

KOOLAIR

series

SMLD

Smoke Evacuation Damper

ISO 9001

BUREAU VERITAS
Certification

Sistema de Gestión



www.koolair.com



SMLD Smoke Evacuation Damper



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SMLD Smoke Evacuation Damper



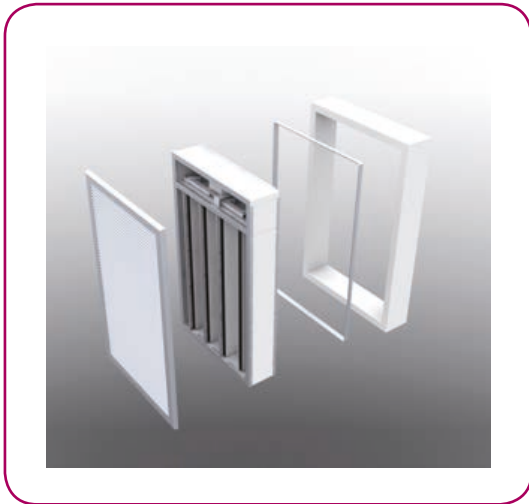
Description

Multi-blade smoke damper, suitable for use in low profile ductwork, approved in accordance with test standard UNE EN 1366-10 and classified according to EN 13501-4: EI 120 (ved i↔o) S 1500 AA multi.

Designed according to EN 12101-8 specifications. Structure made from refractory material with an external cover made from sheet steel and blades made from refractory material. Installed vertically within the wall, with a vertical smoke evacuation duct, with the option of a mounting assembly frame previously fixed to the duct.

Includes an RPK protective and decorative grille, specific for smoke evacuation and manufactured with anodised aluminium profiles, fitted to the front side of the damper, i.e. the side on display in the building.

Can be used for smoke extraction and air intake (air flow in either direction).



Operation

The operating mechanism/s are incorporated in the upper part of the damper where they are protected from smoke and high temperatures.

- Automatic operation (closing) and resetting (opening) by means of a servomotor (CE Marking):

SMLD smoke extract dampers are operated and reset by means of a servomotor with a supply voltage of 24 V AC/DC (model BLE24) or 230 V AC (model BLE230).

These motors include start and end of stroke limit switches to monitor the opening/closing status of the damper.

Other operating options:

- Operation (opening) by means of electric coil with manual reset (closing) (CE marking). Optional limit switch/es:

- 24V DC electric shunt release coil
- 48V DC electric shunt release coil
- 24V AC electric shunt release coil
- 48V AC electric shunt release coil

- Automatic reset by means of servomotor BL24-48, with a supply voltage of 24 ... 48 V AC/DC, operation by previously mentioned electric coils. Limit switch/es can be optionally incorporated. (CE Marking)

SMLD Smoke Evacuation Damper

CE Marking

The Koolair SMLD smoke evacuation damper, has CE marking, No. 0370-CPR-1688 in compliance with RPC-305/2011/EU, according to EN15650:2010.

Regulations

The SMLD damper is approved according to the European Test Standard UNE-EN 1366-10 and European classification standard UNE-EN 13501-4, where EI 120 (ved i↔o) S 1500 AA multi:

(E) Integrity

(I) Isolation

(120) : 120 minute resistance

(ved) Installed vertically in duct

(i ↔ o) Symmetric. Suitable for fire in both directions (interior-exterior and exterior-interior)

(S) Airtightness. Leakage through the damper closing blades <math>< 200 \text{ m}^3/\text{h}\cdot\text{m}^2</math>

(1500) Suitable for a working pressure range from 1500 Pa negative (extract) to 500 Pa positive (supply). (AA) Automatic intervention.


(multi) Suitable for multi-compartment systems

The SMLD smoke damper can be associated with KOOLAIR's KOOLCOM management and monitoring system for fire dampers.

To guarantee correct fire damper operation, it is essential to read and follow the recommendations in the installation and operation manual. In addition, the installation must comply with all current national standards.

