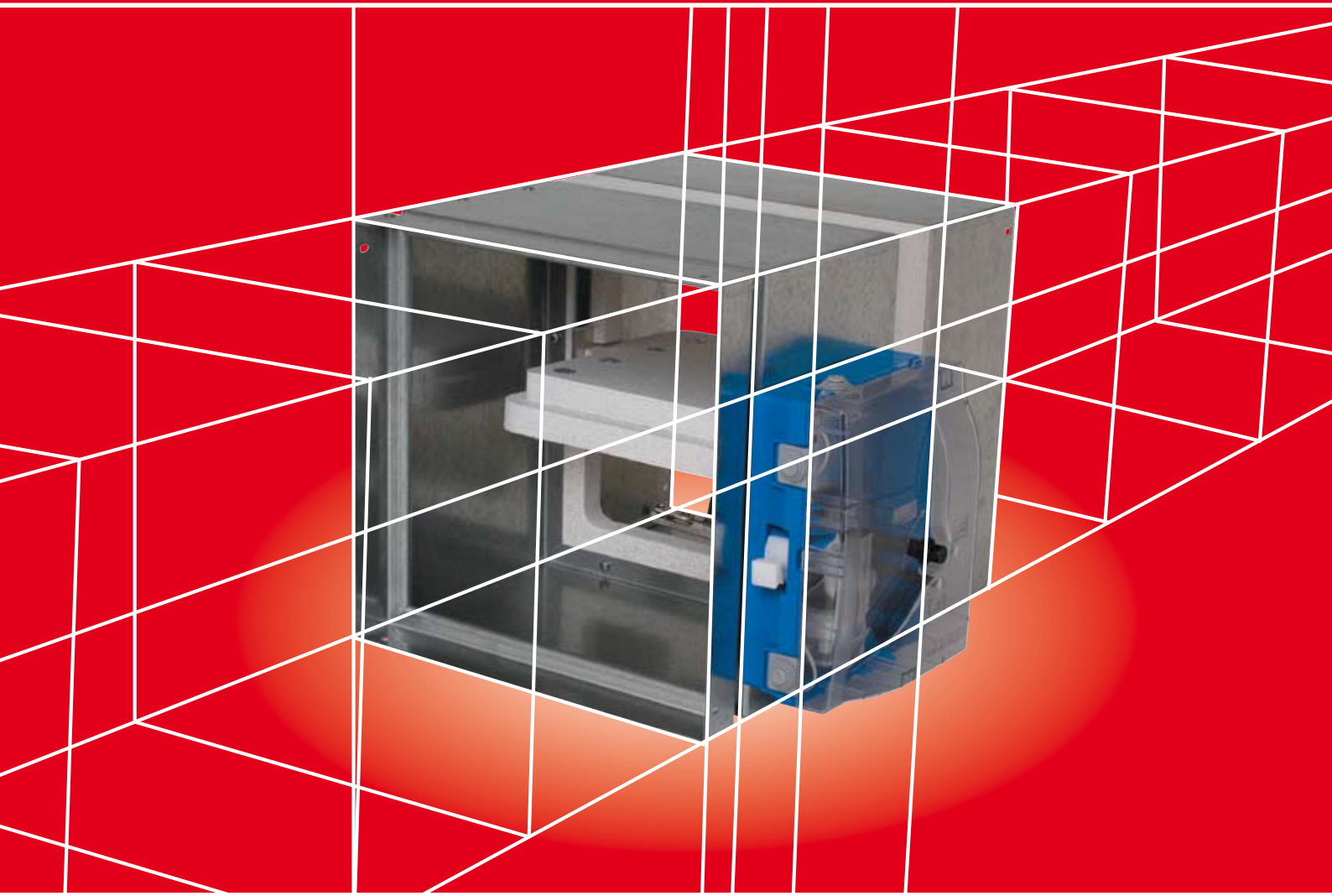


Fire Protection

ISONE Fire dampers



Knowing and understanding the EN 1366-2 Standard: 1999

"Fire resistance tests for technical installations. Part 2: Fire damper"

■ Objective

To determine the fire resistance of fire dampers installed in space separation elements designed to resist heat and the passage of fumes, smoke and gas at high temperature. A fire damper aims to stop the propagation of fire.

■ Description of the procedure for a damper's fire resistance test

① Opening and closing test

On the damper to be subjected to the fire resistance test, carry out 50 opening and closing cycles using the manual mechanism.

➔ This test has the purpose of ageing the fire damper before the fire resistance test.

② Test for determining the rate of leakage at ambient temperature

Following the previous test, measure the rate of leakage with blade closed, from the smallest to the largest damper. The rate of leakage is determined for the expected classification pressure: 300, 500 or 1500 Pa.

➔ This test has the purpose of demonstrating the capacity of the fire damper to stop the propagation of cold smoke and fumes, in order to avoid any risk of panic during the evacuation of persons.

③ Fire resistance test

3.1 Following the previous test, the damper is installed on the test oven, with its blade open. The pressure loss fan is set to obtain an airflow rate of 0.15 m/s through the damper.

The fire damper must close within 2 minutes following the start-up of the oven.

➔ This part of the test has the purpose of checking that the fire damper's fusible thermal link has been correctly designed to ensure the correct and rapid closing of the blade.

3.2 The oven's temperature curve respects the ISO 834 curve and the fan is adjusted to maintain a pressure loss of 300, 500 or 1500 Pa in the exhaust duct right up to the end of the test, 2 hours for example.

➔ This part of the test has the purpose of checking that the damper remains leaktight and fire resistant in spite of the pressure loss.

■ Performance criteria and fire resistance rating in accordance with EN 13501-3

① Fire integrity for meeting the classification "E"

After the 5th minute following the start-up of the oven, the leaks through the damper (reduced to 20°) must not exceed 360 m³/h/m² on the blade, whatever the pressure 300, 500 or 1500 Pa.

The "E" rating fire integrity for a damper corresponds to the number of minutes where this criterion is respected. As a reminder, the passage of hot fumes, smoke and gases can lead to the ignition on the side not exposed to fire.

② Thermal insulation to meet the "I" classification

The temperature around the damper is recorded:

- on average, it must not exceed the ambient test temperature of more than 140°C,
- at any point, it must not exceed this same temperature of more than 180°C.

The "I" thermal insulation rating of a damper corresponds to the number of minutes where this criterion is respected.

③ Smoke integrity for meeting the classification "S"

At ambient temperature and after the 5th minute of temperature rise, the leaks through the damper (reduced to 20°) must not exceed 200 m³/h/m² on the blade, whatever the pressure 300, 500 or 1500 Pa.

The "S" smoke integrity rating for a damper corresponds to the number of minutes where this criterion is respected.

Definitive classification of the damper

The classification must be presented in compliance with the EN 13501-3 Standard:

E	I		t	t		(ve		ho		i	↔	°)		s
---	---	--	---	---	--	---	----	--	----	--	---	---	---	---	--	---

For example, the ISONE fire damper has obtained the classification:

EI 120 min (ho ve i↔o) S

Therefore, this fire damper has a fire integrity (E), thermal insulation (I) smoke integrity (S) for 120 minutes for the fire in 2 directions (i↔o) and for both a horizontal (ho) and vertical (ve) installation.

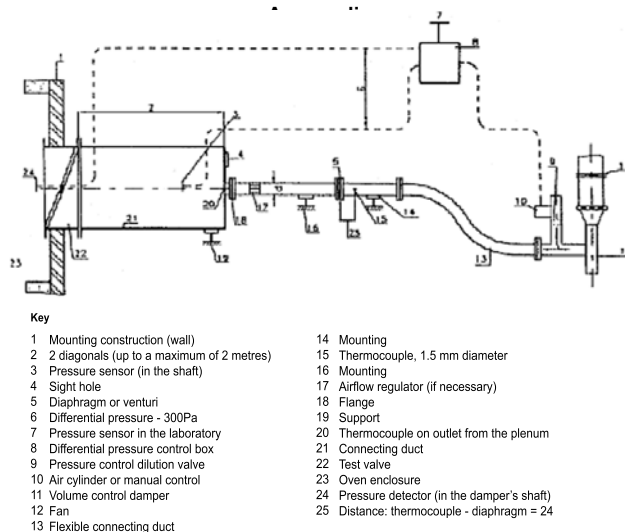
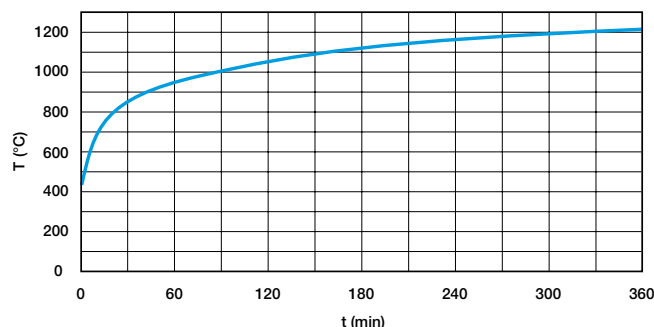


Figure 1 – Example of a general test configuration



ISO 834 Curve

Fire dampers: the ISONE offer

ISONE fire damper mechanism - p. 4

"Upgradable, with no tools required clip-on equipment"



Embedded ISONE fire damper - p. 8

"Wall and floor mounting, embedded, with offset mechanism"

Circular ISONE fire damper - p. 8



Rectangular ISONE fire damper - p. 12



ISONE fire damper with BF / BLF mechanism - p. 16



Battery assembly - p. 18



ISONE fire damper mechanism

ISONE: fully adaptable in just a few minutes!



