

AVANTAGE

Smoke evacuation shutter.

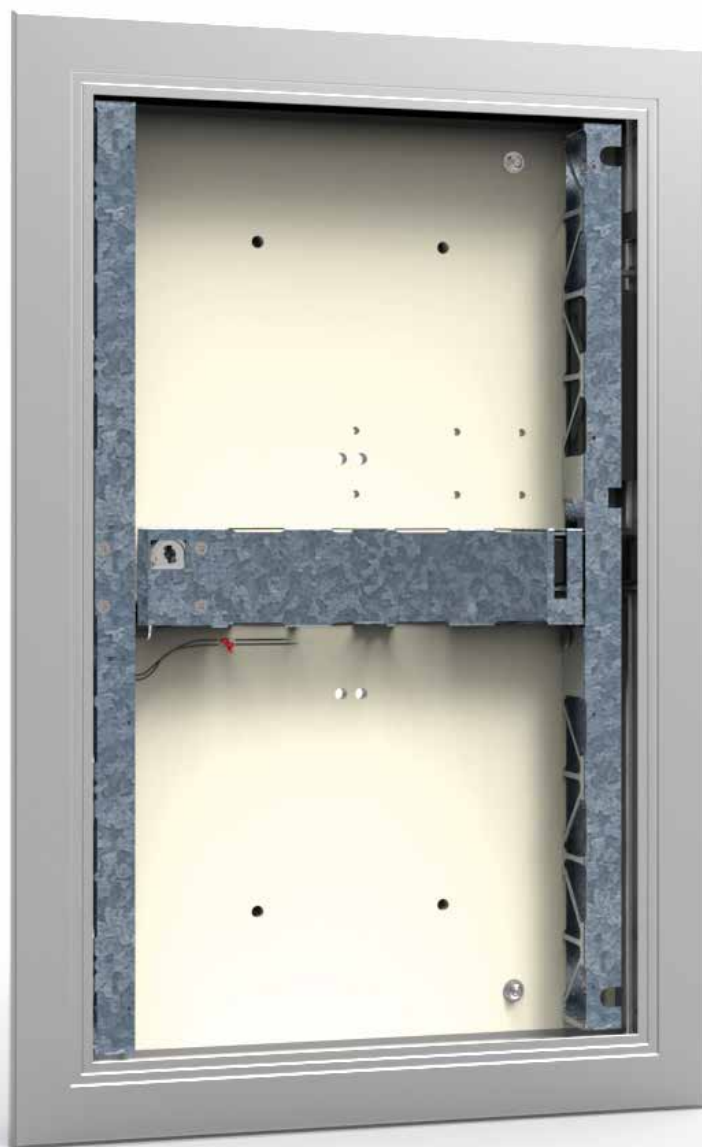





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Explanation of the abbreviations and pictograms

Wn = nominal width	ved = vertical duct	OP = option (delivered with the product)
Hn = nominal height	hod = horizontal duct	KIT = kit (delivered separately for repair or upgrade)
Sn = free air passage	V = volt	PG = connection flange to the duct
E = integrity	W = watt	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)
I = thermal insulation	V AC = Volt alternating current	Cal-Sil = calcium silicate
S = smoke leakage	V DC = Volt direct current	ζ [-] = pressure loss coefficient
60/120 = fire resistance time	E.ALIM = power supply magnet	Q = air flow
Pa = pascal	E.TELE = power supply motor	ΔP = static pressure drop
o -> i = meets the criteria from the outside (o) to the inside (i)	Auto = automatic	v = air speed in the duct
i <-> o = fire side not important	Tele = remote controlled	Lwa = A-weighted sound power level
AA = automatic activation	Pnom = nominal capacity	
multi = multiple	Pmax = maximum capacity	
1500 = pressure level 3 (1500Pa)	DAS MOD = modular product	

	optimal free air passage and minimal pressure loss		superior air tightness (tested at 1500 Pa)
	intermediate dimensions on request		

DECLARATION OF PERFORMANCE

CE_DoP_Rf-t_V13_EN F-10/2015

1. Unique identification code of the product-type:	Smoke evacuation shutter
2. Identification of the construction product:	AVANTAGE
3. Intended use(s) of the construction product:	Smoke evacuation shutter to be used in smoke control systems, in multi-compartment applications at fire temperatures, or in single-compartment applications.
4. Name and contact address of the manufacturer:	Rf-Technologies NV, Lange Anbachstraat 40, B-9860 Oosterzele
5. System of assessment and verification of constancy of performance of the construction product:	System 1
6. In case of the declaration of performance concerning a construction product covered by a harmonised standard:	Notified factory production control certification body Effects with identification number 1812 performed the determination of the product type on the basis of type testing (including sampling), the initial inspection of the manufacturing plant and of factory production control and continuous surveillance, assessment and evaluation of factory production control under system 1 and issued the certificate of constancy of performance 1812_CPR_1042
7. Declared performance according to EN 12101-8:2011	(fire resistance according to EN 1366-10, classification according to EN 13501-4)

Essential characteristics		Wall	Wall type	Installation	Performance Classification
Range	Product Avantage 60	Promatect L500 ≥ 30mm	Shaft	1	EI 60 (V _{ed} , i ↔ o) S 1500 AA multi
300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm		Geoflam ≥ 30mm		1	EI 60 (V _{ed} , i ↔ o) S 1500 AA multi
		Tectivac ≥ 35mm		1	EI 60 (V _{ed} , i ↔ o) S 1500 AA multi
		Glasroc FV500 ≥ 35mm		1	EI 60 (V _{ed} , i ↔ o) S 1500 AA multi
		Promatect L500 ≥ 50mm		1	EI 120 (V _{ed} , i ↔ o) S 1500 AA multi
		Geoflam ≥ 45mm		1	EI 120 (V _{ed} , i ↔ o) S 1500 AA multi
		Geoflam Light ≥ 35mm		1	EI 120 (V _{ed} , i ↔ o) S 1500 AA multi
		Exthamat ≥ 45mm		1	EI 120 (V _{ed} , i ↔ o) S 1500 AA multi
		Tectivac ≥ 50mm		1	EI 120 (V _{ed} , i ↔ o) S 1500 AA multi
		Glasroc FV500 ≥ 50mm		1	EI 120 (V _{ed} , i ↔ o) S 1500 AA multi

1 Type of installation: shaft-mounted 0/180°



Nominal activation conditions/sensitivity:	Pass - automatic activation
Response delay (response time): closure time	Pass - automatic activation
Operational reliability: cycling	300 cycles (no load)
Durability of response delay:	Pass
Durability of operational reliability:	Pass
Approved accessories	KAP mounting frame; Resetting by motor
High operational temperature (HOT 400/30):	VAME (Range 350 x 385 mm ≤ Avantage ME 1V ≤ 700 x 1075mm); with grill
8. The performance of the product identified in points 1 and 2 is in conformity with the declared performance in point 7. This declaration of performance is issued under the sole responsibility of the manufacturer identified in point 4.	NPD (no performance determined)

Signed for and on behalf of the manufacturer by:

Barbara Willems, Technical Manager



Oosterzele, 10/2015



Product presentation AVANTAGE

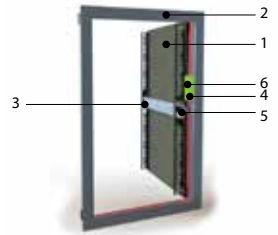
The smoke evacuation shutter Avantage is noted for its superior airtight properties. The shutter is available as single (1V) and double (2V) shutter units; it is also available in a motorised version (Avantage ME) that allows the remote resetting of the blade. Developed in accordance with the European product standard EN 12101-8 and tested with front grill according to the EN 1366-10 standard, Avantage offers a fire-resistance of 60 or 120 minutes (see the classification overview), and ensures minimum pressure loss.

Smoke evacuation 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.

- ✓ superior air tightness (tested at 1500 Pa)
- ✓ optimal free air passage and minimal pressure loss
- ✓ easy to test through remote resetting (ME variant, 1V)
- ✓ 2V model with simplified manual reset (closing)
- tested according to EN 1366-10
- compliant with EN 12101-8
- approved for installation in calcium-silicate, 'Staff', Tecniver and Glasroc shafts
- maintenance-free
- for indoor use
- intermediate dimensions on request
- reversible (hinges left or right)

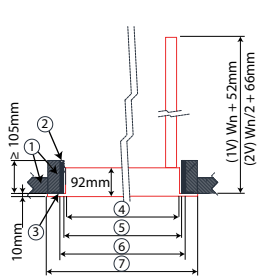
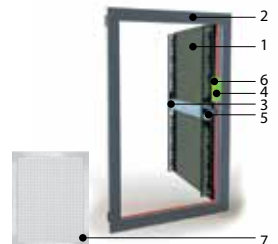


1. 1 shutter (1V)/ 2 shutters (2V)
2. aluminium frame
3. lock + key
4. connection compartement
5. blocking mechanism + automatic locking at 90°
6. product identification



Variant AVANTAGE 1V60 - 1V120

- 1 shutter
 - fire resistance till 60 minutes
1. 1 shutter (1V)/ 2 shutters (2V)
 2. aluminium frame
 3. lock + key
 4. connection compartement
 5. blocking mechanism + automatic locking at 90°
 6. product identification
 7. front protection grill (compulsory)

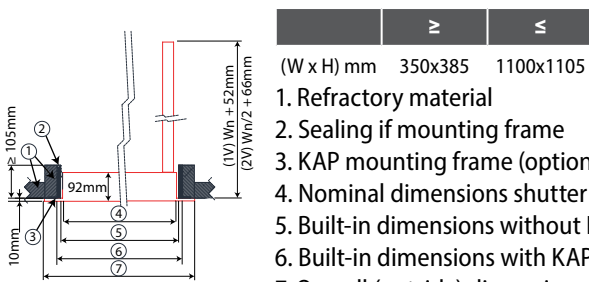
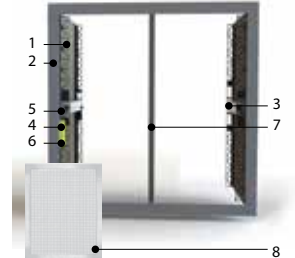


	1V	2V
(W x H) mm	300x385	700x1075

1. Refractory material
2. Sealing if mounting frame
3. KAP mounting frame (optional)
4. Nominal dimensions shutter Wn x Hn
5. Built-in dimensions without KAP mounting frame (Wn+10) x (Hn+10)mm
6. Built-in dimensions with KAP mounting frame (Wn+20) x (Hn+20)mm
7. Overall (outside) dimensions of the shutter (Wn+54) x (Hn+54)mm

