

Gate type smoke  
exhaust damper  
**OPTONE**

Installation instructions

**EN**

**CE**  
**1812**



OPTONE single leaf



OPTONE double leaf



[www.aldes.com](http://www.aldes.com)



# STANDARDS OBTAINED

NF 264 - FIRE DAMPERS  
AND SMOKE EXHAUST DAMPERS - Actuated Safety Devices



## AFNOR Certification

11 rue Francis de Pressensé  
93571 La Plaine Saint-Denis Cedex  
Tel.: +33(0)1 41 62 80 00 - Fax: +33 (01) 49 17 90 00  
Websites: <http://www.afnor.org>  
<http://www.marque-nf.com>  
E-mail : [certification@afnor.org](mailto:certification@afnor.org)

This marking certifies:

- compliance with standards NF-S61937-1 and NF-S61937-10 "Actuated Safety Devices - fire damper",
- compliance with administrative decision of 22 March 2004 amended 14 March 2011 on fire protection ratings,
- the values of the properties set out in this notice.



## EFFECTIS France

Route de l'orme des merisiers  
Espace technologique  
F-91193 SAINT-AUBIN  
Tel.: +33 (0)1 60 13 83 80  
Fax: +33 (0)1 60 13 70 80  
Email: [certification@effectis.com](mailto:certification@effectis.com)

This marking **CE** refers to the following references:

- Construction Products Directive (Council Directive 89/106/EEC) (CPD) amended by Council Directive 93/68/EEC;
- Recommendation concerning standard EN 12101-8:2011 published in the Official Bulletin of the French Republic on 6 January 2012;
- Administrative decision of 29 December 2011 applying this decree to fire dampers (published in the Official Bulletin of the French Republic);
- Standard EN 12101-8:2011 - Ventilation for buildings - Fire dampers.

## 1 NORMATIVE DESIGNATION OF PRODUCT

Non-modular, remote-controlled smoke exhaust damper for shunt or collector:

**OPTONE "+Grille" - 1V = single-leaf damper EI 90 S**

**OPTONE "+Grille" - 2V = double-leaf damper EI 90 S (For H > 1000 mm = EI 60 S)**

**OPTONE "Classic" - 1V = single-leaf damper EI 90 S**

**OPTONE "Classic" - 2V = double-leaf damper EI 90 S (For H > 1000 mm = EI 60 S)**

**OPTONE "Classic" - 2H/1V = single-leaf damper EI 120 S**

**OPTONE "Classic" - 2H/2V = double-leaf damper EI 120 S**

## 2 LABEL MARKING CODE

CF = Fire damper

SL = Free passage

Auto = auto controlled

E. Tele. = remote control input

EI = degree of resistance

Tele = remote-controlled

VCC = Voltage, direct current

E = current emission / R = current break

VCA = Voltage, alternating current

## 3 DIMENSIONS AND FREE AIR PASSAGE

L and H are nominal dimensions in mm (see diagram no. 2, page 5). The values read in this table are free air passage in dm<sup>2</sup>.

**OPTONE "+Grille" - single-leaf (1V) code 11044410**

**OPTONE "Classic" - single-leaf (1V) code 11044420 / OPTONE "Classic" - single-leaf (2H/1V) code 11044430**

Free air passage (dm <sup>2</sup> )		L = width of reservation for mounting-frame fixed without adhesive mortar								
		300	350	400	450	500	550	600	650	700
H = Height of opening mounting frame fixed without adhesive mortar	300	4.5	5.7	6.9	8.1	9.4	10.6	11.8	13	14.2
	350	5.7	7.2	8.6	10.1	11.6	13	14.5	16	17.4
	400	6.9	8.6	10.4	12.1	13.8	15.5	17.2	18.9	20.6
	450	8.1	10.1	12.1	14	16	18	19.9	21.9	23.9
	500	9.4	11.6	13.8	16	18.2	20.4	22.6	24.9	27.1
	550	10.6	13	15.5	18	20.4	22.9	25.4	27.8	30.3
	600	11.8	14.5	17.2	19.9	22.6	25.4	28.1	30.8	33.5
	650	13	16	18.9	21.9	24.9	27.8	30.8	33.8	36.7
	700	14.2	17.4	20.6	23.9	27.1	30.3	33.5	36.7	39.9
	750	15.4	18.9	22.4	25.8	29.3	32.8	36.2	39.7	43.1
	800	16.6	20.4	24.1	27.8	31.5	35.2	38.9	42.6	46.4
	850	17.9	21.8	25.8	29.8	33.7	37.7	41.6	45.6	49.6
	900	19.1	23.3	27.5	31.7	35.9	40.1	44.4	48.6	52.8
	800	16.6	20.4	24.1	27.8	31.5	35.2	38.9	42.6	46.4
850	17.9	21.8	25.8	29.8	33.7	37.7	41.6	45.6	49.6	
900	19.1	23.3	27.5	31.7	35.9	40.1	44.4	48.6	52.8	