Advantages

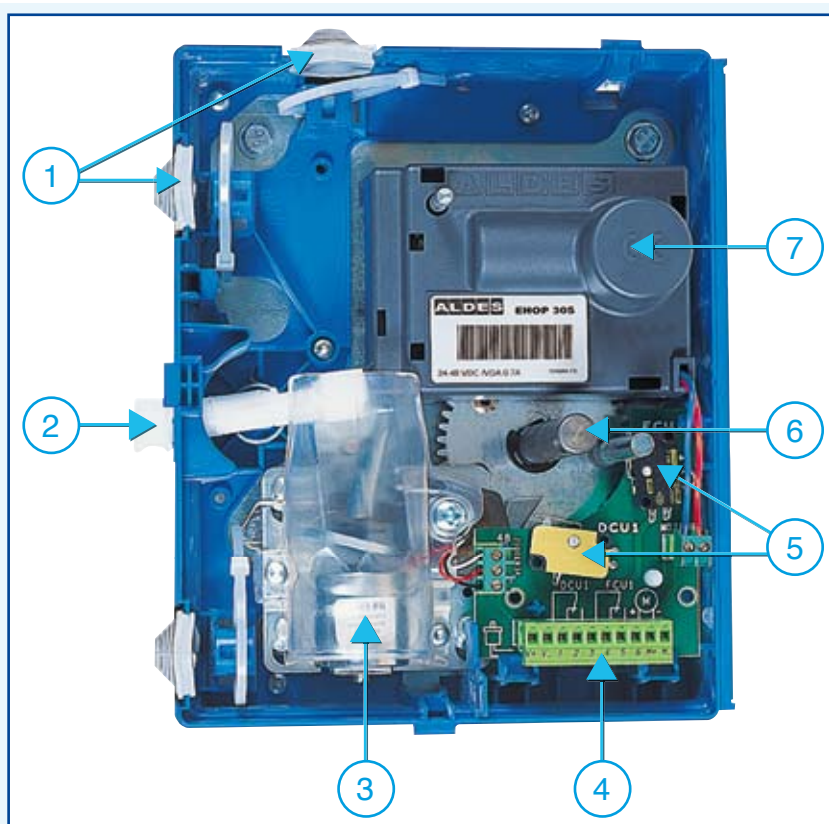
- Upgradeable mechanisms: all of the equipment can be added /removed at any time; the operation being carried out by one hand only without tools.
- 24 or 48 V?: Inadvertent command error impossible!
- Easy wiring: all of the ISONE terminal boxes are unpluggable without any need for tools and have a foolproof device.

DESCRIPTION

- The ISONE mechanism can be fitted with all tripping, indicating and resetting equipment, either in the factory or by completing it on-site later.
- All these types of equipment are clipped into a blue IP42 box, designed to provide a multitude of useful features during both installation and testing.
- The clip-fixed transparent cover can be removed using a large screwdriver - its purpose is to show the position of the damper.

- ① : The three cable glands can slide into the box.
- ② : Ergonomic and simple manual trip controls.
- ③ : 24/48 V electromagnetic tripping device.
- ④ : Unpluggable terminals for easier electrical connections.
- ⑤ : Signalling contacts.
- ⑥ : Reset lever accessible without removing the cover; a ¼ turn with a screwdriver is sufficient to open the blade.
- ⑦ : Reset motor EHOP 30s.

- For even greater protection the IP42 transparent cover is used to cover all of the equipment.



TRIPPING OPTIONS

• FTE 70°C THERMAL TRIP

A stainless steel thermal fusible link is screw fitted into the mechanism's box.

Rapid access for changing the fuse.

70°C fuse in accordance with French Standard NF S 10294-4.

• ELECTROMAGNETIC COIL DEVICE

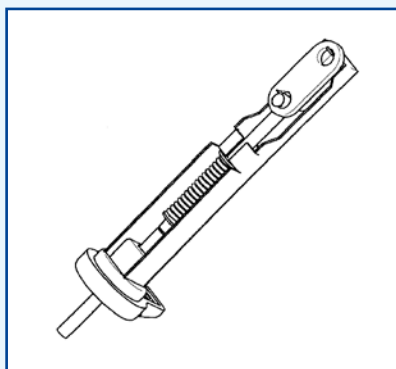
It operates on power reception of an external electrical command (for example power emission (VDS) or a power cut off (VM)).

An exclusive development of this tripping device enables it to function under both 24 and 48 VDC. A manual control switch is used to select the voltage.

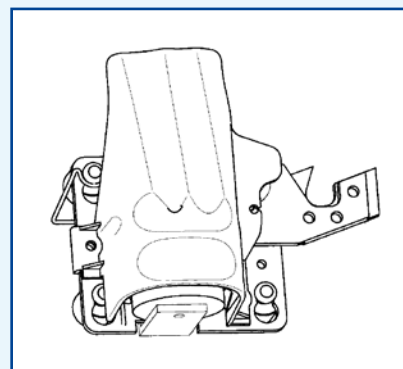
The trip device assembly is removable with one hand only, without using tools.

• MANUAL CONTROL

White tripping handle integrated into the box and can be used without removing the cover.



Thermal fusible link



Electromagnetic coil device

ISONE fire damper mechanism

ISONE: fully adaptable in just a few minutes!

SIGNALLING OPTIONS

Position signalling contacts are mounted on card-type printed circuit boards. All these cards clip into the mechanism housing and are easily removable without the use of tools. They are fitted with removable connection terminals with foolproof device.

• ELECTRONIC PCB CARD N° 1 - FCU1 - DCU1

Reserved for dampers equipped with a thermal fusible link (FTE) only.

Comprises the choice of:

- an FCU1 closed position switch (indicates that the damper is closed),
- a DCU1 open position switch (indicates that the damper is open),
- Both contacts FCU1 + DCU1.

• ELECTRONIC PCB CARD N° 2 - ELECTROMAGNET MOTOR

Suitable for dampers fitted with a VDS or VM electromagnetic tripping device.

It should be systematically fitted with a closed position switch (FCU1). It can also be fitted with an open position switch (DCU1).

• ELECTRONIC PCB CARD N° 3 - FCU2 + DCU2

Clips on to cards N° 1 and N° 2.

Systematically fitted with Open and Closed position switches FCU2 + DCU2.

RESETTING OPTIONS

• MANUAL RESET

Manual resetting is possible without removing the cover.

Using a large screwdriver, turn the operating rod by a ½ turn.

• RESET MOTOR EHOP 30S

Enables the blade to be replaced in the standby position without having to touch the damper itself. Easily plugged in with one hand into the mechanism's box, without the use of tools.

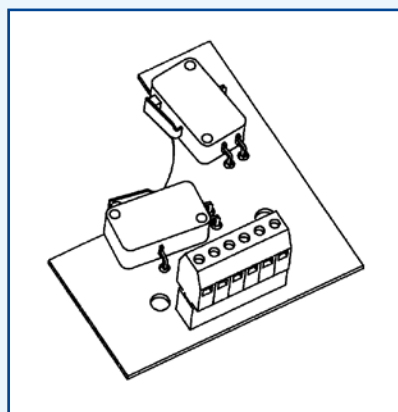
Can be removed with one hand, without using tools.

Resetting takes less than 10 seconds.

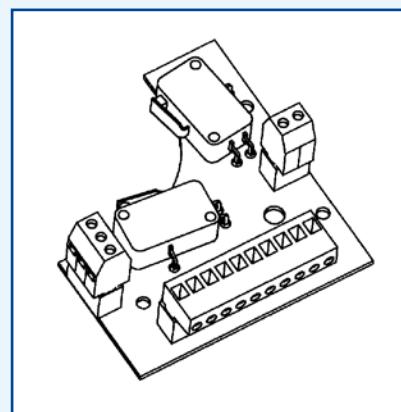
Max. current consumption during resetting = 0.7 A.

Max. current other than resetting = 0.

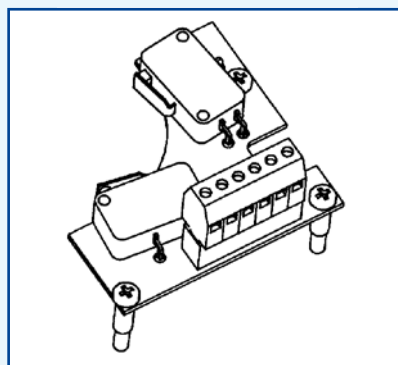
Voltage comprised between 24 and 48 VDC/VDA.



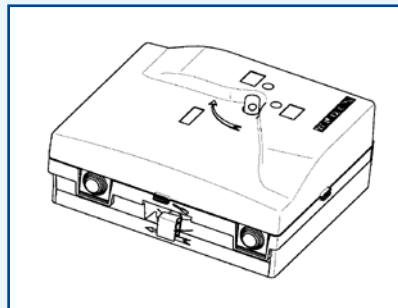
Electronic PCB card n°1 - FCU1 + DCU1.



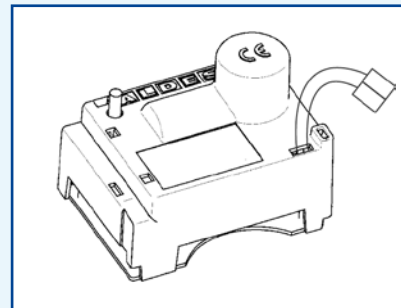
Electronic PCB card n°2 - FCU1 + DCU1.



Electronic PCB card n°3 - FCU2 + DCU2.



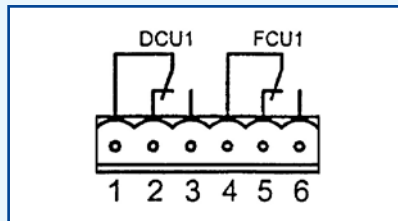
Mechanism box.