Variant AVANTAGE 2V60 - 2V120

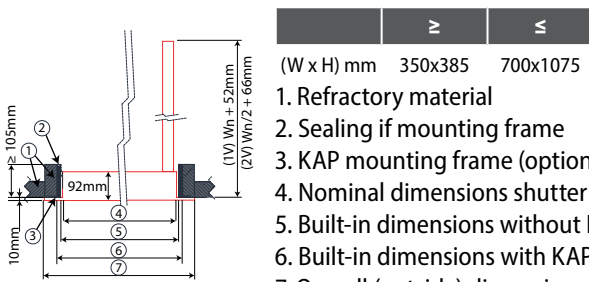
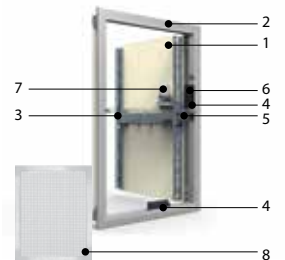
- 2 shutters
 - fire resistance till 60 minutes
1. 1 shutter (1V)/ 2 shutters (2V)
 2. aluminium frame
 3. lock + key
 4. connection compartement
 5. blocking mechanism + automatic locking at 90°
 6. product identification
 7. central support (2V)
 8. front protection grill (compulsory)



1. Refractory material
2. Sealing if mounting frame
3. KAP mounting frame (optional)
4. Nominal dimensions shutter $W_n \times H_n$
5. Built-in dimensions without KAP mounting frame $(W_n+10) \times (H_n+10)$ mm
6. Built-in dimensions with KAP mounting frame $(W_n+20) \times (H_n+20)$ mm
7. Overall (outside) dimensions of the shutter $(W_n+54) \times (H_n+54)$ mm

Variant AVANTAGE 1V60 ME - 1V120 ME

- with rearmation motor
 - 1 shutter
 - fire resistance till 60 minutes
1. 1 shutter (1V)
 2. aluminium frame
 3. lock + key
 4. connection compartement
 5. blocking mechanism + automatic locking at 90°
 6. product identification
 7. resetting motor (ME)
 8. front protection grill (compulsory)



1. Refractory material
2. Sealing if mounting frame
3. KAP mounting frame (optional)
4. Nominal dimensions shutter $W_n \times H_n$
5. Built-in dimensions without KAP mounting frame $(W_n+10) \times (H_n+10)$ mm
6. Built-in dimensions with KAP mounting frame $(W_n+20) \times (H_n+20)$ mm
7. Overall (outside) dimensions of the shutter $(W_n+54) \times (H_n+54)$ mm

Evolution - kits



KITS VD24-VA

Natural magnet 24 V DC



KITS VD48-VA

Natural magnet 48 V DC



KITS VM24-VA

Electromagnet 24 V DC (not applicable for ME model)



KITS VM48-VA

Electromagnet 48 V DC (not applicable for ME model)



KITS FDC-VA

End and begin of range switch



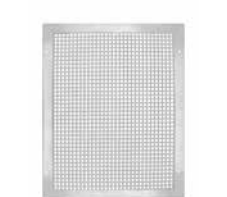
KITS ME-AVANM

Resetting motor ME 24V/48V



KAP

Mounting frame (delivered separately)



GFV-PB

Technical front protection grill (aluminium frame and perforated plate, fastened with screws 4.8x19mm), free air passage of 69,4%

Options - at the time of order



GFV-PB

Technical front protection grill (aluminium frame and perforated plate, fastened with screws 4.8x19mm), free air passage of 69,4%

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:

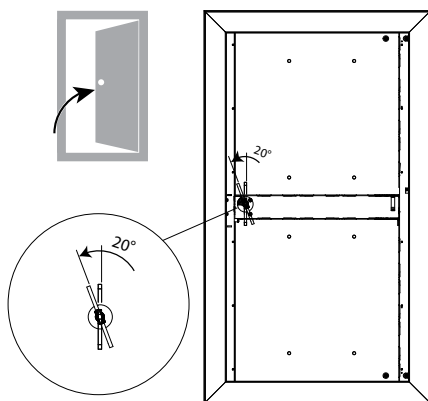
- to unload in a dry area
- not to flip or roll the product to move it
- not to use the damper as a scaffold, working table, etc.
- not to store smaller dampers inside larger ones

Installation

General points

- The installation must comply with the classification report and the installation manual delivered with the product.
- The installation of the shaft must comply with the classification report delivered by the manufacturer.
- Axis orientation: see the declaration of performance.
- Avoid obstruction of adjoining ducts.
- Verify if the blade can move freely.
- Rf-t smoke dampers may be applied to 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.
 - ⚠ Caution: bear in mind the blade's clearance inside the smoke evacuation duct.

Operation: opening



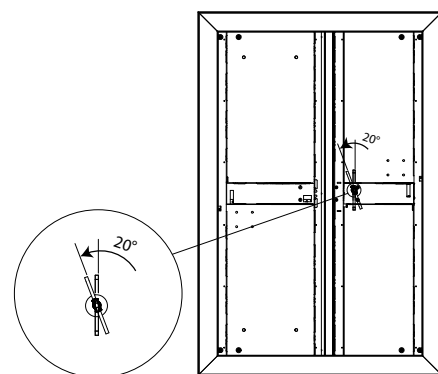
Unlocking 1V

Manual:

Insert the key in the lock. Turn the key 20° anti-clockwise: the shutter opens. Remove the key from the lock.

Remote:

Remote controlled by an electrical impulse or by interrupting the magnet's power supply (option VD/VM).



Unlocking 2V

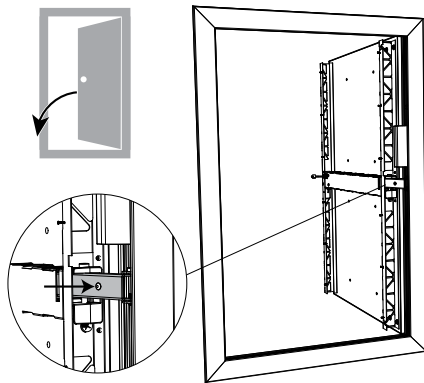
Manual:

Insert the key in the lock. Turn the key 20° anti-clockwise: the shutter opens. Remove the key from the lock.

Remote:

Remote controlled by an electrical impulse or by interrupting the magnet's power supply (option VD/VM).

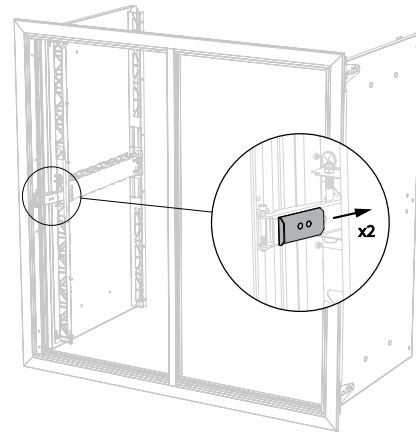
Operation: closing



Resetting 1V

Manual:

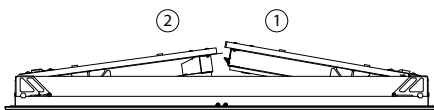
Turn the key 20° clock wise and withdraw it. Push the blocking mechanism. Close the shutter by pulling the metal profile.



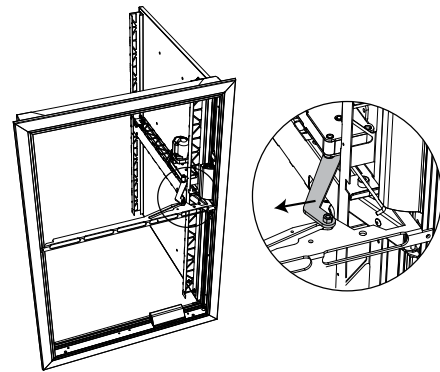
Resetting 2V

Manual:

Press on both blocking devices to deactivate them.



Turn the key 20° clock wise and withdraw it. Close both shutters together by pulling on the metal profiles. Make sure that the shutters hook in each other as illustrated.



Resetting ME

Manual:

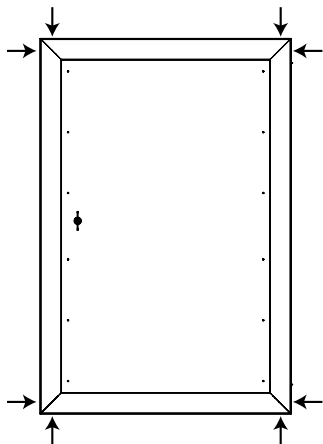
Turn the key 20° clock wise and withdraw it. Push the blocking mechanism. Close the shutter by pulling the metal profile.

Remote:

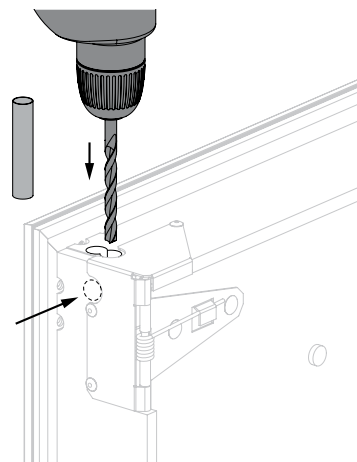
Supply the actuator for at least 90 sec. (respect the prescribed voltage 24 or 48 Vdc).

The rearmation stops automatically when the shutter is closed. Switch off the power supply for at least 90 sec. in between each resetting cycle.

Electrical connection

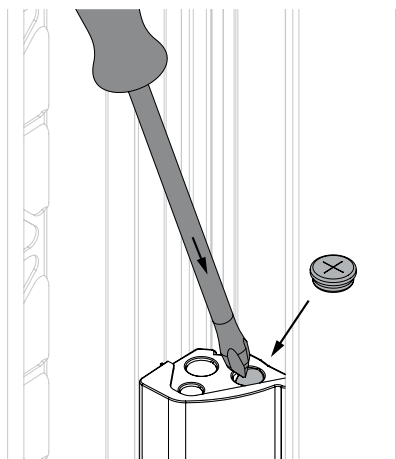


The electrical supply can be done at the 4 corners of the shutter.

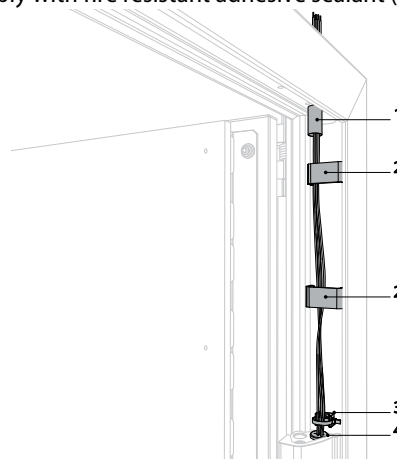


Drill a hole in the refractory material at the chosen corner(s). The galvanised part at the inside of the shutter is already indented.

⚠ Caution: after passing and fixing the cables, it is necessary to seal the drilled hole in the refractory around the electrical supply with fire resistant adhesive sealant (BCM f.e.).



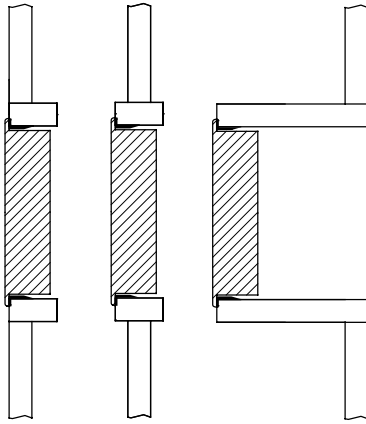
Pierce an opening in the connection box. Affix the grommet delivered with the product.