### 3 DIMENSIONS AND FREE AIR PASSAGE

OPTONE "+ Grill" double-leaf (V2) code 11044411

OPTONE "Classic" double-leaf (V2) code 11044421 / OPTONE "Classic" - 2H/ double-leaf (V2) code 11044431 (Max Height = 1000)

Free air passage (dm <sup>2</sup> )		L = width of reservation for mounting-frame fixed without adhesive mortar											
		450	500	550	600	650	700	750	800	850	900	950	1000
H = Height of opening mounting frame fixed without adhesive mortar	300	7.7	8.9	10.1	11.3	12.5	13.7	15	16.2	17.4	18.6	19.8	21
	350	9.5	11	12.5	13.9	15.4	16.9	18.3	19.8	21.3	22.7	24.2	25.7
	400	11.4	13.1	14.8	16.6	18.3	20	21.7	23.4	25.1	26.8	28.6	30.3
	450	13.3	15.2	17.2	19.2	21.1	23.1	25.1	27	29	31	32.9	34.9
	500	15.2	17.4	19.6	21.8	24	26.2	28.4	30.7	32.9	35.1	37.3	39.5
	550	17	19.5	22	24.4	26.9	29.3	31.8	34.3	36.7	39.2	41.7	44.1
	600	18.9	21.6	24.3	27	29.8	32.5	35.2	37.9	40.6	43.3	46	48.8
	650	20.8	23.7	26.7	29.7	32.6	35.6	38.6	41.5	44.5	47.4	50.4	53.4
	700	22.6	25.8	29.1	32.3	35.5	38.7	41.9	45.1	48.4	51.6	54.8	58
	750	24.5	28	31.4	34.9	38.4	41.8	45.3	48.8	52.2	55.7	59.2	62.6
	800	26.4	30.1	33.8	37.5	41.2	44.9	48.7	52.4	56.1	59.8	63.5	67.2
	850	28.2	32.2	36.2	40.1	44.1	48.1	52	56	60	63.9	67.9	71.9
900	30.1	34.3	38.5	42.8	47	51.2	55.4	59.6	63.8	68	72.3	76.5	
950	32	36.4	40.9	45.4	49.8	54.3	58.8	63.2	67.7	72.2	76.6	81.1	
1000	33.9	38.6	43.3	48	52.7	57.4	62.1	66.9	71.6	76.3	81	85.7	
1050	35.7	40.7	45.7	50.6	55.6	60.5	65.5	70.5	75.4	80.4	85.4	90.3	
1100	37.6	42.8	48	53.2	58.5	63.7	68.9	74.1	79.3	84.5	89.7	95	
1150	39.5	44.9	50.4	55.9	61.3	66.8	72.3	77.7	83.2	88.6	94.1	99.6	
1200	41.3	47	52.8	58.5	64.2	69.9	75.6	81.3	87.1	92.8	98.5	104.2	