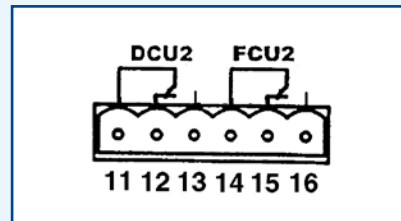
EHOP 30S motor.

ELECTRICAL CONNECTION

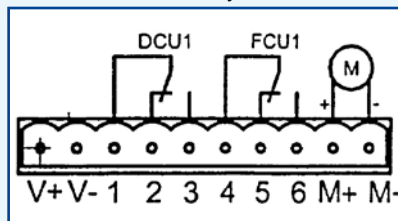
The ISONE® terminals can be removed without the use of tools, electrical cables are fixed by screws.



Card 1 FCU1-DCU1: 2 contacts for an ISONE with an FTE only = 6 terminals.



Card 3 FCU2-DCU2: 2 auxiliary contacts = 6 terminals.



Card 2 electromagnet/motor: electromagnet + 2 contacts + motor = 10 terminals.

ISONE[®] mechanism: fully adaptable in just a few minutes!



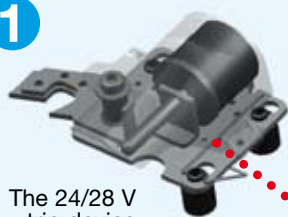
Since 1984, all Aldes fire dampers are fully adaptable. This means that, once installed, the fire damper mechanisms, can be completed by an electromagnetic coil device, or one or several signalling contacts and a resetting motor.

The fire dampers thereby adapt to changes in regulatory and standard requirements and operating needs. With the ISONE mechanism, adaptability is made as simple as possible! Thanks to equipment that can be clipped on using one hand and with no tools, the ISONE can upgrade to its most complete version in just 3 minutes.

The resetting motor is obviously the most interesting piece of equipment for the operator because it allows for carrying out the compulsory annual controls by remote control and thus avoid having to dismantle false ceilings.

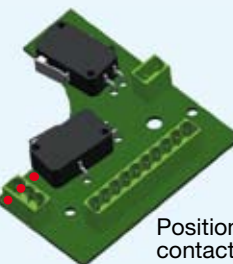
In the event of the absence of electrical supply, the use of the portable ALDES CONTROL pack is sufficient.

1



The 24/28 V trip device

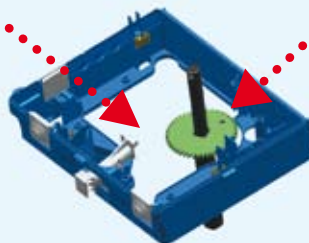
2



Position signalling contacts

60 SECONDS

60 SECONDS

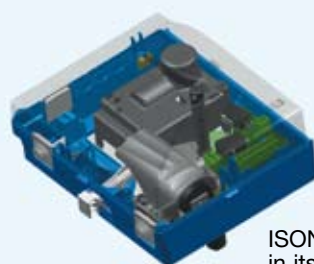


3



The resetting motor

30 SECONDS



ISONE mechanism in its complete version

Example of how easy it is to fit the EHOP motor:

1



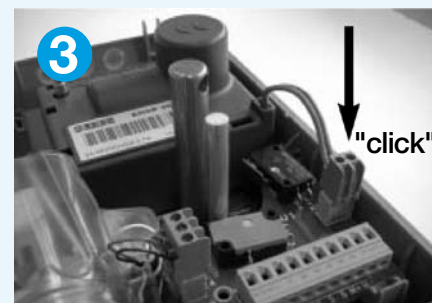
Fitting the motor

2



The pin descends into its housing

3



Electrical connections

ISONE fire damper mechanism

"ALDES CONTROL" PACK



Advantages

- Very useful for checking the functioning of a fire damper, independently from the centralised system.
- Portable.

APPLICATION

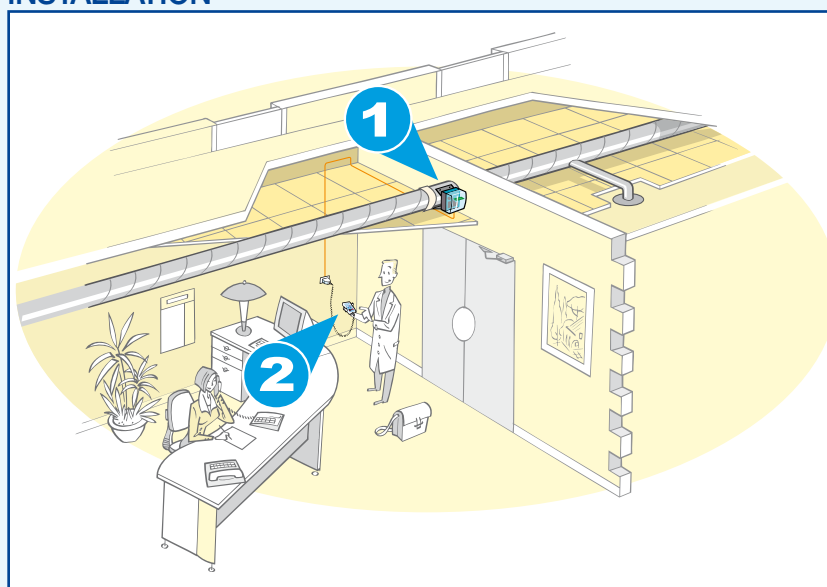
To perfect and facilitate the various controls, verifications and adjustments that precede any start-up of an installation, ALDES has designed and marketed a portable automatic functions **controller** called "**ALDES CONTROL**", which is autonomous and can be recharged from the mains supply, whose ergonomics and simplicity in use make it an indispensable tool for safety/security professionals.

Amongst other features, and after connecting it to the electrical terminal of an ALDES fire damper or smoke exhaust damper using a quick-fit multi-pin connector, it allows for simulating the various centralised control system sequences and to **test the functions** of all of the components present such as:

- **the electromagnetic coil device** on power emission by a time-delayed pulse train,
- **the position signalling contacts**, using green and red LEDs to show the standby or safety position status,
- **the resetting servo-motor**, with a unit energised indicator throughout the cycle's duration,
- **the priority management of the safety position** on the fire damper or smoke exhaust damper,
- **the correct electrical connection** for all the components on the single or plug-in terminal.

In addition, it makes the necessary voltage selection automatically (24 or 48 VDC) for the correct operation of the equipment, and ensures about one hundred or so successive tests without recharge in the case of a complete configuration.

INSTALLATION



- 1 ISONE fire damper with an Aldes mechanism
- 2 "ALDES CONTROL" Pack

RANGE

Abbreviation	Description	Code
ALDES CONTROL* For ISONE Pack	Function controller for FIRE or SMOKE EXHAUST DAMPERS	11041695
CONTROL PACK protective bag kit	Protection and travel bag	11041697
16-pin connector Kit	Withdrawable adapter for Weidmuller 16-pin terminals.	11041770
VRFI-VANTONE cord kit	WAGO cable kit + 12-pin connector - VRFI - VANTONE (before Sept. 2005)	11041699
ISONE - VANTONE 10-pin cord kit	A 10-pin cord kit for ISONE - VANTONE (after Sept. 2005)	11041696
CONTROL PACK charger kit		11041698

* Comprises: 1 controller, 1 protective bag, 1 charger, 1 ISONE 10-pin connector cord.

The various fire dampers in the ISONE range

ISONE embedded circular fire damper: Did you know?



ISONE FdP

ISONE EM

Circular ISONE fire dampers offer an unprecedented choice:

- The "FdP" low pressure loss version, available in diameters 160 to 315 mm, improves the passage of air whilst keeping the reserve openings identical to conventional fire dampers.
- The "EM" minimum dimensions version, available in diameters 160 to 500 mm (800 mm on a rectangular body), presents reserve openings identical to the air duct, i.e. the smallest reserve openings on the market.
- Grouted with traditional mortar, the fitting of ISONE EMBEDDED models requires no suspension or fixing, either in a concrete wall or through a concrete tile.

Moreover, ISONE (both circular and rectangular models) is the first French fire damper to have obtained the EIS 120 classification, in compliance with the European Standard EN1366-2.

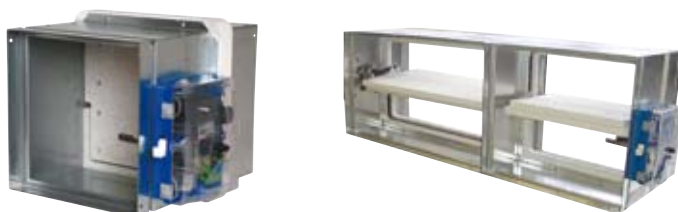
FIRE PROTECTION RATING EN 1366-2

- EIS 120 - 500 Pa Ve - Ho.
- Ve 110 mm in concrete wall or 150 mm in cellular concrete wall.
- Ho 110 mm in concrete tile or 150 mm in cellular concrete tile.

Advantages

- **New**: body in Ø of 160 mm.
- Choice between Low pressure loss and Minimum size.
- Traditional and economical grouting with mortar.
- Wall or tile: no fixing accessory.

ISONE embedded rectangular fire damper: Did you know?



ISONE FdP

2 ISONE EM assembled in banks

ISONE rectangular fire dampers offer certain advantages that have no equivalent:

- The "FdP" low pressure loss version, available in sizes 200 x 200 to 700 x 700 mm, improves the passage of air whilst keeping the reserve opening dimensions identical to conventional fire dampers.
- The "EM" minimum overall dimension version presents reserve opening dimensions identical to the air duct, i.e. the smallest reserve openings on the market.
- Grouted with traditional mortar, the fitting of ISONE EMBEDDED models requires no suspension or fixing, either in a concrete wall or through a concrete tile.
- The metal body reduces its weight quite considerably.
- The mounting of ISONE EMBEDDED fire dampers in bank assemblies is the simplest and most economic on the market. In addition, thanks to its metal body, the reduction of free air passage is minimal, as opposed to fire dampers entirely made of refractory materials which generate more heat losses.