Lead the cables through the opening. Use the protective sleeve (1), the fixation clips (2) and the plastic cable clamp (3) to attach the cables to the frame. Lead the cables to the connection box through the grommet (4) and connect according to the electrical connection diagram.

Comply with the installation rules according to article 6.1 of NF S 61-932.

Position in the shaft

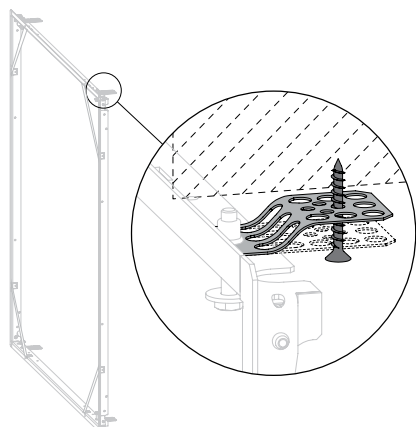


The shutter is affixed to the smoke evacuation shaft through a sleeve. That sleeve can be indifferently installed: in the shaft, in the axis of the shaft or outside the shaft (or shaft extension).

Installation in vertical shaft PROMATECT L500 with KAP mounting frame

The product was tested and approved in:

Product	Range	Wall type	Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Promatect L500 ≥ 30mm EI 60 (v _{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Promatect L500 ≥ 50mm EI 120 (v _{ed} i ↔ o) S 1500 AA multi



Make an opening with dimensions $(W+A) \times (H+A)$ mm. $A = 2 \times$ thickness sleeve $(e) + 20$ mm.

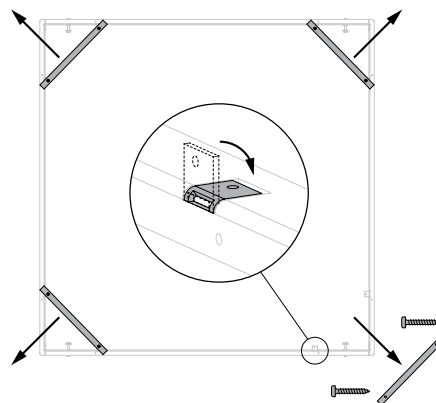
Coat the edges of the opening with adhesive plaster type Promacol S.

Fit a sleeve of the same type and thickness of the duct (thickness e) of 105 mm deep in the opening.

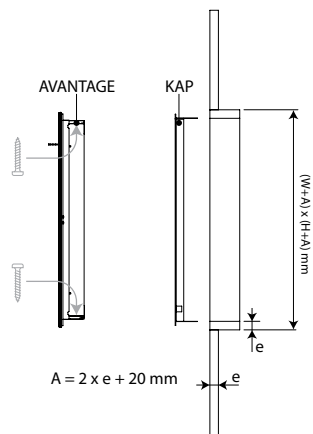
Staple the sleeve itself and to the shaft wall.

Screw the KAP mounting frame with chipboard screw $(6 \times e)$ mm to the sleeve. 2 sealing lugs are provided on each fitting, which must be opened out when sealing. Sea the mounting frame with Promacol S taking care not to misshape it. The finished opening must be the same size as the mounting frame $(W+10) \times (H+10)$ mm.

⚠ Caution: make sure that the screws don't exceed the sleeve's thickness!



Unscrew the 4 cross beams of the KAP mounting frame and fold the 8 plates in the frame.



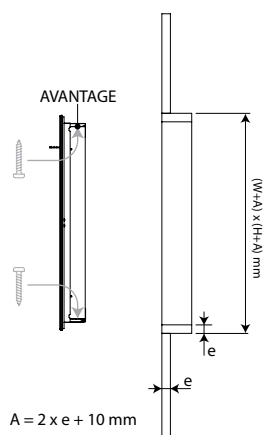
Position and open the shutter in the mounting frame. If VM magnet: remove the key from the lock to open the shutter. Fix the shutter to the frame using 4 bolts M6x30 mm, supplied with the frame. To ensure a proper fixation, first attach the bolts in the upper side of the shutter's frame, then in the lower part.

Connect the mechanism according to the wiring diagram. Check the mobility of the shutter.

Installation in vertical shaft PROMATECT L500 (without a mounting frame)

The product was tested and approved in:

Product	Range	Wall type	Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Promatect L500 ≥ 30mm El 60 (v _{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Promatect L500 ≥ 50mm El 120 (v _{ed} i ↔ o) S 1500 AA multi



Make an opening with dimensions $(W+A) \times (H+A)$ mm. $A = 2 \times$ thickness sleeve $(e) + 10$ mm.

Coat the edges of the opening with adhesive plaster type Promacol S.

Fit a sleeve of the same type and thickness of the duct (thickness e) of 105 mm deep in the opening.

Staple the sleeve itself and to the shaft wall.

Position and open the shutter in the opening. If VM magnet: remove the key from the lock to open the shutter.

Fix the shutter in the opening using 4 screws D6 x 40 mm.

⚠ Caution: make sure that the screws don't exceed the sleeve's thickness!

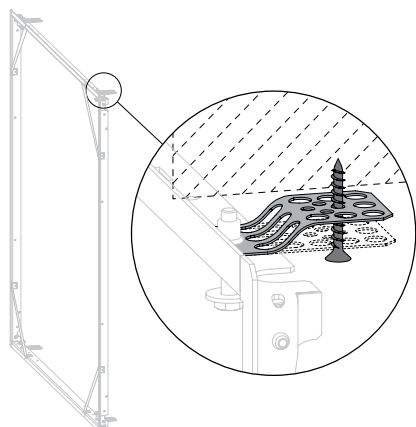
Connect the mechanism according to the wiring diagram.

Check the mobility of the shutter.

Installation in vertical shaft GEOFLAM (LIGHT) with KAP mounting frame

The product was tested and approved in:

Product	Range	Wall type	Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Geoflam ≥ 30mm El 60 (v _{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Geoflam ≥ 45mm El 120 (v _{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Geoflam Light ≥ 35mm El 120 (v _{ed} i ↔ o) S 1500 AA multi



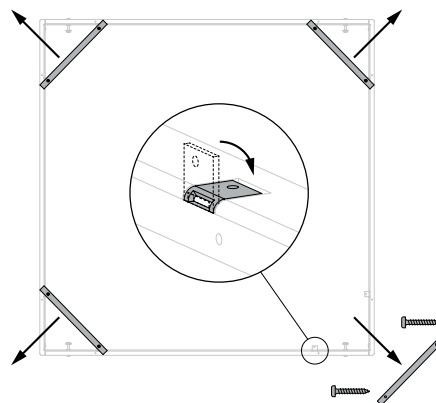
Make an opening with dimensions $(W+A) \times (H+A)$ mm. $A = 2 \times$ thickness sleeve $(e) + 20$ mm.

Coat the edges of the opening with adhesive plaster type PLACOL.

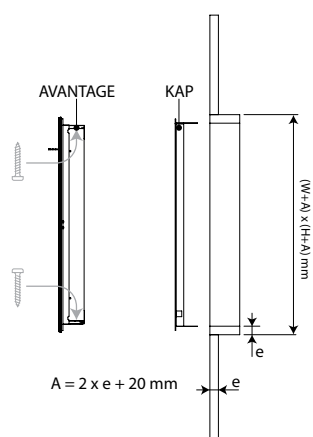
Fit a sleeve of the same type and thickness of the duct (thickness e) of 105 mm deep in the opening.

Seal the joints between uprights and cross pieces and between the lining and the wall with vegetable fibre caulking and plaster.

2 sealing lugs are provided on each fitting, which must be opened out when sealing. Caulk the KAP mounting frame to the duct with vegetable fibre and taking care not to misshape it. The finished opening must be the same size as the mounting frame $(W+10) \times (H+10)$ mm.



Unscrew the 4 cross beams of the KAP mounting frame and fold the 8 plates in the frame.



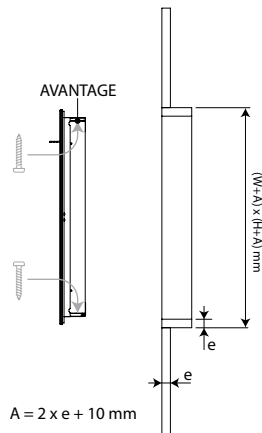
Position and open the shutter in the mounting frame. If VM magnet: remove the key from the lock to open the shutter. Fix the shutter to the frame using 4 bolts M6x30 mm, supplied with the frame. To ensure a proper fixation, first attach the bolts in the upper side of the shutter's frame, then in the lower part.

Connect the mechanism according to the wiring diagram. Check the mobility of the shutter.

Installation in vertical shaft GEOFLAM (LIGHT)(without a mounting frame)

The product was tested and approved in:

Product	Range	Wall type		Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Geoflam ≥ 30mm	EI 60 (v _{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Geoflam ≥ 45mm	EI 120 (v _{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Geoflam Light ≥ 35mm	EI 120 (v _{ed} i ↔ o) S 1500 AA multi



Make an opening with dimensions $(W+A) \times (H+A)$ mm. $A = 2 \times$ thickness sleeve $(e) + 10$ mm.

Coat the edges of the opening with adhesive plaster type PLACOL.

Fit a sleeve of the same type and thickness of the duct (thickness e) of 105 mm deep in the opening.

Seal the joints between uprights and cross pieces and between the lining and the wall with vegetable fibre caulking and plaster.

Position and open the shutter in the opening. If VM magnet: remove the key from the lock to open the shutter.

Fix the shutter in the opening using 4 screws D6 x 40 mm.

⚠ Caution: make sure that the screws don't exceed the sleeve's thickness!

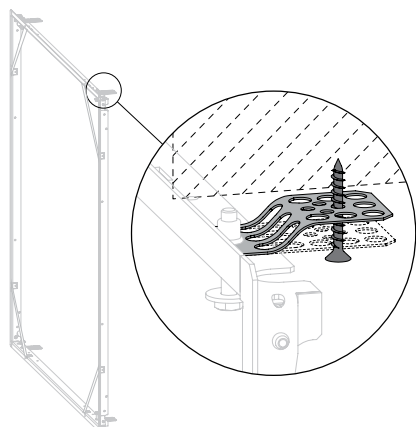
Connect the mechanism according to the wiring diagram.

Check the mobility of the shutter.