### 4 DETAILED CHARACTERISTICS

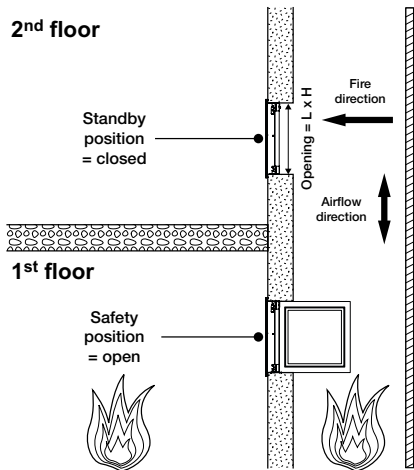
- Activation by electrical remote control powered by intrinsic energy:
  - VDS 24 V DC ↔ Uc voltage = 24 V DC / Power = 3.5 W / Current emission
  - VM 24 V DC ↔ Uc voltage = 24 V DC / Power = 1.5 W / Current break
  - VDS 48 V DC ↔ Uc voltage = 48 V DC / Power = 3.5 W / Current emission
  - VM 48 V DC ↔ Uc voltage = 48 V DC / Power = 1.5 W / Current break
- Reset after cold trip, either manually or by Locktone electrical motor (voltage 24/48 V DC or V AC, maximum intensity = 2.5 A, cycle time < 30 sec).
- Safety position contact (FCU1) mandatory for shunt ducts.
- Standby position contact (DCU1) mandatory for shunt ducts.
- Built-in level 0 or level 1 manual control for opening.
- Possibility of supplementary position contacts:
  - FCU2 = dual-pole closed position contact,
  - DCU2 = dual-pole open position contact.
- After a 300-cycle endurance test, the OPTONE smoke exhaust damper presents the initial characteristics.



# OPERATION

## 1 DAMPER OPENING / CLOSURE

Diagram no. 1



### Damper opening:

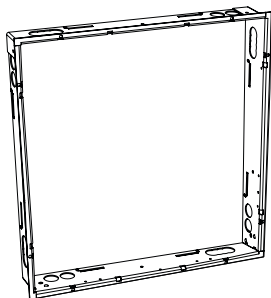
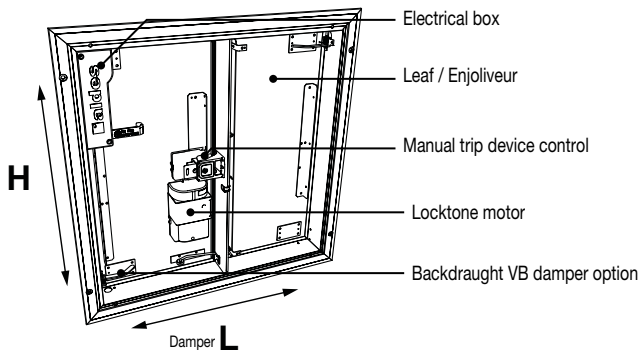
- Remote controlled: when an electrical command is issued, the trip device is unlocked and releases the damper to open;
- Manual: Actuate the trip device manual control (on the left or right - see diagram no. 2, page 5), using a 6 mm square socket key or a size 6 flat-head screwdriver.

### Manual damper closure

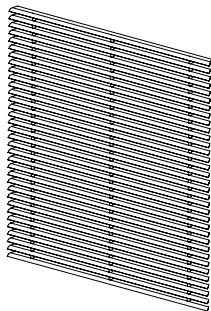
- Use the trip device handle to reset each leaf. When approaching the bolt lock, push the leaf hard to ensure it locks into place.
- For two leaves, use the ring on the slave leaf and proceed as follows:
  - Hold the slave leaf closed manually,
  - Close and lock the master leaf as per point 1.

## 2 ELEMENTS OF THE OPTONE SMOKE EXHAUST GATE DAMPER

Diagram no. 2



Mounting frame



Vane core



# INSTALLATION

## 1 ASSEMBLY OF MOUNTING FRAME



- This damper should be handled with care.
- The installation of the mounting frame in the smoke exhaust duct must respect the fire resistance test conditions described in the classification reports provided with CE certificates.
- The position of the mounting frame must respect the requirements of technical instruction no. 246. The Smoke exhaust system design software, Conceptor, may be of assistance.

To select the right mounting frame, only the nominal L and H dimensions are needed (see diagram no. 2, page 5).

The same mounting-frame can be used for both the **OPTONE "+ Grille"** model and the **OPTONE "Classic"** model, in their single-leaf or double-leaf versions.

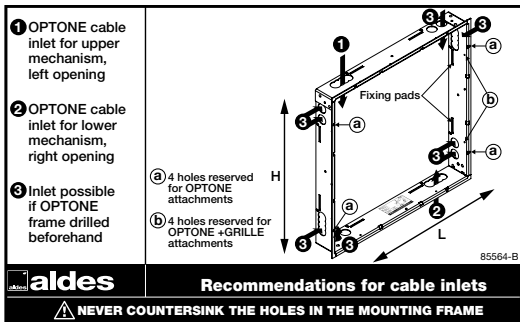
Position the mounting frame with the label at the bottom (see diagram no. 3, page 6).