FIRE PROTECTION RATING EN 1366-2

- EIS 120 or 90 - 500 Pa Ve - Ho.
- Ve 110 mm in concrete wall or 150 mm in cellular concrete wall.
- Ho 110 mm in concrete tile or 150 mm in cellular concrete tile.

Advantages

- Choice between Low pressure loss and Minimum size.
- Traditional and economical grouting with mortar.
- Wall or tile: no fixing accessory.

ISONE circular fire damper

ISONE embedded circular fire damper



ISONE FdP

ISONE EM

Advantages

- **New**: body in Ø of 160 mm.
- 2h Fire Rating authorised for installation in walls and floors.
- Traditional grouting with mortar.
- Double range up to a Ø of 315 mm:
 - FdP = low pressure loss,
 - EM = minimum space requirement.

APPLICATION

- Compartmentalisation of premises

APPLICATION

- Consisting of 2 metal sleeves on both sides of an assembly of refractory material.
- The upgradeable mechanism box is positioned on a sleeve. This housing is set back from the blade itself to avoid it being sealed into the partition during installation of the damper.
- Embedded, circular Isonne comprising 2 ranges:
 - Isonne FdP: designed to minimise the pressure losses created by the airflow passing through,
 - Isonne EM: presents a minimum overall dimension.

INSTALLATION

- Embedded into a concrete wall of 110 mm.
- Embedded through a concrete tile: the installation requires no particular type of fixing or suspension.
- Traditional grouting with mortar.
- The mechanism's box is fitted flush against the wall or the tile.
- Aeraulic connection: it must not apply any stress on the damper.

RANGE with a choice of options

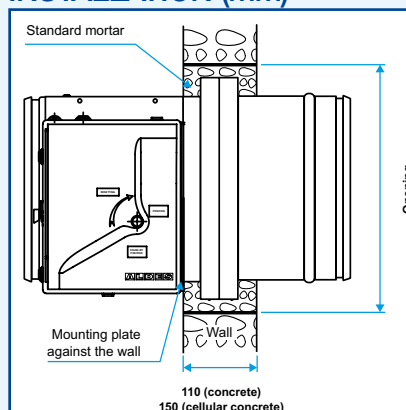
- ISONE FdP up to a Ø of 315 mm.
- ISONE EM up to a Ø of 800 mm.

See following pages.

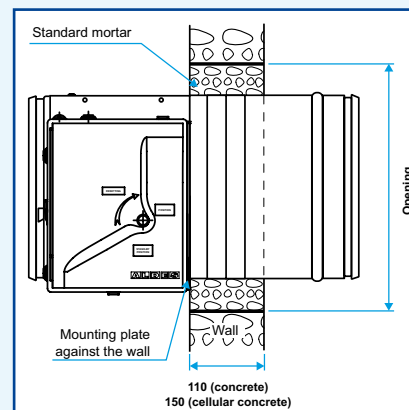
OPTIONS AVAILABLE

- **Mechanism equipment**
Description: see page 4.
- **Aeraulic connection**
Airtight seal:
 - Enables limitation of power losses and ensures simple and rapid assembly,
 - Single lip seal up to a Ø of 400 mm, double beyond that.
- **Customisable labelling**
Name of the worksite, of customer, installation area etc.

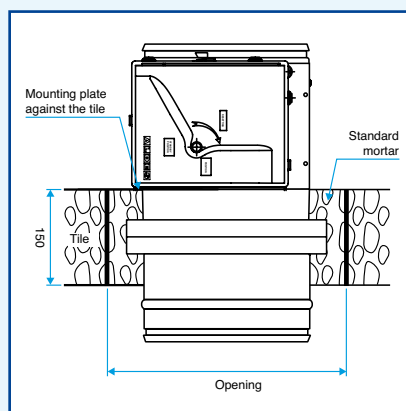
INSTALLATION (mm)



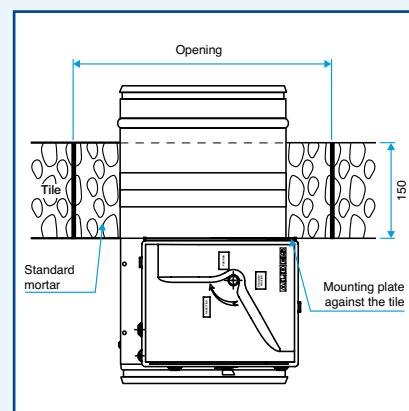
Isonne FdP in a concrete wall



Isonne EM in a concrete wall

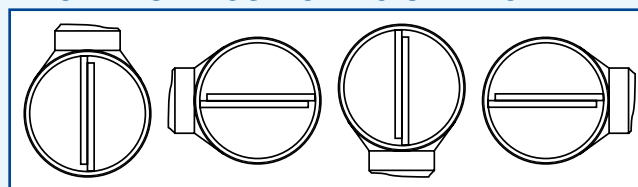


Isonne FdP in through-the-wall position in concrete tile



Isonne EM in through-the-wall position in concrete tile

MECHANISM POSITIONING UNIMPORTANT



ISONE circular fire damper

ISONE Ø embedded - FdP : Low pressure loss



Did you know?

Tile approved damper: traditional grouting with mortar, with no reinforced hanging.

Advantages

- **New**: body in Ø of 160 mm.
- Reduced pressure losses.
- Embedded into the tile - no fixings or hangings.
- Horizontal or vertical blades.

DESCRIPTION

- 2 male metal sleeves on both sides of an assembly of refractory material.
- Designed to minimise the pressure losses created by the airflow passing through.
- Upgradeable mechanism offset from the blade.

FIRE PROTECTION RATING - EN 1366-2

- EIS 120 - 500 Pa in concrete wall 110mm and cellular concrete wall 150mm,
- EIS 120 - 500 Pa in concrete tile 110mm and cellular concrete tile 150mm.

FIRE PROTECTION RATING - FRANCE

- 1h30 fire resistance rating on 70mm gypsum wallboards
- 2h fire resistance rating on 100 mm gypsum wallboards.

INSTALLATION

- Embedded into a vertical concrete wall of 110 mm.
- Embedded into the tile - no fixings or hangings.
- Traditional grouting with mortar.
- Offset mechanism on the wall or tile.

RANGE with a choice of options

The fusible thermal link at 70°C is included.

Description	Code
ISONE EUROPE EIS FdP Ø 100 mm*	11043430
ISONE EUROPE EIS FdP Ø 125 mm*	11043431
ISONE EUROPE EIS FdP Ø 160 mm	11043432
ISONE EUROPE EIS FdP Ø 200 mm	11043433
ISONE EUROPE EIS FdP Ø 250 mm	11043434
ISONE EUROPE EIS FdP Ø 315 mm	11043435

* From a body of Ø 160 mm.

ACCESSORIES

Base, cover and terminal block kit.

Description	Code
Complete transparent cover	11043413
Blue main control unit + manual control	11043412
10-pin withdrawable terminal block (electromagnet + motor + FCU1 + DCU1)	11041930
6-pin withdrawable terminal block, terminals 1 to 6 (FCU1 + DCU1)	11041931
6-pin withdrawable terminal block, terminals 11 to 16 (FCU2 + DCU2)	11041932

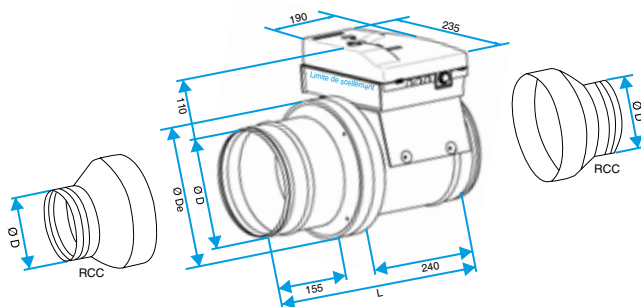
Aeraulic airtight seals kit.

Description	Code
2 seals Ø 100	11041936
2 seals Ø 125	11041937
2 seals Ø 160	11041938
2 seals Ø 200	11041939
2 seals Ø 250	11041940
2 seals Ø 315	11041941
2 seals Ø 355	11041942
2 seals Ø 400	11041943
2 seals Ø 450	11041944
2 seals Ø 500	11041945

Concentric circular reducers.

Description	Code
RCC Ø 160 - 100 ISONE EIS	11143574
RCC Ø 160 - 125 ISONE EIS	11143575

DIMENSIONS (mm) - WEIGHT (kg)



Ø D	Ø opening	L	Ø Overall	Weight
100	260	555*	250	7
125	260	550*	250	7
160	260	505*	250	7
200	260	445	250	8
250	310	445	300	9
315	375	445	365	10

* Total length including the 2 adapted RCC (female/male).

OPTIONS AVAILABLE

Equipment selection	Comments
FTE 70°C	Tripping only by thermal fusible link
"FTE" CONTACTS	Contacts for signalling position of the blade
FCU1 for "FTE"	FCU = closed position switch = blade closed DCU = open position switch = blade open
DCU1 for "FTE"	
FCU1 + DCU1 for "FTE"	
TRIP DEVICE	Electrical tripping
VDS 24 ISONE	Attention, connecting terminal on "VDS or VM or EHOP" Contacts
VDS 48 ISONE	
VM 24 ISONE	
VM 48 ISONE	
CONTACTS "VDS or VM or EHOP"	Contacts for signalling position of the blade
FCU1 "VDS or VM or EHOP"	FCU = closed position switch = blade closed DCU = open position switch = blade open
FCU1 + DCU1 "VDS or VM or EHOP"	
CONTACTS 2	Doubles the position signalling contacts
FCU2 + DCU2"	Can be fixed to "FTE" Contacts or "VDS or VM or EHOP" Contacts
MOTOR	Electrical resetting of the damper by remote control in less than 30 s.
EHOP 30S ISONE	Attention, connecting terminal on "VDS or VM or EHOP" Contacts
PROTECTIVE COVER	Protection against dust (IP42), impacts and sealing.