Installation in vertical shaft TECNIVER with KAP mounting frame

The product was tested and approved in:

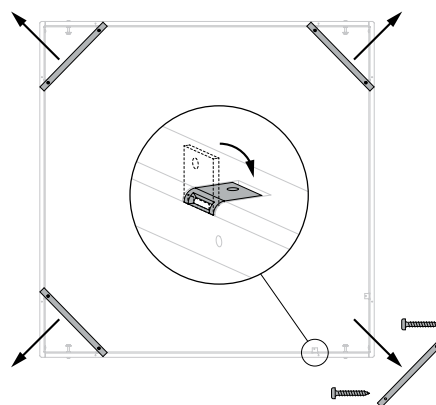
Product	Range	Wall type		Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Tecniver ≥ 35mm	EI 60 (v _{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Tecniver ≥ 50mm	EI 120 (v _{ed} i ↔ o) S 1500 AA multi



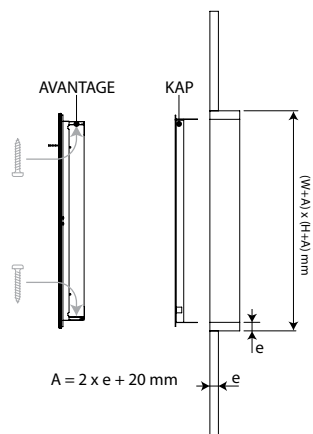
Make an opening with dimensions $(W+A) \times (H+A)$ mm. $A = 2 \times$ thickness sleeve $(e) + 20$ mm.
 Put glue CF GLUE on the edges of the opening and the uprights and cross pieces.
 Fit a sleeve of the same type and thickness of the duct (thickness e) of 105 mm deep in the opening.
 Put glue type CF GLUE on the uprights and cross pieces and between the lining and the wall. Screw the sleeve using chip-board screws $\varnothing 5 \times 70$ mm at 150 mm intervals.

⚠ Caution: make sure that the screws don't exceed the sleeve's thickness!

2 sealing lugs are provided on each fitting, which must be opened out when sealing. First coat the opening with glue CF GLUE. Glue the KAP mounting frame to the lining taking care not to misshape it. The finished opening must be the same size as the mounting frame $(W+10) \times (H+10)$ mm.



Unscrew the 4 cross beams of the KAP mounting frame and fold the 8 plates in the frame.

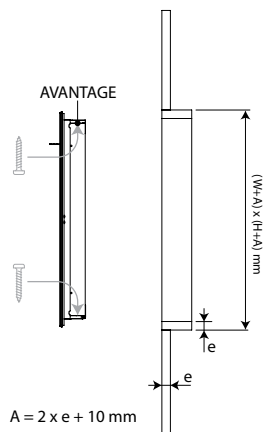


Position and open the shutter in the mounting frame. If VM magnet: remove the key from the lock to open the shutter. Fix the shutter to the frame using 4 bolts M6x30 mm, supplied with the frame. To ensure a proper fixation, first attach the bolts in the upper side of the shutter's frame, then in the lower part.
 Connect the mechanism according to the wiring diagram.
 Check the mobility of the shutter.

Installation in vertical shaft TECNIVER (without a mounting frame)

The product was tested and approved in:

Product	Range	Wall type		Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Tecniver ≥ 35mm	EI 60 (v _{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Tecniver ≥ 50mm	EI 120 (v _{ed} i ↔ o) S 1500 AA multi



Make an opening with dimensions $(W+A) \times (H+A)$ mm. $A = 2 \times$ thickness sleeve $(e) + 10$ mm.

Put glue CF GLUE on the edges of the opening and the uprights and cross pieces.

Fit a sleeve of the same type and thickness of the duct (thickness e) of 105 mm deep in the opening.

Put glue type CF GLUE on the uprights and cross pieces and between the lining and the wall. Screw the sleeve using chip-board screws $\varnothing 5 \times 70$ mm at 150 mm intervals.

⚠ Caution: make sure that the screws don't exceed the sleeve's thickness!

Position and open the shutter in the opening. If VM magnet: remove the key from the lock to open the shutter.

Fix the shutter in the opening using 4 screws $D6 \times 40$ mm.

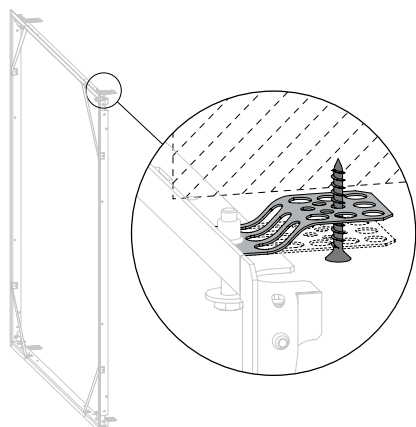
Connect the mechanism according to the wiring diagram.

Check the mobility of the shutter.

Installation in vertical shaft GLASROC F V500 with KAP mounting frame

The product was tested and approved in:

Product	Range	Wall type		Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Glasroc F V500 ≥ 35mm	EI 60 (v _{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Glasroc F V500 ≥ 50mm	EI 120 (v _{ed} i ↔ o) S 1500 AA multi



Make an opening with dimensions $(W+A) \times (H+A)$ mm. $A = 2 \times$ thickness sleeve $(e) + 20$ mm.

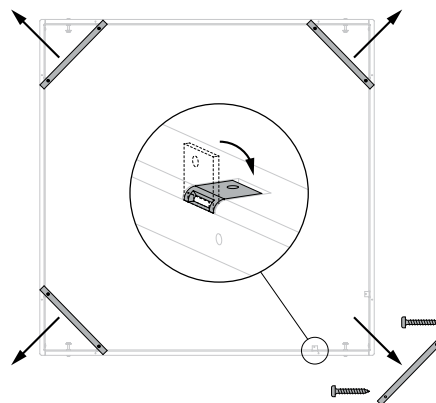
Put glue GLASROC F V500 on the edges of the opening and the uprights and cross pieces.

Fit a sleeve of the same type and thickness of the duct (thickness e) of 105 mm deep in the opening.

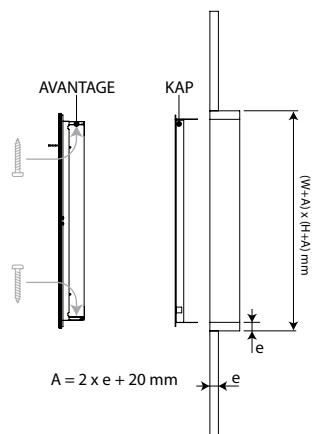
Put glue type GLASROC F V500 on the uprights and cross pieces and between the lining and the wall. Screw the sleeve using chipboard screws $\varnothing 5 \times 70$ mm at 150 mm intervals.

⚠ Caution: make sure that the screws don't exceed the sleeve's thickness!

2 sealing lugs are provided on each fitting, which must be opened out when sealing. First coat the opening with glue CF GLUE. Glue the KAP mounting frame to the lining taking care not to misshape it. The finished opening must be the same size as the mounting frame $(W+10) \times (H+10)$ mm.



Unscrew the 4 cross beams of the KAP mounting frame and fold the 8 plates in the frame.



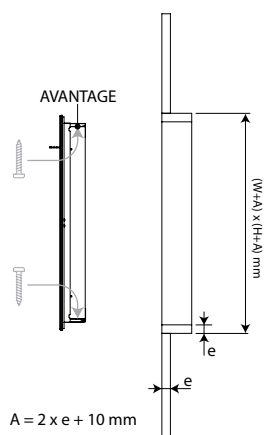
Position and open the shutter in the mounting frame. If VM magnet: remove the key from the lock to open the shutter. Fix the shutter to the frame using 4 bolts M6x30 mm, supplied with the frame. To ensure a proper fixation, first attach the bolts in the upper side of the shutter's frame, then in the lower part.

Connect the mechanism according to the wiring diagram. Check the mobility of the shutter.

Installation in vertical shaft GLASROC F V500 (without a mounting frame)

The product was tested and approved in:

Product	Range	Wall type		Classification
Avantage 60	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Promatect L500 ≥ 30mm	EI 60 (v _{ed} i ↔ o) S 1500 AA multi
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Promatect L500 ≥ 50mm	EI 120 (v _{ed} i ↔ o) S 1500 AA multi



Make an opening with dimensions $(W+A) \times (H+A)$ mm. $A = 2 \times$ thickness sleeve $(e) + 10$ mm.

Put glue GLASROC F V500 on the edges of the opening and the uprights and cross pieces.

Fit a sleeve of the same type and thickness of the duct (thickness e) of 105 mm deep in the opening.

Put glue type GLASROC F V500 on the uprights and cross pieces and between the lining and the wall. Screw the sleeve using chipboard screws $\varnothing 5 \times 70$ mm at 150 mm intervals.

⚠ Caution: make sure that the screws don't exceed the sleeve's thickness!

Position and open the shutter in the opening. If VM magnet: remove the key from the lock to open the shutter.

Fix the shutter in the opening using 4 screws D6 x 40 mm.

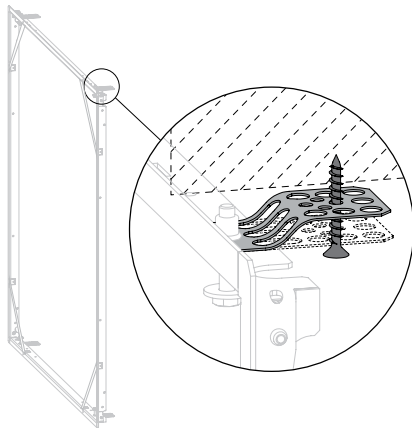
Connect the mechanism according to the wiring diagram.

Check the mobility of the shutter.

Installation in vertical shaft EXTHAMAT with KAP mounting frame

The product was tested and approved in:

Product	Range	Wall type		Classification
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Exthamat ≥ 45mm	EI 120 (v _{ed} i ↔ o) S 1500 AA multi



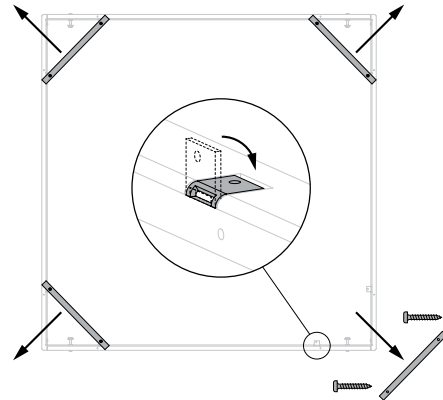
Make an opening with dimensions $(W+A) \times (H+A)$ mm. $A = 2 \times$ thickness sleeve $(e) + 20$ mm.

Coat the edges of the opening with adhesive plaster.

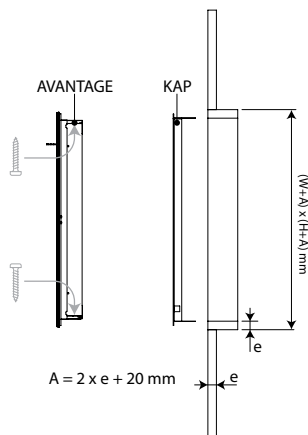
Fit a sleeve of the same type and thickness of the duct (thickness e) of 105 mm deep in the opening.

Seal the joints between uprights and cross pieces and between the lining and the wall with vegetable fibre caulking and plaster.