The OPTONE mounting frame can be screwed in place or sealed in the duct with mortar.

- To seal in place using mortar, unfold the four anchor tabs before positioning the mounting-frame in the duct.
- To attach with screws, use any holes other than those marked a or b (see diagram no. 3, page 6).

To pass electrical cables, see the label (affixed to the mounting frame).

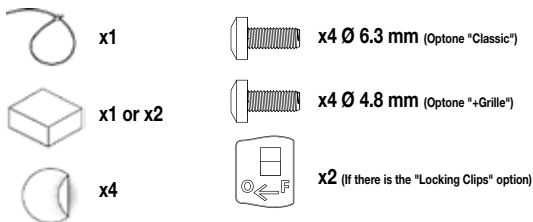
Diagram no. 3



## 2 FITTING THE DAMPER IN ITS MOUNTING FRAME

Parts supplied

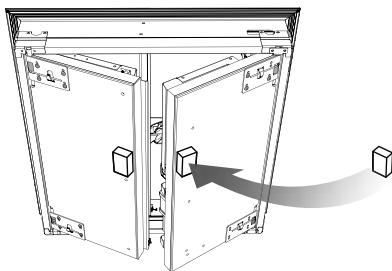
Diagram no. 4



**Fitting the anti-vibration mountings:**

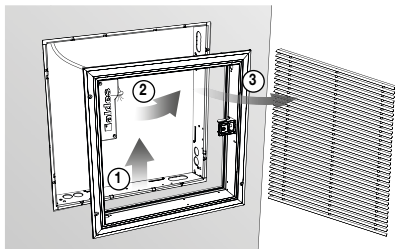
Prior to bonding clean the mating surface of the anti-vibration mounting studs.

Diagram no. 5



## 3 REMOVING THE VANE CORE ON THE OPTONE + GRILLE

Diagram no. 6

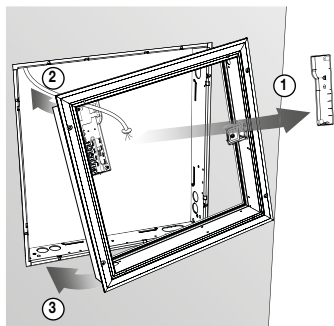


- Identify the clips at the ends of the tubes.
- Push the core to compress the clips until the tubes are freed on the opposite side to the clips.



## 4 INSTALLING THE DAMPER IN ITS MOUNTING FRAME

Diagram no. 7



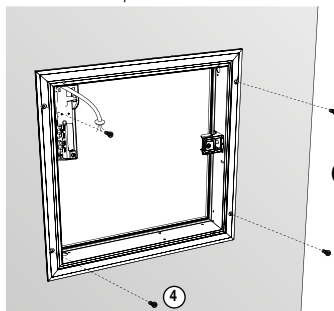
1) Open the electrical box and pass the cables through the foam lining the box.

2) Position the top of the damper against the mounting frame, pulling the cord.

3) Push on the damper to fit it snugly in the mounting frame.

Diagram no. 8

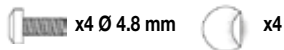
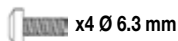
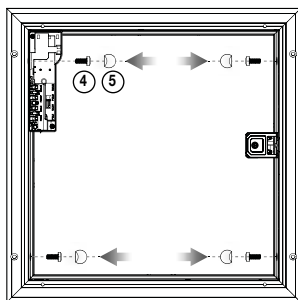
Optone "Classic"



OR

Diagram no. 9

OPTONE "+Grille"



4) Insert the 4 screws in the slots in the upright members of the aluminium frame, a few mm of slack help assembly (lift the damper with one hand to simplify fixation).

5) Affix the stickers over them to offer perfect leak tightness and aesthetic finish.