The blue socket base is supplied when a contact is selected.

ISONE circular fire damper

ISONE Ø embedded - EM: minimum space requirement



Did you know?

Tile approved damper: traditional grouting with mortar, with no reinforced hanging.

Advantages

- **New**: body in Ø of 160 mm.
- Reduced pressure losses.
- Embedded into the tile - no fixings or hangings.
- Horizontal or vertical blades.

DESCRIPTION

- 2 male metal sleeves on both sides of an assembly of refractory material.
- Minimum overall dimensions = diameter of the duct.
- Upgradeable mechanism offset from the blade.

FIRE PROTECTION RATING - EN 1366-2

- EIS 120 - 500 Pa in concrete wall 110mm and cellular concrete wall 150mm,
- EIS 120 - 500 Pa in concrete tile 150mm and cellular concrete tile 150mm,

FIRE PROTECTION RATING - FRANCE

- 1h30 fire resistance rating on 70 mm gypsum wallboards
- 2h fire resistance rating on 100 mm gypsum wallboards.

INSTALLATION

- Embedded into a vertical concrete wall of 110 mm.
- Embedded into the tile - no fixings or hangings.
- Traditional grouting with mortar.
- Offset mechanism on the wall or tile.

RANGE with a choice of options

The thermal fusible link at 70°C is included.

Description	Code
ISONE EUROPE EIS EM Ø 100 mm*	11043417
ISONE EUROPE EIS EM Ø 125 mm*	11043418
ISONE EUROPE EIS EM Ø 160 mm**	11043419
ISONE EUROPE EIS EM Ø 200 mm	11043420
ISONE EUROPE EIS EM Ø 250 mm	11043421
ISONE EUROPE EIS EM Ø 315 mm	11043422
ISONE EUROPE EIS EM Ø 355 mm	11043386
ISONE EUROPE EIS EM Ø 400 mm	11043387
ISONE EUROPE EIS EM Ø 450 mm	11043388
ISONE EUROPE EIS EM Ø 500 mm	11043389
ISONE EUROPE EIS EM Ø 560 mm	11043390
ISONE EUROPE EIS EM Ø 630 mm	11043391
ISONE EUROPE EIS EM Ø 710 mm	11043392

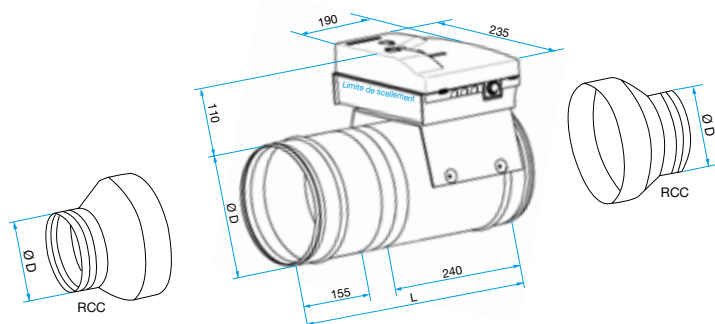
* From a body of Ø 160 mm.

** Beware of high pressure losses at 4 m/s.

ACCESSORIES

- Base, cover and terminal block Kit, see page 10.
- Aeraulic airtight seals kit, see page 10.
- Concentric circular reducers, see page 10.

DIMENSIONS (mm) - WEIGHT (kg)



Ø D	Ø opening	L	Ø Overall	Weight
100	250	537*	160	6.5
125	250	532*	160	6.5
160	250	487*	160	6.5
200	250	427	200	7.5
250	300	427	250	8
315	365	427	315	10
355	405	445	355	11.5
400	450	445	400	15
450	500	445	450	16.5
500	550	445	500	19
560	650/650**	550	670/670	33
630	720/720**	550	750/750	38
710	800/800**	550	750/750	45

* Total length including the 2 adapted RCC (female/male).

** EM rectangular body fitted with rings for connection to a circular ventilation network.

OPTIONS AVAILABLE

Equipment selection	Comments
FTE 70°C	Tripping by thermal fusible link
"FTE" CONTACTS	Contacts for signalling position of the blade
FCU1 for "FTE"	FCU = closed position switch = blade closed DCU = open position switch = blade open
DCU1 for "FTE"	
FCU1 + DCU1 for "FTE"	
TRIP DEVICE	Electrical tripping
VDS 24 ISONE VDS 48 ISONE VM 24 ISONE VM 48 ISONE	Attention, connecting terminal on "VDS or VM or EHOP" Contacts"
CONTACTS "VDS or VM or EHOP"	Contacts for signalling position of the blade
FCU1 "VDS or VM or EHOP"	FCU = closed position switch = blade closed DCU = open position switch = blade open
FCU1 + DCU1 "VDS or VM or EHOP"	
CONTACTS 2	Doubles the position signalling contacts
FCU2 + DCU2"	Can be fixed to "FTE" Contacts or "VDS or VM or EHOP" Contacts
MOTOR	Electrical resetting of the damper by remote control in less than 30 s.
EHOP 30S ISONE	Attention, connecting terminal on "VDS or VM or EHOP" Contacts
PROTECTIVE COVER	Protection against dust (IP42), impacts and sealing.

The blue socket base is supplied when a contact is selected.

ISONE rectangular fire damper

ISONE embedded rectangular fire damper



ISONE EM



ISONE FdP

Advantages

- Authorised for installation in walls and floors.
- Offset wall mounted mechanism for traditional grouting with mortar.
- Double range:
 - FdP = low pressure loss,
 - EM = minimum space requirement.

APPLICATION

- Compartmentalisation of premises.

DESCRIPTION

- Consisting of 2 metal sleeves on both sides of an assembly of refractory material.
- The upgradeable mechanism box is positioned on a sleeve. This box is set back from the blade itself to avoid it being sealed into the partition during installation of the damper.

FIRE PROTECTION RATING - EN 1366-2

- EIS 120 - 500 Pa in concrete wall 110mm and cellular concrete wall 150mm,
- EIS 120 - 500 Pa in concrete tile 150mm and cellular concrete tile 150mm.

FIRE PROTECTION RATING - FRANCE

- 1h30 fire resistance rating on 70mm gypsum wallboards,
- 2h fire resistance rating on 100 mm gypsum wallboards.

INSTALLATION

- Embedded into a concrete wall of 110 mm.
- Embedded through a concrete tile: the installation requires no particular type of fixing or suspension.
- Traditional grouting with mortar.
- The mechanism's box is fitted flush against the wall or the tile.
- The aeraulic connection must not apply any stress on the damper.

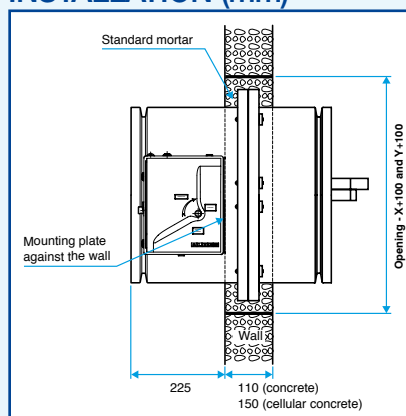
RANGE

- Embedded, rectangular ISONE comprising 2 ranges:
 - Isonne FdP: designed to minimise the pressure losses created by the airflow passing through.
 - Isonne EM: presents a minimum overall dimension.

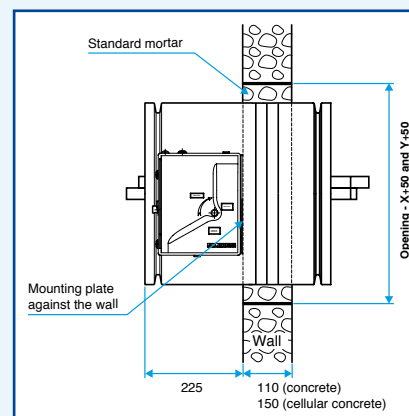
OPTIONS AVAILABLE

- **Mechanism equipment**
Description: see page 4.
- **Battery assembly for ISONE EM dampers**
- **Customisable labelling**
Name of the worksite, of customer, installation area etc.

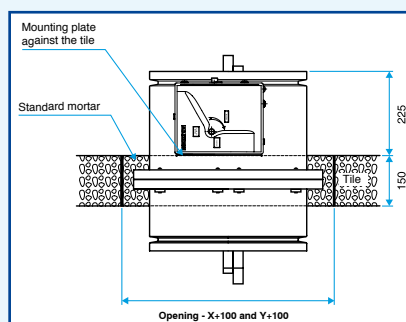
INSTALLATION (mm)



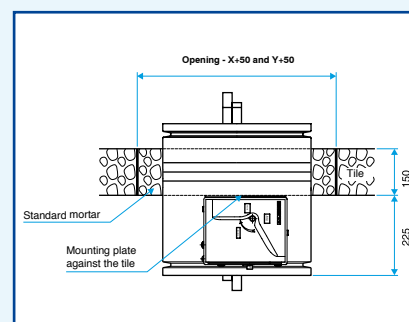
Isonne FdP in a concrete wall



Isonne EM in a concrete wall

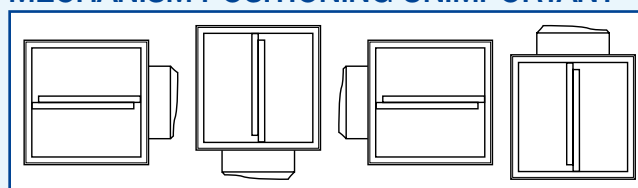


Isonne FdP in through-the-wall position in concrete tile



Isonne EM in through-the-wall position in concrete tile

MECHANISM POSITIONING UNIMPORTANT



ISONE rectangular fire damper

Rectangular ISONE embedded - FdP: Low pressure loss



Did you know?