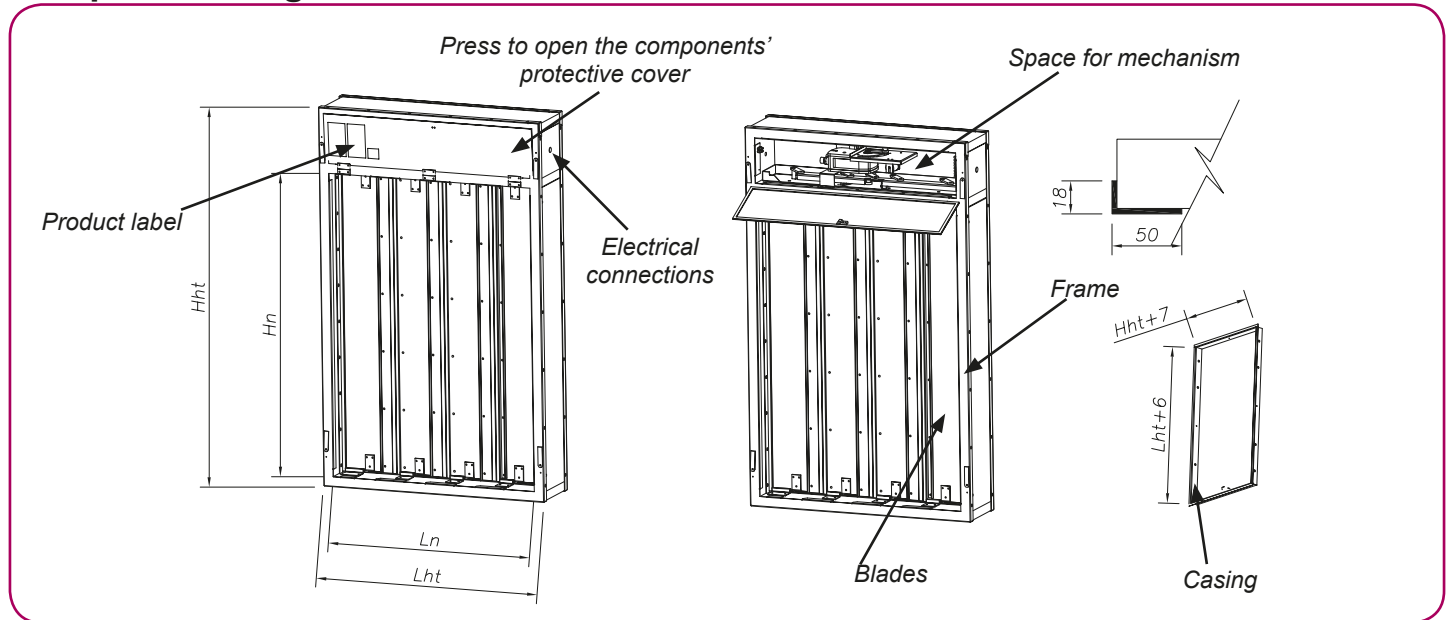
Further information and updates, as well as the installation and operating manual, can be found on our website (www.koolair.com).

Declared smoke extraction performance

| SMLD CPR-1688 | | Dimensions (mm) | Installation location | Installation | Classification |
|------------------|---|---------------------------------|--------------------------|--------------------------------------|---|
| CE |  | L: 2 → 4 lamas H: 200 → 1000 | Smoke extract duct | 1366-8 certified vertical duct | EI-120 (ved i↔o) S 1500 AA multi (500 Pa) |