2 sealing lugs are provided on each fitting, which must be opened out when sealing. Caulk the KAP mounting frame to the duct with vegetable fibre and taking care not to misshape it. The finished opening must be the same size as the mounting frame $(W+10) \times (H+10)$ mm.



Unscrew the 4 cross beams of the KAP mounting frame and fold the 8 plates in the frame.



Position and open the shutter in the mounting frame. If VM magnet: remove the key from the lock to open the shutter. Fix the shutter to the frame using 4 bolts M6x30 mm, supplied with the frame. To ensure a proper fixation, first attach the bolts in the upper side of the shutter's frame, then in the lower part.

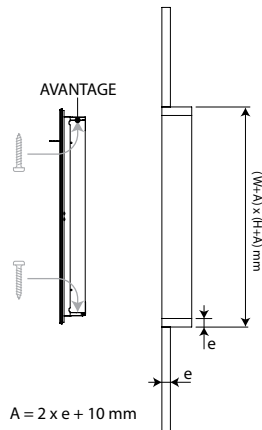
Connect the mechanism according to the wiring diagram.

Check the mobility of the shutter.

Installation in vertical shaft EXTHAMAT (without a mounting frame)

The product was tested and approved in:

Product	Range	Wall type	Classification
Avantage 120	300x385 mm ≤ Avantage 1V ≤ 700x1075 mm; 350x385 mm ≤ Avantage 2V ≤ 1100x1105 mm; 350x385 mm ≤ Avantage 1V ME ≤ 700x1075 mm	Shaft	Exthamat ≥ 45mm EI 120 (v _{ed} i ↔ o) S 1500 AA multi



Make an opening with dimensions $(W+A) \times (H+A)$ mm. $A = 2 \times$ thickness sleeve $(e) + 10$ mm.

Coat the edges of the opening with adhesive plaster.

Fit a sleeve of the same type and thickness of the duct (thickness e) of 105 mm deep in the opening.

Seal the joints between uprights and cross pieces and between the lining and the wall with vegetable fibre caulking and plaster.

Position and open the shutter in the opening. If VM magnet: remove the key from the lock to open the shutter.

Fix the shutter in the opening using 4 screws D6 x 40 mm.

⚠ Caution: make sure that the screws don't exceed the sleeve's thickness!

Connect the mechanism according to the wiring diagram.

Check the mobility of the shutter.

Maintenance

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

Operation and mechanisms

Operation: general points

- See under 'Installation' (manual opening and closing).
- ▲ Caution : please note dampers must be fully open before starting supply and/or extract fans.



VA MEC Remote controlled unlocking by a magnet.

Remote controlled unlocking by an electric impulse (VD) or by interruption (VM) of the magnet's power supply.



Options - at the time of order

VD24	Natural magnet 24 V DC
VD48	Natural magnet 48 V DC
VM24	Electromagnet 24 V DC (not applicable for ME and H model)
VM48	Electromagnet 48 V DC (not applicable for ME and H model)
FDCU	Unipolar beginning and end of range switch (incl. exc. for H model)
FDCB	Bipolar beginning and end of range switch

Unlocking

- **manual unlocking:** with the key
- **remote unlocking:** remote controlled by electrical impulse (VD) or interruption (VM) of current to the magnet.

Resetting

- **manual resetting:** with the key



VA ME MEC Remote controlled unlocking by a magnet and motorised resetting.

Remote controlled unlocking by an electric impulse (VD) to the magnet's power supply. Motorised resetting (ME motor).



Options - at the time of order

VD24	Natural magnet 24 V DC
VD48	Natural magnet 48 V DC
FDCU	Unipolar beginning and end of range switch (incl. exc. for H model)
FDCB	Bipolar beginning and end of range switch
ME	Resetting motor ME 24V/48V

Unlocking

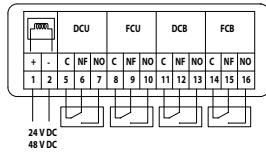
- **manual unlocking:** with the key
- **remote unlocking:** remote controlled by electrical impulse (VD) of current to the magnet.

Resetting

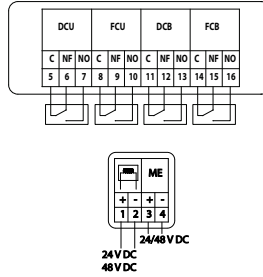
- **manual resetting:** with the key
- **motorised resetting:** remote resetting with ME motor

Electrical connection

VA MEC



VA ME MEC



MEC	Nominal voltage motor	Nominal voltage magnet	Power consumption (stand-by)	Power consumption (operating)	standard switches	Protection class
VA MEC	N/A	24/48 V DC	VM: 1,5W / VD: -	VM: - / VD: 3,5W	1mA...6A, DC 5V...AC 250V	IP 42
VA ME MEC	24/48 V DC (automatic conversion)	24/48 V DC	VD: - / ME: -	VD: 3,5W / ME: Pmax 20W (24V)/40W (48V)	1mA...6A, DC 5V...AC 250V	IP 42

Weights

AVANTAGE 1V60 - 1V120

Hn\Wn [mm]		300	350	400	450	500	550	600	650	700
385	kg	5,4	5,8	6,2	6,6	7,0	7,5	8,1	8,7	9,3
415	kg	5,7	6,2	6,7	7,2	7,7	8,2	8,7	9,2	9,7
445	kg	6,0	6,5	7,0	7,5	8,1	8,6	9,1	9,6	10,1
475	kg	6,3	6,8	7,3	7,9	8,4	8,9	9,5	10,0	10,5
505	kg	6,5	7,1	7,6	8,2	8,7	9,3	9,9	10,4	11,0
535	kg	6,8	7,3	7,9	8,5	9,1	9,7	10,2	10,8	11,4
565	kg	7,0	7,6	8,2	8,8	9,4	10,0	10,6	11,2	11,8
595	kg	7,3	7,9	8,5	9,1	9,7	10,3	11,0	11,6	12,2
625	kg	7,8	8,3	8,9	9,4	10,0	10,7	11,3	12,0	12,6
685	kg	8,2	8,8	9,4	10,0	10,6	11,3	12,0	12,7	13,4
655	kg	8,0	8,6	9,1	9,7	10,3	11,0	11,7	12,3	13,0
715	kg	8,5	9,1	9,7	10,2	10,9	11,7	12,4	13,1	13,8
745	kg	8,7	9,3	9,9	10,5	11,2	12,0	12,7	13,5	14,2
775	kg	8,9	9,5	10,2	10,8	11,5	12,3	13,1	13,9	14,6
805	kg	9,1	9,8	10,4	11,1	11,7	12,6	13,4	14,3	15,0
835	kg	9,4	10,0	10,7	11,4	12,0	13,0	13,8	14,6	15,4
865	kg	9,6	10,3	11,0	11,7	12,3	13,3	14,2	15,0	15,9
895	kg	9,8	10,5	11,2	12,0	12,6	13,6	14,5	15,4	16,3
925	kg	10,0	10,8	11,5	12,2	12,9	14,0	14,9	15,8	16,7
955	kg	10,3	11,0	11,8	12,5	13,2	14,3	15,2	16,2	17,1
985	kg	10,5	11,3	12,0	12,8	13,5	14,6	15,6	16,6	17,5
1015	kg	10,7	11,5	12,3	13,1	13,8	14,9	15,9	16,9	17,9
1045	kg	11,0	11,8	12,6	13,3	14,0	15,3	16,3	17,3	18,3
1075	kg	11,2	12,0	12,8	13,6	14,3	15,6	16,6	17,7	18,8

AVANTAGE 2V60 - 2V120

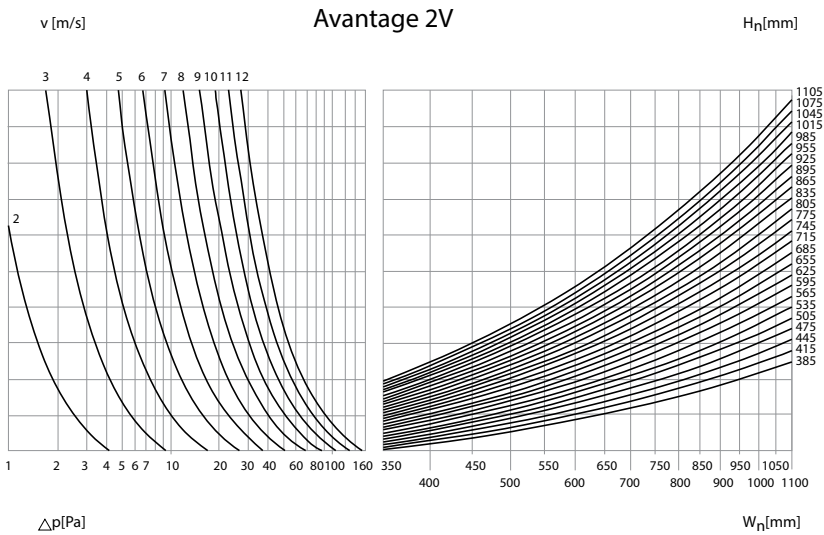
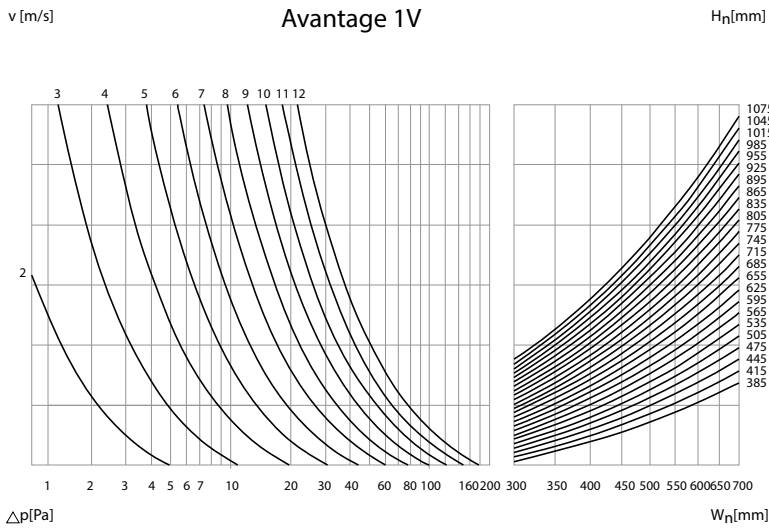
Hn\Wn [mm]		350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
385	kg	6,9	7,3	7,8	8,2	8,6	9,0	9,4	9,8	10,3	10,7	11,1	11,5	11,9	12,6	13,3	14,0
415	kg	6,9	7,8	8,3	8,8	9,3	9,7	10,2	10,7	11,2	11,7	12,2	12,7	13,2	13,7	14,2	14,0
445	kg	6,9	8,2	8,7	9,2	9,7	10,2	10,7	11,2	11,8	12,3	12,8	13,3	13,8	14,3	14,8	14,0
475	kg	6,9	8,6	9,1	9,6	10,2	10,7	11,2	11,7	12,3	12,8	13,3	13,9	14,4	14,9	15,5	14,0
505	kg	6,9	8,9	9,5	10,0	10,6	11,2	11,7	12,3	12,8	13,4	13,9	14,5	15,0	15,6	16,1	14,0
535	kg	8,8	9,3	9,9	10,5	11,0	11,6	12,2	12,8	13,3	13,9	14,5	15,1	15,6	16,2	16,8	17,3
565	kg	8,8	9,7	10,3	10,9	11,5	12,1	12,7	13,2	13,8	14,4	15,0	15,6	16,2	16,8	17,4	17,3
595	kg	8,8	10,1	10,7	11,3	11,9	12,5	13,1	13,7	14,3	14,9	15,5	16,2	16,8	17,4	18,0	17,3
625	kg	8,8	10,5	11,1	11,7	12,3	13,0	13,6	14,2	14,8	15,5	16,1	16,7	17,3	18,0	18,6	17,3
655	kg	8,8	10,8	11,5	12,1	12,8	13,4	14,0	14,7	15,3	16,0	16,6	17,3	17,9	18,5	19,2	17,3
685	kg	10,5	11,2	11,9	12,5	13,2	13,8	14,5	15,2	15,8	16,5	17,2	17,8	18,5	19,1	19,8	20,5
715	kg	11,1	11,7	12,3	13,0	13,6	14,3	15,0	15,6	16,3	17,0	17,7	18,3	19,0	19,7	20,4	20,5
745	kg	11,4	12,1	12,7	13,4	14,0	14,7	15,4	16,1	16,8	17,5	18,2	18,9	19,6	20,3	21,0	20,5
775	kg	11,8	12,4	13,1	13,8	14,4	15,1	15,8	16,6	17,3	18,0	18,7	19,4	20,1	20,9	21,6	20,5
805	kg	12,1	12,8	13,5	14,2	14,8	15,6	16,3	17,0	17,7	18,5	19,2	19,9	20,6	21,4	22,2	20,5
835	kg	12,5	13,2	13,9	14,6	15,3	16,0	16,7	17,5	18,2	19,0	19,7	20,4	21,2	22,0	22,8	20,5