Tile approved damper: traditional grouting with mortar, with no reinforced hanging.

Advantages

- Reduced pressure losses.
- Embedded into the tile - no fixings or hangings.
- Horizontal or vertical blades.
- Lightweight design.

FIRE PROTECTION RATING - EN 1366-2

- EIS 120 - 500 Pa in concrete wall 110mm and cellular concrete wall 150mm,
- EIS 120 - 500 Pa in concrete tile 150mm and cellular concrete tile 150mm.

FIRE PROTECTION RATING - FRANCE

- 1h30 fire resistance rating on 70 mm gypsum wallboards,
- 2h fire resistance rating on 100 mm gypsum wallboards.

INSTALLATION

- Embedded into a concrete wall.
- Embedded through a concrete tile: the installation requires no particular type of fixing or suspension.
- Traditional grouting with mortar.
- The mechanism's box is fitted flush against the wall or the tile.
- The aeraulic connection must not apply any stress on the damper.

WEIGHT (kg) and RANGE with a choice of options

The thermal fusible link at 70°C is included.

Code	11043342 (FdP - PM)						
Height Y	Width X						
Y	200	250	300	350	400	450	500
200	10	11	12	13	14	15	16
250	11	12	13	14	15	16	-
300	12	13	14	15	17	-	-
350	13	14	15	17	-	-	-
400	14	15	17	-	-	-	-
450	-	16	-	-	-	-	-

Code	11043343 (FdP - MM)															
Height Y	Width X															
Y	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
200	-	-	-	-	-	-	17	18	-	-	-	-	-	-	-	-
250	-	-	-	-	-	17	18	19	20	21	22	-	-	-	-	-
300	-	-	-	-	18	19	20	21	22	23	24	25	26	28	-	-
350	-	-	-	18	19	20	21	23	24	25	26	27	28	30	31	32
400	-	-	18	19	20	22	23	24	25	27	28	29	30	32	33	34
450	-	18	19	20	22	23	24	26	27	28	30	31	32	34	35	-
500	17	19	20	22	23	24	26	27	29	30	31	33	34	36	-	-
550	-	20	21	23	24	26	27	29	30	32	33	35	36	-	-	-
600	-	21	23	24	26	27	29	30	32	34	35	37	-	-	-	-
650	-	-	24	25	27	29	30	32	34	35	37	-	-	-	-	-
700	-	-	25	27	28	30	32	34	35	37	-	-	-	-	-	-
750	-	-	-	28	30	31	33	35	37	-	-	-	-	-	-	-

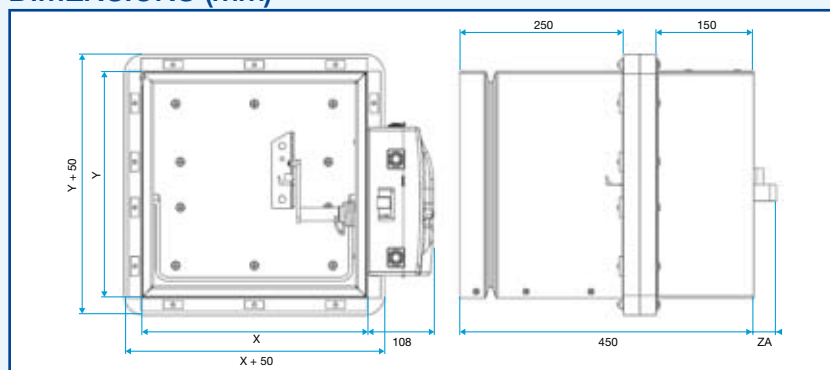
OPTIONS AVAILABLE

- Identical to circular ISONE p. 11.

ACCESSORIES

- Base, cover and terminal block Kit, see page 10.

DIMENSIONS (mm)



ZA: Angular displacement of the blade

Y	200	250	300	350	400	450	500	550	600	650	700	750
ZA	0	0	0	0	16	42	66	92	116	142	166	190

SONE rectangular

Tile approved damper: traditional grouting with mortar, with no reinforced hanging.

- Reduced pressure losses.
- Embedded into the tile - no fixings or hangings.
- Horizontal or vertical blades.
- Lightweight design.

- EIS 120 - 500 Pa in concrete wall 110 mm and cellular concrete wall 150mm,
- EIS 120 - 500 Pa in concrete tile 150mm and cellular concrete tile 150mm.

- Embedded into a concrete wall.
- Embedded through a concrete tile - no fixings or hangings.
- Traditional grouting with mortar.
- Offset mechanism on the wall or tile.
- Dimensions of openings required:
(X + 50) x (Y + 50) mm.

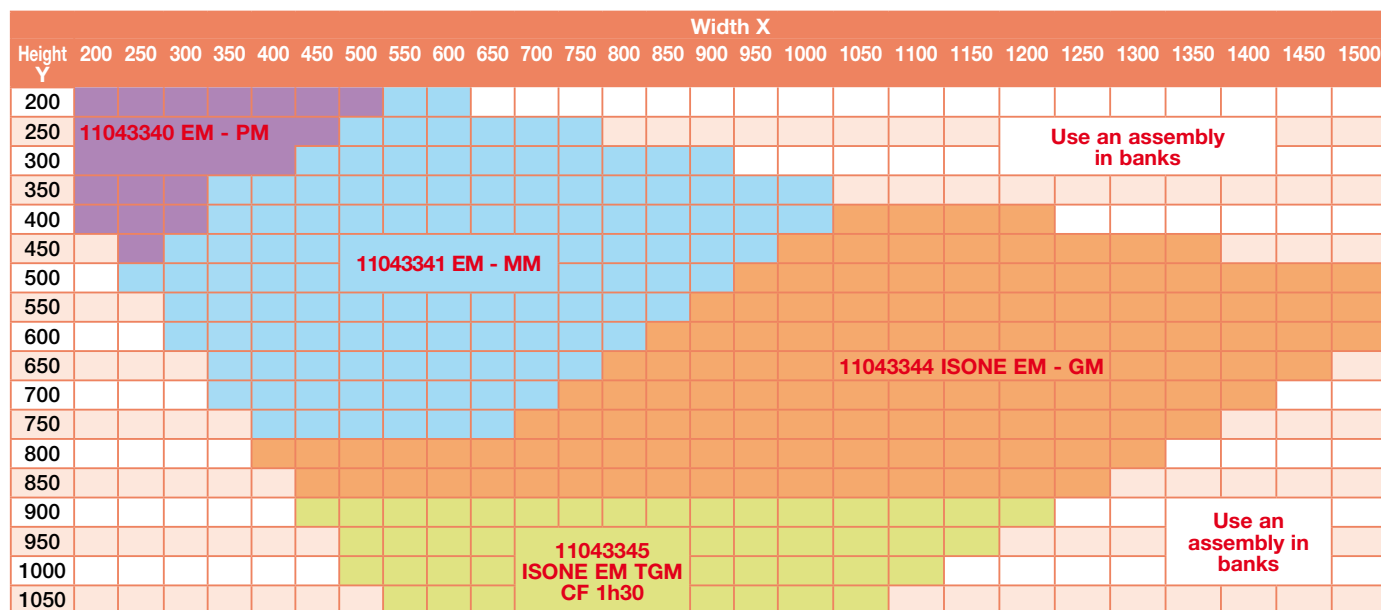
Side view

Front view

Dimensions shown in the drawings:

- Side view: Overall width X, overall height Y, and a 108mm offset for the handle assembly.
- Front view: Total width 450mm, handle width 150mm, and panel width 260mm. Mounting points are labeled ZA and ZB.

Y	200	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050
ZA	0	0	0	0	0	20	45	68	93	116	141	164	195	220	245	270	295	320
ZB	0	0	0	0	0	0	0	0	0	13	41	64	95	120	145	170	195	220



ISONE rectangular fire damper

ISONE rectangular embedded - EM: minimum space requirement



Did you know?

Tile approved damper: traditional grouting with mortar, with no reinforced hanging.

Advantages

- Minimum space requirement and opening.
- Embedded into the tile - no fixings or hangings.
- Horizontal or vertical axis of the blade (except 110344 and 110433345).
- Simplified installation in banks with optimised passage of air.

WEIGHT (kg) and RANGE with a choice of options

The thermal fusible link at 70°C is included.