SMLD Smoke Evacuation Damper Dimensions

Damper Drawing



Fire resistance according to EN 13501 - 4

EI 120 (Ved - i ↔ o) S 1500 AA MULTI

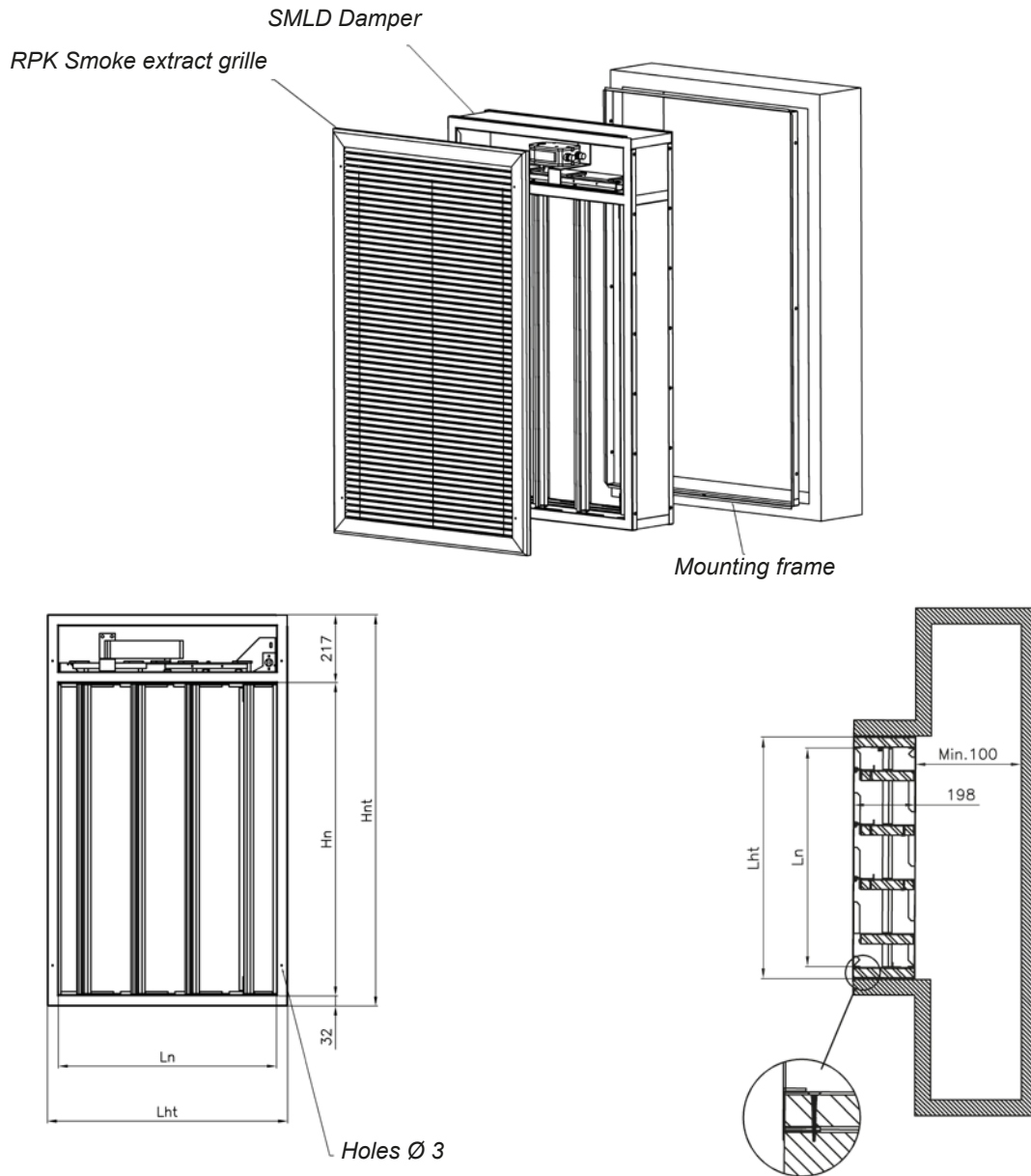
Dimensions and openings

| L Dimensions (see drawing) | | |
|---------------------------------|-------------------------------|-----------------------------------|
| Number of blades (N) | Nominal dimensions L_n (mm) | External dimensions L_{ht} (mm) |
| 2 | 354 | 418 |
| 3 | 527 | 591 |
| 4 | 700 | 764 |
| H Dimensions (see diagram) | | |
| Nominal dimensions H_n (mm) | | |
| De 200 a 1000 pasos de 50 en 50 | | |