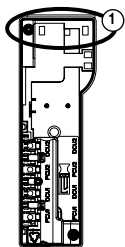


# ACTIVATION: Electrical connections

## 1 CONNECTING THE ELECTRICAL BOX

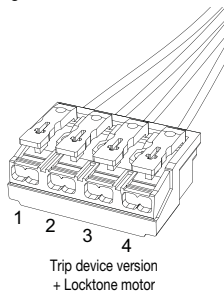
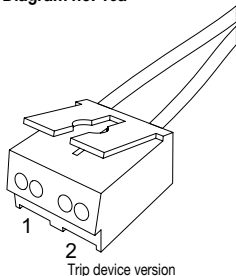
- Unscrew the cover of the electrical box.
- Introduce the cable into the box, piercing the foam.
- Insert the clamp collar through the holes in box 1.
- Tighten the cable.
- Make the next connection in respect of the polarities:

Diagram no. 10a



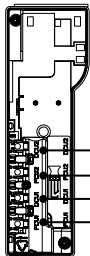
- 1 = "-" trip device (white)
- 2 = "+" trip device (brown)
- 3 = "+" motor (green)
- 4 = "-" motor (yellow)

Diagram no. 10b



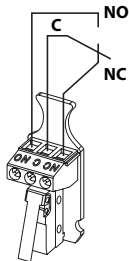
## 2 CONNECTION OF SIGNALLING CONTACTS

Diagram no. 11a



- Open position contact no. 2 DCU2
- Closed position contact no. 2 FCU2
- Open position contact no. 1 DCU1
- Closed position contact no. 1 FCU1

Diagram no. 11b

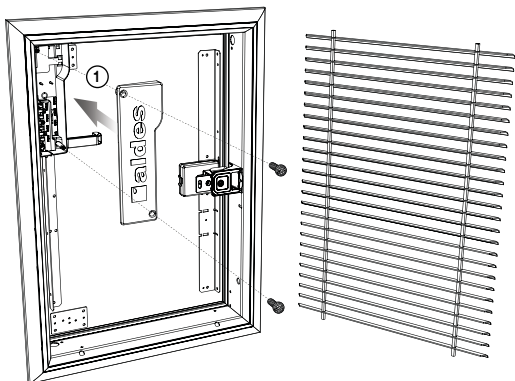


### 3 FINALISATION

1) Close the electrical box.

Diagram no. 12

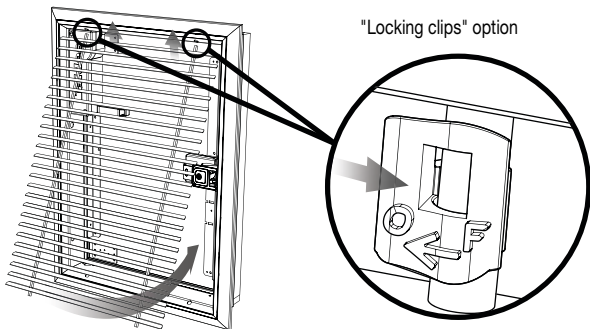
Optone "+Grille"



2) Reposition the vane core in "Optone + Grille" mode (no clips if option).

Diagram no. 13

"Locking clips" option





## RECOMMENDATIONS

The open and closed position contacts (FC1 and DCU1) are mandatory for assembly on a shunt.

### **The remote control lines must comply with NF-S-61932, in particular:**

- the conductors must have a cross-section equal to or greater than 1 mm<sup>2</sup> for single-conductor cables and 1.5 mm<sup>2</sup> for multi-conductor cables.
- cat. C2 cable as minimum.

### **Electrical details of LOCTONE reset motor:**

- power supply voltage: between 24 and 48 V DC or V AC
- maximum current consumption = 2.5 A

The power supply to contacts FCU2 and DCU2 must feature Very Low Safety Voltage.

Avoid splashing paint, cement or gravel, etc.



- Control the start time of the smoke extractors to prevent the dampers opening when a smoke exhaust duct is under negative pressure or overpressure (see fire safety standards).
- Prior to use, this equipment should be stored in a dry enclosed space, not subject to freezing temperatures.
- Items should not be stacked higher than originally specified by the manufacturing factory.
- They should be carefully arranged and handled to prevent damage to mechanisms or moving parts, and to avoid deformations of the device body due to excess loads.

### **MAINTENANCE CHECKS**

Standard NF-S-61933 imposes periodical operational tests on smoke exhaust dampers.

ALDES  
20 boulevard Joliot Curie  
69694 Vénissieux Cedex FRANCE  
Tel: +33 (0)4 78 77 15 15  
Fax: +33 (0)4 78 76 15 97  
[www.aldes.fr](http://www.aldes.fr)