Hn\Wn (mm)		350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
865	kg	12,8	13,5	14,2	15,0	15,7	16,4	17,2	17,9	18,7	19,4	20,2	21,0	21,7	22,6	23,5	20,5
895	kg	13,1	13,9	14,6	15,4	16,1	16,9	17,6	18,4	19,2	19,9	20,7	21,5	22,3	23,2	24,1	20,5
925	kg	13,5	14,2	15,0	15,7	16,5	17,3	18,1	18,9	19,6	20,4	21,2	22,0	22,8	23,7	24,7	25,6
955	kg	13,8	14,6	15,4	16,1	16,9	17,7	18,5	19,3	20,1	20,9	21,7	22,5	23,3	24,3	25,3	25,6
985	kg	14,1	14,9	15,7	16,5	17,3	18,2	19,0	19,8	20,6	21,4	22,2	23,1	23,9	24,9	25,9	25,6
1015	kg	14,5	15,3	16,1	16,9	17,8	18,6	19,4	20,2	21,1	21,9	22,7	23,6	24,4	25,5	26,5	25,6
1045	kg	14,8	15,6	16,5	17,3	18,2	19,0	19,9	20,7	21,6	22,4	23,3	24,1	25,0	26,1	27,2	25,6
1075	kg	15,1	16,0	16,9	17,7	18,6	19,4	20,3	21,2	22,0	22,9	23,8	24,6	25,5	26,6	27,8	25,6
1105	kg	15,5	16,4	17,2	18,1	19,0	19,9	20,8	21,6	22,5	23,4	24,3	25,2	26,0	27,2	28,4	29,6

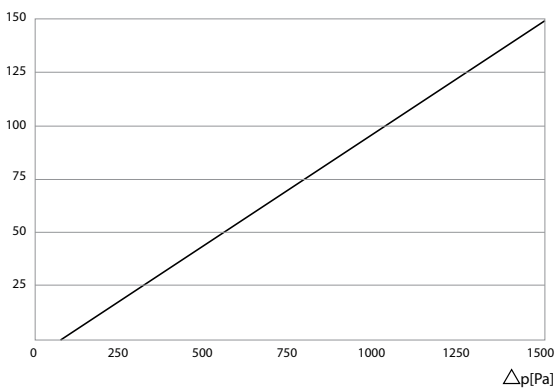
AVANTAGE 1V60 ME - 1V120 ME

Hn\Wn (mm)		350	400	450	500	550	600	650	700
385	kg	7,9	8,3	8,8	9,2	9,7	10,3	11,0	11,6
415	kg	8,3	8,8	9,4	9,9	10,4	11,0	11,5	12,0
445	kg	8,6	9,2	9,7	10,3	10,8	11,4	11,9	12,5
475	kg	8,9	9,5	10,0	10,6	11,2	11,8	12,3	12,9
505	kg	9,2	9,8	10,4	11,0	11,5	12,1	12,7	13,3
535	kg	9,4	10,1	10,7	11,3	11,9	12,5	13,1	13,8
565	kg	9,7	10,3	11,0	11,6	12,3	12,9	13,5	14,2
595	kg	10,0	10,6	11,3	11,9	12,6	13,3	13,9	14,6
625	kg	10,4	11,0	11,6	12,2	12,9	13,6	14,3	15,0
655	kg	10,7	11,3	11,9	12,5	13,3	14,0	14,7	15,4
685	kg	10,9	11,5	12,1	12,8	13,6	14,3	15,1	15,8
715	kg	11,2	11,8	12,4	13,1	13,9	14,7	15,4	16,2
745	kg	11,4	12,1	12,7	13,4	14,2	15,0	15,8	16,6
775	kg	11,6	12,3	13,0	13,7	14,6	15,4	16,2	17,0
805	kg	11,9	12,6	13,3	13,9	14,9	15,7	16,6	17,4
835	kg	12,1	12,8	13,6	14,2	15,2	16,1	17,0	17,8
865	kg	12,4	13,1	13,8	14,5	15,5	16,4	17,3	18,2
895	kg	12,6	13,4	14,1	14,8	15,9	16,8	17,7	18,6
925	kg	12,9	13,6	14,4	15,1	16,2	17,2	18,1	19,0
955	kg	13,1	13,9	14,7	15,4	16,5	17,5	18,5	19,5
985	kg	13,4	14,2	15,0	15,7	16,9	17,9	18,9	19,9
1015	kg	13,6	14,4	15,3	16,0	17,2	18,2	19,3	20,3
1045	kg	13,9	14,7	15,5	16,2	17,5	18,6	19,6	20,7
1075	kg	14,1	15,0	15,8	16,5	17,8	18,9	20,0	21,1

Selection graphs



Leakage [m³/hm²]



$$\Delta p \text{ [Pa]} = \zeta^* v^2 * 0,6$$

AVANTAGE 1V60 & 1V120

Hn\Wn [mm]	300	350	400	450	500	550	600	650	700	
385	ζ [-]	1,893302	1,578735	1,356189	1,190173	1,061423	0,958562	0,874433	0,804304	0,744918
415	ζ [-]	1,73857	1,450757	1,246878	1,094651	0,976513	0,88208	0,804812	0,740379	0,685802
445	ζ [-]	1,607958	1,342578	1,154391	1,013772	0,904581	0,817261	0,745786	0,686167	0,635654
475	ζ [-]	1,496184	1,249895	1,075087	0,944381	0,842836	0,7616	0,695086	0,63959	0,592561
505	ζ [-]	1,39941	1,169571	1,00631	0,884169	0,789239	0,713269	0,65105	0,599127	0,555117
535	ζ [-]	1,31478	1,099265	0,946075	0,831411	0,742261	0,670895	0,612434	0,563637	0,522271
565	ζ [-]	1,240121	1,037196	0,892868	0,784792	0,700735	0,633431	0,578285	0,532248	0,493216
595	ζ [-]	1,173752	0,981982	0,845516	0,743288	0,663757	0,600062	0,547864	0,504281	0,467325
625	ζ [-]	1,114352	0,932537	0,803094	0,706093	0,63061	0,570145	0,520585	0,4792	0,444104
655	ζ [-]	1,060867	0,887992	0,764861	0,672563	0,600723	0,543165	0,495981	0,456576	0,423156
685	ζ [-]	1,012447	0,847646	0,730222	0,642176	0,573632	0,518706	0,473674	0,436061	0,404158
715	ζ [-]	0,968398	0,810927	0,698686	0,614506	0,548959	0,496426	0,453352	0,417371	0,386849
745	ζ [-]	0,928148	0,777361	0,669851	0,5892	0,52639	0,476045	0,434759	0,400269	0,37101
775	ζ [-]	0,89122	0,746555	0,64338	0,565965	0,505665	0,457326	0,417682	0,38456	0,356461
805	ζ [-]	0,857216	0,718179	0,61899	0,544553	0,486564	0,440072	0,40194	0,370079	0,343047
835	ζ [-]	0,825798	0,691953	0,596445	0,524757	0,468902	0,424117	0,387381	0,356685	0,330639
865	ζ [-]	0,796678	0,667638	0,575538	0,506397	0,45252	0,409317	0,373875	0,344259	0,319128
895	ζ [-]	0,769611	0,645032	0,556097	0,489322	0,437283	0,395549	0,361311	0,332698	0,308419
925	ζ [-]	0,744385	0,623958	0,537971	0,4734	0,423073	0,382709	0,349592	0,321916	0,298429
955	ζ [-]	0,720816	0,604265	0,521029	0,458516	0,409789	0,370705	0,338636	0,311834	0,289088
985	ζ [-]	0,698744	0,585818	0,505158	0,444572	0,397342	0,359456	0,328368	0,302385	0,280334
1015	ζ [-]	0,67803	0,568503	0,490258	0,43148	0,385654	0,348893	0,318727	0,293512	0,272112
1045	ζ [-]	0,658551	0,552217	0,476242	0,419163	0,374658	0,338954	0,309654	0,285163	0,264376
1075	ζ [-]	0,640198	0,53687	0,463033	0,407553	0,364294	0,329586	0,301102	0,277292	0,257082