Code Height Y	11043340 (EM - PM)						
	Width X						
	200	250	300	350	400	450	500
200	10	10	11	12	13	14	15
250	10	11	12	13	14	15	-
300	11	12	13	14	15	-	-
350	12	13	14	15	-	-	-
400	13	14	15	-	-	-	-
450	-	15	-	-	-	-	-

Code Height Y	11043341 (EM - MM)															
	Width X															
	250	300	350	400	450	500	550	600	650	700	750	800	850	900	950	1000
200	-	-	-	-	-	-	16	17	-	-	-	-	-	-	-	-
250	-	-	-	-	-	16	17	18	19	20	21	-	-	-	-	-
300	-	-	-	-	16	17	18	19	20	21	23	24	25	26	-	-
350	-	-	-	17	18	19	20	21	22	23	24	25	26	28	29	30
400	-	-	17	18	19	20	21	22	24	25	26	27	28	30	31	32
450	-	16	18	19	20	21	23	24	25	26	28	29	30	31	33	-
500	16	17	19	20	21	23	24	25	27	28	29	31	32	33	-	-
550	-	18	20	21	23	24	26	27	28	30	31	33	34	-	-	-
600	-	19	21	22	24	25	27	28	30	31	33	34	-	-	-	-
650	-	-	22	24	25	27	28	30	32	33	35	-	-	-	-	-
700	-	-	23	25	26	28	30	31	33	35	-	-	-	-	-	-
750	-	-	-	26	28	29	31	33	35	-	-	-	-	-	-	-

Code Height Y	11043344 (EM - GM)																			
	Width X																			
	400	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100	1150	1200	1250	1300	1350
350	-	-	-	-	-	-	-	-	-	-	-	-	33	-	-	-	-	-	-	-
400	-	-	-	-	-	-	-	-	-	-	-	-	35	36	37	38	-	-	-	-
450	-	-	-	-	-	-	-	-	-	-	-	-	36	37	38	40	41	42	43	44
500	-	-	-	-	-	-	-	-	-	-	-	37	38	39	41	42	43	44	45	46
550	-	-	-	-	-	-	-	-	-	-	37	39	40	42	43	44	46	47	47	48
600	-	-	-	-	-	-	-	-	-	38	39	41	42	44	45	47	48	50	50	51
650	-	-	-	-	-	-	-	-	38	40	41	43	44	46	48	49	50	52	52	53
700	-	-	-	-	-	-	-	38	40	42	43	45	47	48	50	52	53	55	54	55
750	-	-	-	-	-	-	38	40	42	43	45	47	49	51	53	55	56	56	56	57
800	29	31	33	34	36	38	40	42	44	45	47	49	51	53	55	57	58	58	-	-
850	-	32	34	36	38	40	42	43	45	47	49	51	53	55	57	59	60	62	-	-

Code Height Y	11043345 (EM - TGM)													
	Width X													
	450	500	550	600	650	700	750	800	850	900	950	1000	1050	1100
900	25	27	29	31	33	35	37	39	41	43	45	47	49	51
950	-	28	30	32	34	36	38	40	42	44	46	48	50	52
1000	-	29	31	33	35	37	39	41	43	45	47	49	51	53
1050	-	-	32	34	36	38	40	42	44	46	48	50	52	-

OPTIONS AVAILABLE

- Identical to circular ISONE p. 11.
- Battery assembly p. 18.

ACCESSORIES

- Base, cover and terminal block Kit, see page 10.

ISONE with a BF/BLF Mechanism

ISONE circular fire damper with a BF/BLF Mechanism



DESCRIPTION

- All ISONE fire dampers can house the BF/BLF mechanism equipped with its 72° fuse (BAE 72), and a closed (FC) contact and open (DC) contact.

FIRE PROTECTION RATING - EN 1366-2

- EIS 120 - 500 Pa in concrete wall 110mm and cellular concrete wall 150mm,
- EIS 120 - 500 Pa in concrete tile 150mm and cellular concrete tile 150mm.

INSTALLATION

- Identical to ISONE with an Aldes mechanism.

RANGE with a choice of options

- ISONE Ø FdP: low pressure loss

Description	Code
ISONEUROP-EIS-D100-FdP-M	11043460
ISONEUROP-EIS-D125-FdP-M	11043461
ISONEUROP-EIS-D160-FdP-M	11043462
ISONEUROP-EIS-D200-FdP-M	11043463
ISONEUROP-EIS-D250-FdP-M	11043464
ISONEUROP-EIS-D315-FdP-M	11043465

- ISONE Ø EM: minimum space requirement

Description	Code
ISONEUROP-EIS-D100-EM-M	11043470
ISONEUROP-EIS-D125-EM-M	11043471
ISONEUROP-EIS-D160-EM-M	11043472
ISONEUROP-EIS-D200-EM-M	11043473
ISONEUROP-EIS-D250-EM-M	11043474
ISONEUROP-EIS-D315-EM-M	11043475
ISONEUROP-D355 EM-M	11043476
ISONEUROP-D400 EM-M	11043477
ISONEUROP-D450 EM-M	11043478
ISONEUROP-D500 EM-M	11043479
ISONEUROP-RECT-D560 EM-M	11043480
ISONEUROP-RECT-D630 EM-M	11043481
ISONEUROP-RECT-D710 EM-M	11043482

OPTIONS AVAILABLE

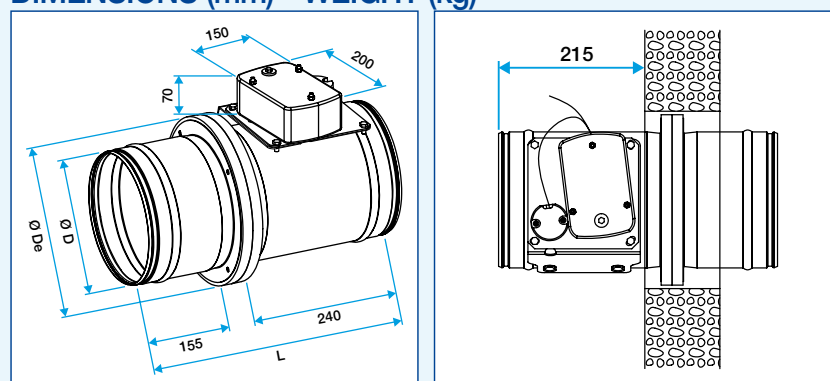
Description	Code
MECHANISM BLF24V-BAE72-FC-DC	OPT43326
MECHANISM BLF 230V-BAE72-FC-DC	OPT43327
MECHANISM BF 24V-BAE72-FC-DC	OPT43328
MECHANISM BF 230V-BAE72-FC-DC	OPT43329

- All mechanisms are equipped with:
- FC/DC signalling contacts (open/closed position),
 - A 72° fuse.

The BLF mechanisms equip ISONE Ø and □ PM and MM dampers, the BF mechanisms equip ISONE

□ GM and TGM dampers.

DIMENSIONS (mm) - WEIGHT (kg)



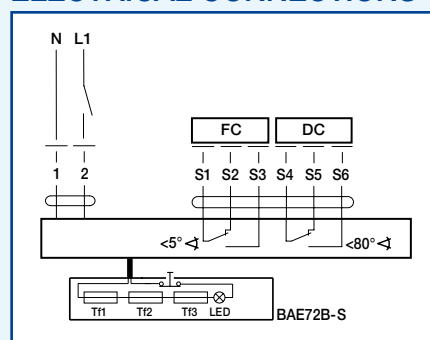
Dimensions Ø D, Ø D_e, L identical to Isones with an Aldes mechanism.

TECHNICAL DETAILS

4 mechanism models	BLF		BF	
	24 V	230 V	24 V	230 V
Rated Voltage	AC 24 V 50 / 60 Hz - DC 24 V	AC 230 V 50 / 60 Hz	AC 24 V 50 / 60 Hz - DC 24 V	AC 230 V 50 / 60 Hz
Consumption (resetting)	5 W	6 W	7 W	8 W
Permanent consumption (excl. resetting)	2.5 W	3 W	2 W	3 W
Resetting time	40 to 75 s	40 to 75 s	140 s	140 s
Cable length:	1 m	1 m	1 m	1 m
- motor	2 x 0.75 mm ²	2 x 0.75 mm ²	2 x 0.75 mm ²	2 x 0.75 mm ²
- FC/DC contacts	6 x 0.75 mm ²	6 x 0.75 mm ²	6 x 0.75 mm ²	6 x 0.75 mm ²
Weight	1.6 kg	1.7 kg	2.8 kg	3.1 kg

- Degree of protection: IP 54.
- Temperature in use: -40° to +50° C

ELECTRICAL CONNECTIONS



ISONE with a BF/BLF Mechanism

ISONE rectangular fire damper with a BF/BLF Mechanism



RANGE with a choice of options

Description	Code
ISONEUROP RECT EM PM-M	11043450
ISONEUROP RECT EM MM-M	11043451
ISONEUROP RECT FDP PM-M	11043452
ISONEUROP RECT FDP MM-M	11043453
ISONEUROP RECT EM GM-M	11043454
ISONEUROP RECT EM TGM-M	11043455

OPTIONS AVAILABLE

Description	Code
MECANISME BLF24V-BAE72-FC-DC	OPT43326
MECANISME BLF 230V-BAE72-FC-DC	OPT43327
MECANISME BF 24V-BAE72-FC-DC	OPT43328
MECANISME BF 230V-BAE72-FC-DC	OPT43329

All mechanisms are equipped with:

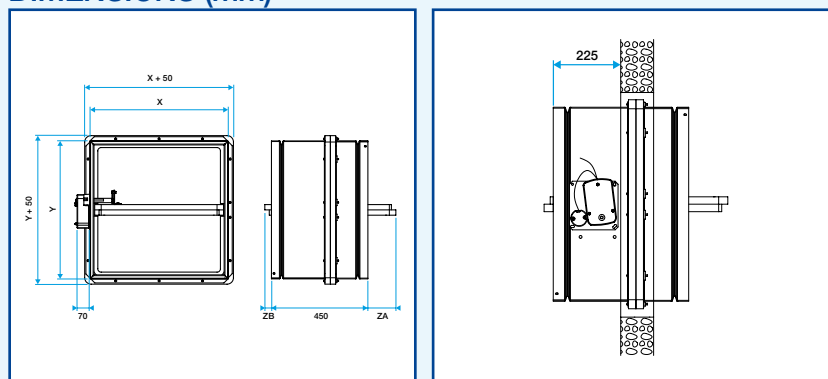
- FC/DC signalling contacts (open/closed position),
- A 72° fuse.

The BLF mechanisms equip ISONE and

☑ PM and MM dampers, the BF mechanisms equip ISONE

☑ GM and TGM dampers.

DIMENSIONS (mm)



Dimensions identical to ISONE dampers with an Aldes mechanism.

