	33,5	34,6	35,8	36,9	38,1	39,2	40,4	41,5
400	kg	31,8	33,8	35,2	36,6	38,0	39,4	40,9	42,3	42,3	45,2	46,6	48,0	49,4	50,8	52,2	53,6	55,0

Selection data

$$\Delta p = 0{,}6 * v^2 * \zeta$$

Hn\Wn [mm]		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
200	ζ [-]	0,48	0,47	0,46	0,45	0,44	0,43	0,42	0,41	0,40	0,40	0,40	0,40	0,40	0,40	0,39	0,39	0,39
400	ζ [-]	0,37	0,36	0,34	0,33	0,32	0,31	0,30	0,29	0,28	0,28	0,28	0,28	0,27	0,27	0,27	0,27	0,27
600	ζ [-]	0,33	0,32	0,31	0,30	0,29	0,28	0,27	0,26	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25	0,25
800	ζ [-]	0,32	0,31	0,30	0,29	0,28	0,27	0,26	0,25	0,23	0,23	0,23	0,23	0,23	0,23	0,22	0,22	0,22
1000	ζ [-]	0,31	0,30	0,29	0,29	0,27	0,26	0,25	0,24	0,23	0,22	0,22	0,22	0,22	0,22	0,21	0,21	0,21
1200	ζ [-]	0,30	0,29	0,29	0,28	0,27	0,26	0,25	0,23	0,22	0,22	0,21	0,21	0,21	0,21	0,21	0,21	0,21
1400	ζ [-]	0,30	0,29	0,29	0,28	0,27	0,26	0,24	0,23	0,22	0,22	0,21	0,21	0,21	0,21	0,21	0,21	0,20
1600	ζ [-]	0,29	0,30	0,30	0,28	0,30	0,30	0,20	0,20	0,21	0,20	0,20	0,20	0,20	0,20	0,20	0,20	0,20

Free air passage (m^2)

Hn\Wn [mm]		200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
200	Sn [m^2]	0,0300	0,0375	0,0450	0,0525	0,0600	0,0675	0,0750	0,0825	0,0900	0,0975	0,1050	0,1125	0,1200	0,1275	0,1350	0,1425	0,1500
400	Sn [m^2]	0,0620	0,0775	0,0930	0,1085	0,1240	0,1395	0,1550	0,1705	0,1860	0,2015	0,2170	0,2325	0,2480	0,2635	0,2790	0,2945	0,3100
600	Sn [m^2]	0,0940	0,1175	0,1410	0,1645	0,1880	0,2115	0,2350	0,2585	0,2820	0,3055	0,3290	0,3525	0,3760	0,3995	0,4230	0,4465	0,4700
800	Sn [m^2]	0,1260	0,1575	0,1890	0,2205	0,2520	0,2835	0,3150	0,3465	0,3780	0,4095	0,4410	0,4725	0,5040	0,5355	0,5670	0,5985	0,6300
1000	Sn [m^2]	0,1580	0,1975	0,2370	0,2765	0,3160	0,3555	0,3950	0,4345	0,4740	0,5135	0,5530	0,5925	0,6320	0,6715	0,7110	0,7505	0,7900
1200	Sn [m^2]	0,1900	0,2375	0,2850	0,3325	0,3800	0,4275	0,4750	0,5225	0,5700	0,6175	0,6650	0,7125	0,7600	0,8075	0,8550	0,9025	0,9500
1400	Sn [m^2]	0,2220	0,2775	0,3330	0,3885	0,4440	0,4995	0,5550	0,6105	0,6660	0,7215	0,7770	0,8325	0,8880	0,9435	0,9990	1,0545	1,1100
1600	Sn [m^2]	0,2540	0,3175	0,3810	0,4445	0,5080	0,5715	0,6350	0,6985	0,7620	0,8255	0,8890	0,9525	1,0160	1,0795	1,1430	1,2065	1,2700

Sample order

MARKAGE MB 350 200 BEN24 PG30 PG30 BP FM 1S

1 2 3 4 5 6 7

1. product
2. width
3. height
4. servomotor type
5. connection flange on the side of the access hatch
6. connection flange on the opposite side of the access hatch
7. option

Approvals and certificates

All our products are submitted to a number of tests by official test institutes. Reports of these tests form the basis for the approvals of the products.

CE
1812

VKF-AEAI_31587_31586

Efectis_1812-CPR-1821

If the product is manipulated in any other way than described in this manual, Rf-Technologies will decline any responsibility and the guarantee will expire!

AMS/Rf-t Partnership

AMS AIR MOVEMENT SUPPLIES /

Rf-t Rf-Technologies

AMS Air Movement Supplies has teamed up with **Rf-Technologies**, one of the largest manufacturers in Europe, to promote their extensive range of CE marked fire and smoke rated dampers.

The company employs 170 people in its two sites in Belgium (headquarters) and Slovakia. **Rf-Technologies** solutions are designed and approved for all types of walls: vertical and horizontal, in concrete or lightweight materials. They are compliant with the most stringent local and European standards. In it's pioneering role in the field of compliance with international standards, **Rf-Technologies** has been testing it's products according to the European test criteria since 2004.

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For any queries, please contact us at s**ales@airmovementsupplies.ie**.

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