AVANTAGE 2V60 & 2V120

Hn\Wn (mm)	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
385 ζ [-]	1,740906	1,542745	1,392695	1,274442	1,178422	1,098625	1,031071	0,973007	0,922468	0,878006	0,838531	0,803204	0,771137	0,742508
415 ζ [-]	1,637748	1,451972	1,311167	1,200123	1,109909	1,034906	0,971388	0,916779	0,869236	0,8274	0,790251	0,757001	0,727034	0,699862
445 ζ [-]	1,5486	1,373447	1,240589	1,13575	1,05054	0,979671	0,919638	0,868013	0,823058	0,783495	0,748357	0,716904	0,688553	0,662843
475 ζ [-]	1,470647	1,304725	1,178782	1,079352	0,998506	0,931248	0,874259	0,825242	0,782551	0,744974	0,711597	0,681716	0,654781	0,630352
505 ζ [-]	1,401798	1,243983	1,124125	1,029457	0,952459	0,888385	0,834082	0,787368	0,746676	0,710855	0,679033	0,650543	0,624858	0,601563
535 ζ [-]	1,340464	1,189838	1,07538	0,984945	0,911367	0,850126	0,798215	0,753551	0,714641	0,680384	0,649949	0,622698	0,598129	0,575844
565 ζ [-]	1,285413	1,141212	1,031587	0,944942	0,87443	0,815729	0,765963	0,723139	0,685828	0,652975	0,623786	0,597648	0,574081	0,552703
595 ζ [-]	1,235677	1,097258	0,991988	0,90876	0,841014	0,784606	0,736777	0,695615	0,659748	0,628164	0,6001	0,574968	0,552307	0,531751
625 ζ [-]	1,190478	1,057297	0,955975	0,875847	0,810612	0,756285	0,710216	0,670563	0,636009	0,605578	0,578538	0,554321	0,532484	0,512673
655 ζ [-]	1,14919	1,020779	0,923055	0,845755	0,78281	0,730384	0,685921	0,647647	0,614292	0,584915	0,55881	0,535429	0,514345	0,495217
685 ζ [-]	1,111298	0,987253	0,892825	0,818116	0,757272	0,706588	0,663598	0,62659	0,594335	0,565925	0,540678	0,518065	0,497672	0,479171
715 ζ [-]	1,076376	0,956346	0,864949	0,792625	0,733714	0,684636	0,643004	0,607161	0,57592	0,548402	0,523946	0,502041	0,482286	0,464362
745 ζ [-]	1,044069	0,927744	0,839148	0,769027	0,711904	0,66431	0,623933	0,589169	0,558866	0,532173	0,508449	0,487198	0,468033	0,450644
775 ζ [-]	1,014076	0,901184	0,815184	0,747107	0,691642	0,645425	0,606213	0,57245	0,543018	0,517091	0,494047	0,473404	0,454787	0,437895
805 ζ [-]	0,986145	0,876444	0,792857	0,726682	0,67276	0,627825	0,589698	0,556866	0,528245	0,503032	0,480621	0,460545	0,442438	0,426009
835 ζ [-]	0,960057	0,853331	0,771996	0,707595	0,655113	0,611375	0,57426	0,5423	0,514436	0,489889	0,468069	0,448523	0,430893	0,414896
865 ζ [-]	0,935624	0,83168	0,752453	0,689712	0,638578	0,595959	0,559793	0,528648	0,501493	0,47757	0,456305	0,437254	0,420071	0,404479
895 ζ [-]	0,912686	0,81135	0,734098	0,672915	0,623046	0,581478	0,546202	0,515822	0,489333	0,465996	0,445251	0,426666	0,409902	0,394691
925 ζ [-]	0,891101	0,792216	0,716821	0,657102	0,608423	0,567844	0,533406	0,503745	0,477883	0,455098	0,434842	0,416695	0,400327	0,385473
955 ζ [-]	0,870746	0,774169	0,700524	0,642185	0,594627	0,55498	0,521332	0,49235	0,467079	0,444813	0,42502	0,407286	0,39129	0,376774
985 ζ [-]	0,851513	0,757113	0,68512	0,628085	0,581585	0,54282	0,509917	0,481576	0,456864	0,43509	0,415732	0,398389	0,382745	0,368549
1015 ζ [-]	0,833305	0,740966	0,670535	0,614732	0,569235	0,531303	0,499106	0,471372	0,447189	0,42588	0,406935	0,389962	0,374652	0,360757
1045 ζ [-]	0,816038	0,72565	0,6567	0,602066	0,557519	0,520377	0,488849	0,461691	0,438009	0,417141	0,398589	0,381966	0,366972	0,353364
1075 ζ [-]	0,799637	0,711101	0,643556	0,590031	0,546386	0,509994	0,479102	0,452491	0,429285	0,408836	0,390656	0,374367	0,359673	0,346337
1105 ζ [-]	0,784035	0,697258	0,631049	0,578579	0,535792	0,500114	0,469826	0,443735	0,420982	0,400932	0,383106	0,367134	0,352725	0,339649

Hn\Wn (mm)	1050	1100
385 ζ [-]	0,716196	0,692094
415 ζ [-]	0,675088	0,652393
445 ζ [-]	0,639402	0,617924
475 ζ [-]	0,608077	0,587666
505 ζ [-]	0,580319	0,560853
535 ζ [-]	0,55552	0,536896
565 ζ [-]	0,533206	0,515339
595 ζ [-]	0,513002	0,495819
625 ζ [-]	0,494605	0,478045
655 ζ [-]	0,47777	0,461779
685 ζ [-]	0,462295	0,446827
715 ζ [-]	0,448012	0,433027
745 ζ [-]	0,434782	0,420243
775 ζ [-]	0,422485	0,408361
805 ζ [-]	0,411021	0,397283
835 ζ [-]	0,400302	0,386925
865 ζ [-]	0,390255	0,377216
895 ζ [-]	0,380813	0,368092
925 ζ [-]	0,371922	0,3595
955 ζ [-]	0,363531	0,351391
985 ζ [-]	0,355597	0,343723
1015 ζ [-]	0,348081	0,33646
1045 ζ [-]	0,340949	0,329568
1075 ζ [-]	0,334171	0,323017
1105 ζ [-]	0,327719	0,316782

AVANTAGE 1V60 ME & 1V120 ME

Hn\Wn [mm]	350	400	450	500	550	600	650	700
385 ζ [-]	1,6965	1,4451	1,2593	1,1179	1,0059	0,9149	0,8394	0,7759
415 ζ [-]	1,5489	1,3211	1,1525	1,0238	0,9217	0,8387	0,7699	0,7118
445 ζ [-]	1,4257	1,2173	1,0629	0,9448	0,851	0,7746	0,7113	0,6578
475 ζ [-]	1,3212	1,1292	0,9866	0,8774	0,7906	0,7199	0,6612	0,6116
505 ζ [-]	1,2314	1,0533	0,9209	0,8193	0,7385	0,6727	0,618	0,5717
535 ζ [-]	1,1535	0,9873	0,8636	0,7687	0,6931	0,6315	0,5802	0,5369
565 ζ [-]	1,0851	0,9293	0,8133	0,7241	0,6531	0,5951	0,5469	0,5062
595 ζ [-]	1,0246	0,878	0,7687	0,6846	0,6176	0,5629	0,5174	0,4789
625 ζ [-]	0,9708	0,8322	0,7289	0,6493	0,5859	0,5341	0,491	0,4545
655 ζ [-]	0,9224	0,7911	0,6932	0,6176	0,5574	0,5082	0,4672	0,4325
685 ζ [-]	0,8789	0,754	0,6609	0,589	0,5316	0,4848	0,4457	0,4127
715 ζ [-]	0,8394	0,7204	0,6315	0,5629	0,5082	0,4635	0,4262	0,3946
745 ζ [-]	0,8034	0,6897	0,6048	0,5392	0,4868	0,444	0,4083	0,3781
775 ζ [-]	0,7704	0,6616	0,5803	0,5174	0,4672	0,4262	0,392	0,363
805 ζ [-]	0,7402	0,6358	0,5578	0,4974	0,4492	0,4098	0,3769	0,3491
835 ζ [-]	0,7123	0,612	0,537	0,4789	0,4326	0,3946	0,363	0,3362
865 ζ [-]	0,6865	0,59	0,5177	0,4618	0,4172	0,3806	0,3501	0,3243
895 ζ [-]	0,6626	0,5695	0,4999	0,446	0,4029	0,3676	0,3382	0,3133
925 ζ [-]	0,6403	0,5505	0,4832	0,4312	0,3895	0,3555	0,327	0,3029
955 ζ [-]	0,6196	0,5327	0,4677	0,4174	0,3771	0,3441	0,3166	0,2933
985 ζ [-]	0,6001	0,5161	0,4532	0,4044	0,3654	0,3335	0,3069	0,2843
1015 ζ [-]	0,582	0,5006	0,4396	0,3923	0,3545	0,3236	0,2977	0,2758
1045 ζ [-]	0,5649	0,4859	0,4268	0,3809	0,3442	0,3142	0,2891	0,2679
1075 ζ [-]	0,5488	0,4722	0,4147	0,3702	0,3346	0,3054	0,281	0,2604

Selection data

AVANTAGE 1V60 - 1V120 - Free air passage (m²)

Hn\Bn [mm]	300	350	400	450	500	550	600	650	700
385 Sn [m ²]	0,0763	0,0927	0,1092	0,1256	0,1421	0,1585	0,1750	0,1914	0,2079
415 Sn [m ²]	0,0836	0,1015	0,1195	0,1374	0,1554	0,1733	0,1913	0,2092	0,2272
445 Sn [m ²]	0,0909	0,1104	0,1298	0,1493	0,1687	0,1882	0,2076	0,2271	0,2465
475 Sn [m ²]	0,0982	0,1192	0,1401	0,1611	0,1820	0,2030	0,2239	0,2449	0,2658
505 Sn [m ²]	0,1056	0,1280	0,1505	0,1729	0,1954	0,2178	0,2403	0,2627	0,2852
535 Sn [m ²]	0,1129	0,1368	0,1608	0,1847	0,2087	0,2326	0,2566	0,2805	0,3045
565 Sn [m ²]	0,1202	0,1456	0,1711	0,1965	0,2220	0,2474	0,2729	0,2983	0,3238
595 Sn [m ²]	0,1275	0,1545	0,1814	0,2084	0,2353	0,2623	0,2892	0,3162	0,3431
625 Sn [m ²]	0,1348	0,1633	0,1917	0,2202	0,2486	0,2771	0,3055	0,3340	0,3624
685 Sn [m ²]	0,1495	0,1809	0,2124	0,2438	0,2753	0,3067	0,3382	0,3696	0,4011
655 Sn [m ²]	0,1422	0,1721	0,2021	0,2320	0,2620	0,2919	0,3219	0,3518	0,3818
715 Sn [m ²]	0,1568	0,1897	0,2227	0,2556	0,2886	0,3215	0,3545	0,3874	0,4204
745 Sn [m ²]	0,1641	0,1986	0,2330	0,2675	0,3019	0,3364	0,3708	0,4053	0,4397
775 Sn [m ²]	0,1714	0,2074	0,2433	0,2793	0,3152	0,3512	0,3871	0,4231	0,4590
805 Sn [m ²]	0,1788	0,2162	0,2537	0,2911	0,3286	0,3660	0,4035	0,4409	0,4784