RANGE with a choice of options

Height Y	Width X																			
200																				
250	11043450 ISONE EM																			
300	11043452 ISONE FdP																			
350																				
400																				
450																				
500																				
550																				
600																				
650																				
700																				
750																				
800																				
850																				
900																				
950																				
1000																				
1050																				

11043451 ISONE EM - MM
11043453 ISONE FdP - MM

11043454 ISONE EM - GM

11043455 ISONE EM - TGM

Use an assembly in banks

Use an assembly in banks

ISONE rectangular fire damper

Installing banks of ISONE EM dampers



Bank of Isonne EM

DESCRIPTION

- Battery assembly in banks allows for the installation of rectangular fire dampers on large dimension ductworks.
- There are three possible assemblies:
 - 2 juxtapositioned dampers - screwed together along their vertical edge
 - 2 superimposed dampers - screwed together along the width
 - 4 dampers (2 x 2)
- A self-adhesive swelling seal is fitted between the dampers' refractory parts.

INSTALLATION

- Battery assembly in banks of Isonne EM dampers affords maximum air passage and therefore minimum pressure loss.
- The fitting of banks of rectangular ISONE EM dampers is very simple.
- The metal sleeves are fixed to each other using self-drilling screws, a self-adhesive swelling seal is to be fitted between the refractory damper parts.
- For connection to an aeruic ductwork system by the addition of flanges, it may be necessary to notch the sleeves by a few centimetres to be able to position the flanges.
- The grouting uses traditional mortar.

CHOICE OF DAMPERS

- The ISONE EM rectangular dampers used in bank assemblies are of standard dimensions.
- Selection example:
Dimension of the duct: 1550 x 500 mm.
Choice of dampers: 2 juxtapositioned dampers of dimensions,
one of 800 x 500 mm, the other of 750 x 500 mm.

ACCESSORIES

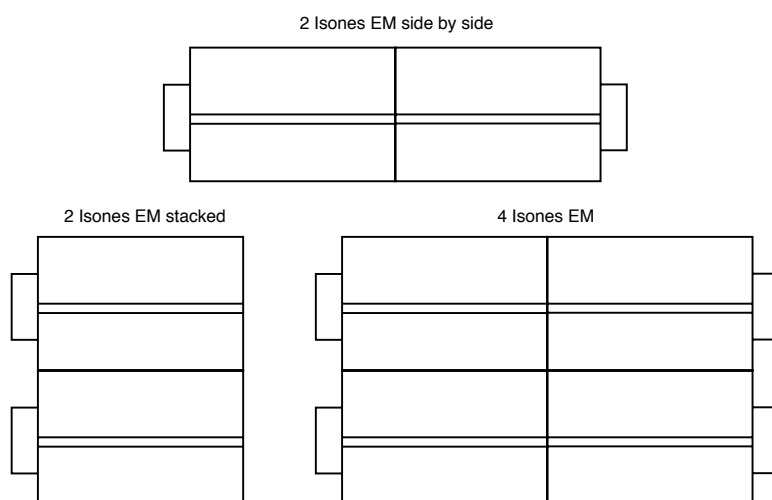
- Self-adhesive swelling seal for use when assembling banks of ISONE EM dampers.

Description	Code
Rolls of self-adhesive swelling seal L x l x th = 20 m x 40 mm x 2 mm	11045394

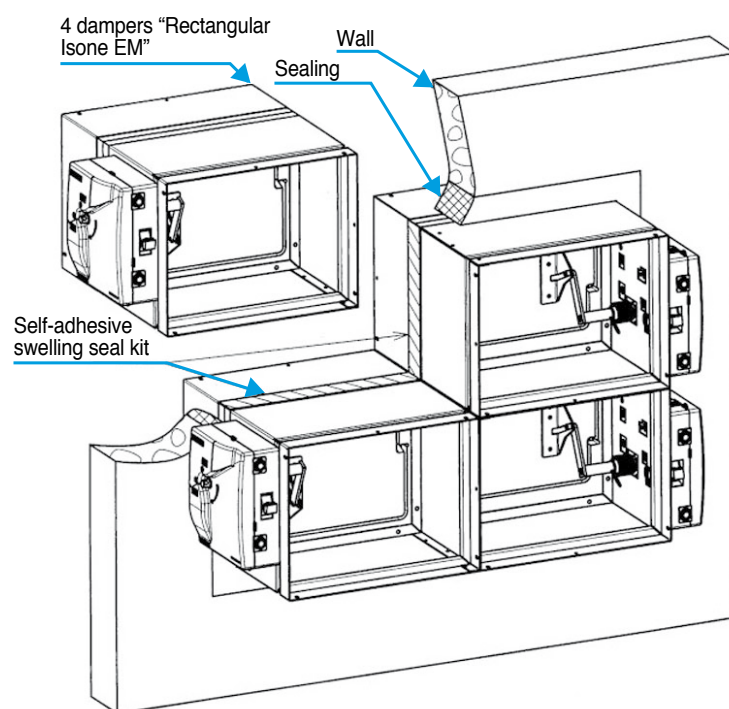
Advantages

- Economic
- Simple to fit in banks thanks to the metallic body of the damper.
- Optimal air passage to minimise pressure losses.
- Lightweight design.

POSSIBLE ASSEMBLIES



INSTALLATION



Pressure losses

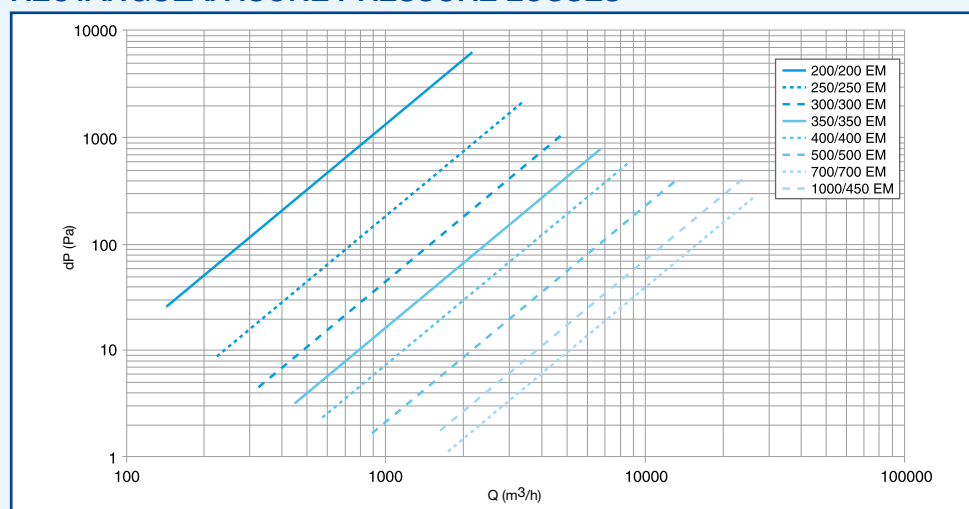
CIRCULAR ISONE PRESSURE LOSSES

Ductwork characteristics			ISONE data	
Ø duct (mm)	Airflow (m³/h)	Speed in duct (m/s)	ISONE recommended	Pressure loss (Pa)
100	110	4	FdP / EM	8 / 48
125	175	4	FdP	21
160	290	4	FdP	58
200	450	4	FdP	30
250	710	4	FdP	17
315	1120	4	FdP / EM	12 / 39 t
355	1450	4	EM	44
400	1800	4	EM	30
450	2300	4	EM	31
500	2850	4	EM	24

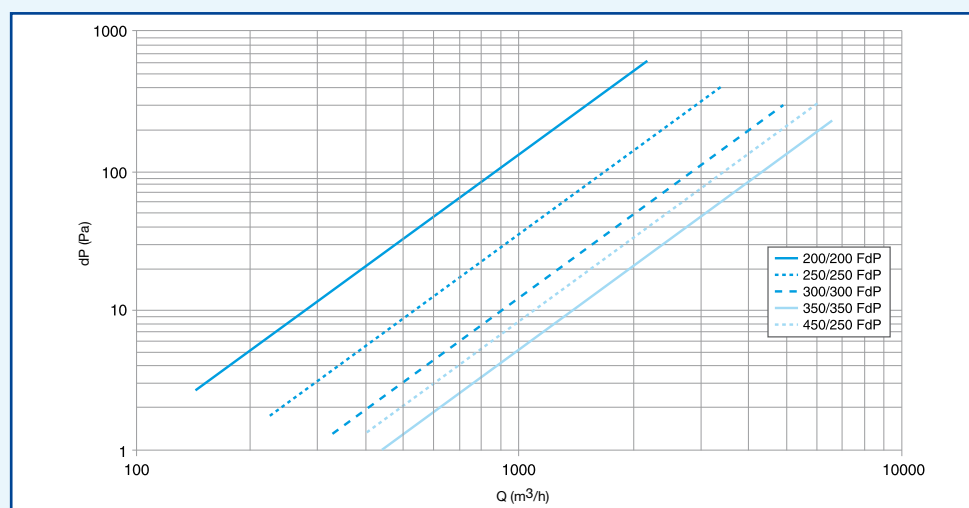
Ø duct (mm)	ΔP ISONE FdP	ΔP ISONE EM
100	$(Q/38)^2$	$(Q/15,8)^2$
125	$(Q/38)^2$	$(Q/15,8)^2$
160	$(Q/38)^2$	$(Q/15,8)^2$
200	$(Q/82)^2$	$(Q/33)^2$
250	$(Q/171)^2$	$(Q/94)^2$
315	$(Q/325)^2$	$(Q/180)^2$
355	-	$(Q/217)^2$
400	-	$(Q/326,5)^2$
450	-	$(Q/409,3)^2$
500	-	$(Q/573,5)^2$

N.B.: The above formulae give pressure losses in Pa for airflow Q in m³/h.

RECTANGULAR ISONE PRESSURE LOSSES



IsonE EM



IsonE FdP

www.aldes.fr