Hn\Bn [mm]		300	350	400	450	500	550	600	650	700
835	Sn [m ²]	0,1861	0,2250	0,2640	0,3029	0,3419	0,3808	0,4198	0,4587	0,4977
865	Sn [m ²]	0,1934	0,2338	0,2743	0,3147	0,3552	0,3956	0,4361	0,4765	0,5170
895	Sn [m ²]	0,2007	0,2427	0,2846	0,3266	0,3685	0,4105	0,4524	0,4944	0,5363
925	Sn [m ²]	0,2080	0,2515	0,2949	0,3384	0,3818	0,4253	0,4687	0,5122	0,5556
955	Sn [m ²]	0,2154	0,2603	0,3053	0,3502	0,3952	0,4401	0,4851	0,5300	0,5750
985	Sn [m ²]	0,2227	0,2691	0,3156	0,3620	0,4085	0,4549	0,5014	0,5478	0,5943
1015	Sn [m ²]	0,2300	0,2779	0,3259	0,3738	0,4218	0,4697	0,5177	0,5656	0,6136
1045	Sn [m ²]	0,2373	0,2868	0,3362	0,3857	0,4351	0,4846	0,5340	0,5835	0,6329
1075	Sn [m ²]	0,2446	0,2956	0,3465	0,3975	0,4484	0,4994	0,5503	0,6013	0,6522

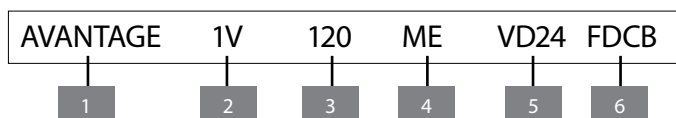
AVANTAGE 2V60 - 2V120 - Free air passage (m²)

Hn\Bn [mm]		350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
385	Sn [m ²]	0,0831	0,0996	0,1160	0,1325	0,1489	0,1654	0,1818	0,1983	0,2147	0,2312	0,2476	0,2641	0,2805	0,2970	0,3134	0,3299
415	Sn [m ²]	0,0911	0,1090	0,1270	0,1449	0,1629	0,1808	0,1988	0,2167	0,2347	0,2526	0,2706	0,2885	0,3065	0,3244	0,3424	0,3603
445	Sn [m ²]	0,0990	0,1185	0,1379	0,1574	0,1768	0,1963	0,2157	0,2352	0,2546	0,2741	0,2935	0,3130	0,3324	0,3519	0,3713	0,3908
475	Sn [m ²]	0,1070	0,1279	0,1489	0,1698	0,1908	0,2117	0,2327	0,2536	0,2746	0,2955	0,3165	0,3374	0,3584	0,3793	0,4003	0,4212
505	Sn [m ²]	0,1149	0,1373	0,1598	0,1822	0,2047	0,2271	0,2496	0,2720	0,2945	0,3169	0,3394	0,3618	0,3843	0,4067	0,4292	0,4516
535	Sn [m ²]	0,1228	0,1468	0,1707	0,1947	0,2186	0,2426	0,2665	0,2905	0,3144	0,3384	0,3623	0,3863	0,4102	0,4342	0,4581	0,4821
565	Sn [m ²]	0,1308	0,1562	0,1817	0,2071	0,2326	0,2580	0,2835	0,3089	0,3344	0,3598	0,3853	0,4107	0,4362	0,4616	0,4871	0,5125
595	Sn [m ²]	0,1387	0,1657	0,1926	0,2196	0,2465	0,2735	0,3004	0,3274	0,3543	0,3813	0,4082	0,4352	0,4621	0,4891	0,5160	0,5430
625	Sn [m ²]	0,1467	0,1751	0,2036	0,2320	0,2605	0,2889	0,3174	0,3458	0,3743	0,4027	0,4312	0,4596	0,4881	0,5165	0,5450	0,5734
655	Sn [m ²]	0,1546	0,1846	0,2145	0,2445	0,2744	0,3044	0,3343	0,3643	0,3942	0,4242	0,4541	0,4841	0,5140	0,5440	0,5739	0,6039
685	Sn [m ²]	0,1626	0,1940	0,2255	0,2569	0,2884	0,3198	0,3513	0,3827	0,4142	0,4456	0,4771	0,5085	0,5400	0,5714	0,6029	0,6343
715	Sn [m ²]	0,1705	0,2035	0,2364	0,2694	0,3023	0,3353	0,3682	0,4012	0,4341	0,4671	0,5000	0,5330	0,5659	0,5989	0,6318	0,6648
745	Sn [m ²]	0,1784	0,2129	0,2473	0,2818	0,3162	0,3507	0,3851	0,4196	0,4540	0,4885	0,5229	0,5574	0,5918	0,6263	0,6607	0,6952
775	Sn [m ²]	0,1864	0,2223	0,2583	0,2942	0,3302	0,3661	0,4021	0,4380	0,4740	0,5099	0,5459	0,5818	0,6178	0,6537	0,6897	0,7256
805	Sn [m ²]	0,1943	0,2318	0,2692	0,3067	0,3441	0,3816	0,4190	0,4565	0,4939	0,5314	0,5688	0,6063	0,6437	0,6812	0,7186	0,7561
835	Sn [m ²]	0,2023	0,2412	0,2802	0,3191	0,3581	0,3970	0,4360	0,4749	0,5139	0,5528	0,5918	0,6307	0,6697	0,7086	0,7476	0,7865
865	Sn [m ²]	0,2102	0,2507	0,2911	0,3316	0,3720	0,4125	0,4529	0,4934	0,5338	0,5743	0,6147	0,6552	0,6956	0,7361	0,7765	0,8170
895	Sn [m ²]	0,2182	0,2601	0,3021	0,3440	0,3860	0,4279	0,4699	0,5118	0,5538	0,5957	0,6377	0,6796	0,7216	0,7635	0,8055	0,8474
925	Sn [m ²]	0,2261	0,2696	0,3130	0,3565	0,3999	0,4434	0,4868	0,5303	0,5737	0,6172	0,6606	0,7041	0,7475	0,7910	0,8344	0,8779
955	Sn [m ²]	0,2341	0,2790	0,3240	0,3689	0,4139	0,4588	0,5038	0,5487	0,5937	0,6386	0,6836	0,7285	0,7735	0,8184	0,8634	0,9083
985	Sn [m ²]	0,2420	0,2884	0,3349	0,3813	0,4278	0,4742	0,5207	0,5671	0,6136	0,6600	0,7065	0,7529	0,7994	0,8458	0,8923	0,9387
1015	Sn [m ²]	0,2499	0,2979	0,3458	0,3938	0,4417	0,4897	0,5376	0,5856	0,6335	0,6815	0,7294	0,7774	0,8253	0,8733	0,9212	0,9692
1045	Sn [m ²]	0,2579	0,3073	0,3568	0,4062	0,4557	0,5051	0,5546	0,6040	0,6535	0,7029	0,7524	0,8018	0,8513	0,9007	0,9502	0,9996
1075	Sn [m ²]	0,2658	0,3168	0,3677	0,4187	0,4696	0,5206	0,5715	0,6225	0,6734	0,7244	0,7753	0,8263	0,8772	0,9282	0,9791	1,0301
1105	Sn [m ²]	0,2738	0,3262	0,3787	0,4311	0,4836	0,5360	0,5885	0,6409	0,6934	0,7458	0,7983	0,8507	0,9032	0,9556	1,0081	1,0605

AVANTAGE 1V60 ME - 1V120ME - Free air passage (m²)

Hn\Bn [mm]		350	400	450	500	550	600	650	700
385	Sn [m ²]	0,0858	0,1020	0,1182	0,1344	0,1505	0,1667	0,1828	0,1990
415	Sn [m ²]	0,0946	0,1123	0,1300	0,1477	0,1653	0,1830	0,2006	0,2183
445	Sn [m ²]	0,1035	0,1226	0,1419	0,1610	0,1802	0,1993	0,2185	0,2376
475	Sn [m ²]	0,1123	0,1329	0,1537	0,1743	0,1950	0,2156	0,2363	0,2569
505	Sn [m ²]	0,1211	0,1433	0,1655	0,1877	0,2098	0,2320	0,2541	0,2763
535	Sn [m ²]	0,1299	0,1536	0,1773	0,2010	0,2246	0,2483	0,2719	0,2956
565	Sn [m ²]	0,1387	0,1639	0,1891	0,2143	0,2394	0,2646	0,2897	0,3149
595	Sn [m ²]	0,1476	0,1742	0,2010	0,2276	0,2543	0,2809	0,3076	0,3342
625	Sn [m ²]	0,1564	0,1845	0,2128	0,2409	0,2691	0,2972	0,3254	0,3535
655	Sn [m ²]	0,1652	0,1949	0,2246	0,2543	0,2839	0,3136	0,3432	0,3729
685	Sn [m ²]	0,1740	0,2052	0,2364	0,2676	0,2987	0,3299	0,3610	0,3922
715	Sn [m ²]	0,1828	0,2155	0,2482	0,2809	0,3135	0,3462	0,3788	0,4115
745	Sn [m ²]	0,1917	0,2258	0,2601	0,2942	0,3284	0,3625	0,3967	0,4308
775	Sn [m ²]	0,2005	0,2361	0,2719	0,3075	0,3432	0,3788	0,4145	0,4501
805	Sn [m ²]	0,2093	0,2465	0,2837	0,3209	0,3580	0,3952	0,4323	0,4695
835	Sn [m ²]	0,2181	0,2568	0,2955	0,3342	0,3728	0,4115	0,4501	0,4888
865	Sn [m ²]	0,2269	0,2671	0,3073	0,3475	0,3876	0,4278	0,4679	0,5081
895	Sn [m ²]	0,2358	0,2774	0,3192	0,3608	0,4025	0,4441	0,4858	0,5274
925	Sn [m ²]	0,2446	0,2877	0,3310	0,3741	0,4173	0,4604	0,5036	0,5467
955	Sn [m ²]	0,2534	0,2981	0,3428	0,3875	0,4321	0,4768	0,5214	0,5661
985	Sn [m ²]	0,2622	0,3084	0,3546	0,4008	0,4469	0,4931	0,5392	0,5854
1015	Sn [m ²]	0,2710	0,3187	0,3664	0,4141	0,4617	0,5094	0,5570	0,6047
1045	Sn [m ²]	0,2799	0,3290	0,3783	0,4274	0,4766	0,5257	0,5749	0,6240
1075	Sn [m ²]	0,2887	0,3393	0,3901	0,4407	0,4914	0,5420	0,5927	0,6433

Sample order



1. product
2. 1 shutter (1V)/2 shutters (2V)
3. fire resistance of 60 or 120 minutes
4. option: resetting motor
5. option: type magnet and voltage
6. option: bipolar end of range switch (FDCU included)

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.



1812_CPR_1042



05.25 & 05.26



ISO 9001

The NF-label guarantees: conformity with the standard NF S 61-937 Parts 1 and 10: "Systèmes de Sécurité Incendie Dispositifs Actionnés de Sécurité"; conformity with the national decree of March 22, 2004, changed on 14 March 2011 for the classification of fire resistance; the values of the characteristics mentioned in this document. Organisme Certificateur: AFNOR Certification, 11 Rue Francis de Pressensé, F93571 La Plaine Saint-Denis Cedex; Website: <http://www.afnor.org> <http://www.marquage-nf.com>; Phone: +33 (0)1.41.62.80.00, Fax: +33 (0)1.49.17.90.00, Email: certification@afnor.org