Dimensions in mm

SMLD Smoke Evacuation Damper Dimensions

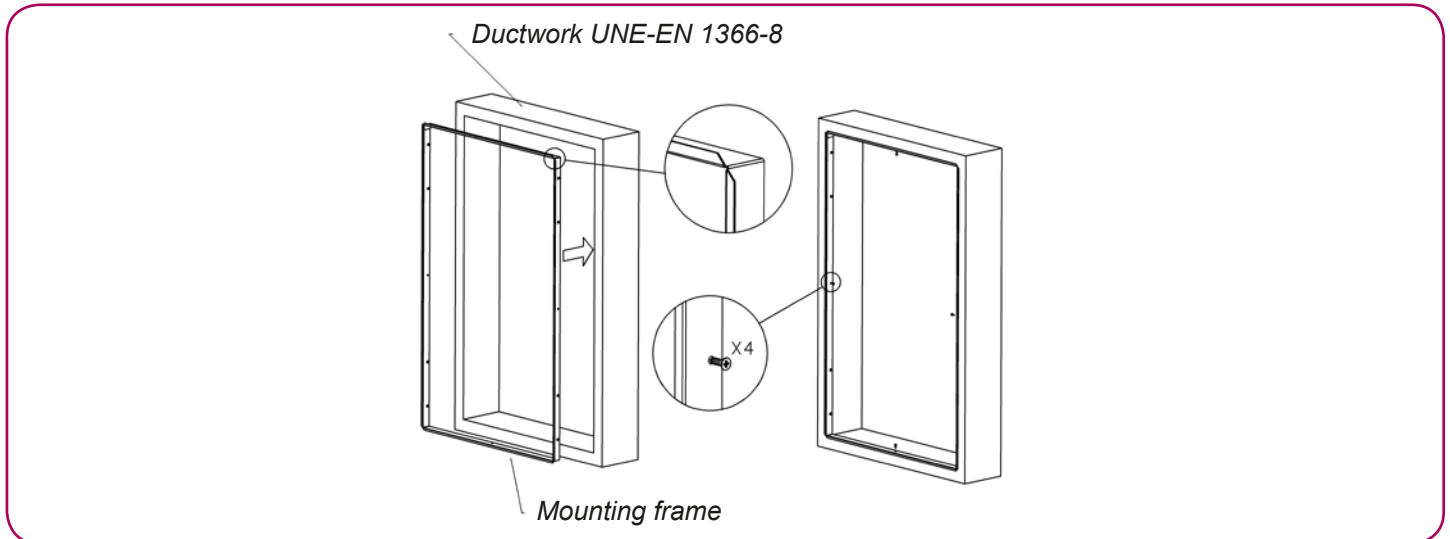
Installation and commissioning



SMLD damper application in installations which employ ductwork different from that which has been submitted for certification testing: SMLD smoke control dampers, for use in multi-compartment systems (multi), are applicable in ducts that are tested in accordance with EN1366-8 as appropriate for each particular case or manufactured from materials with the same density or greater thickness than those used in the certification test. Ductwork must be installed in accordance with the manufacturer's latest drawings.

SMLD Smoke Evacuation Damper Installation

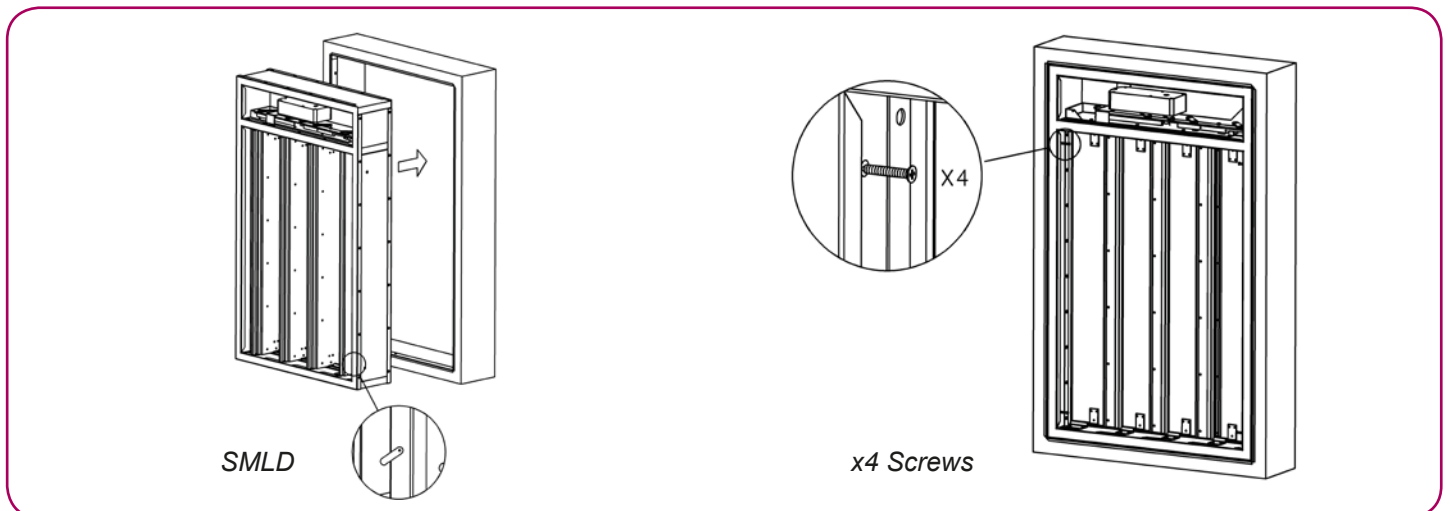
Use of mounting frame



Precautions:

- Make sure the mounting frame is perpendicular before installation.
- Fix the frame to the duct using the 4 screws provided with the frame.
- Drill a hole to allow ductwork connections to pass.

SMLD assembly



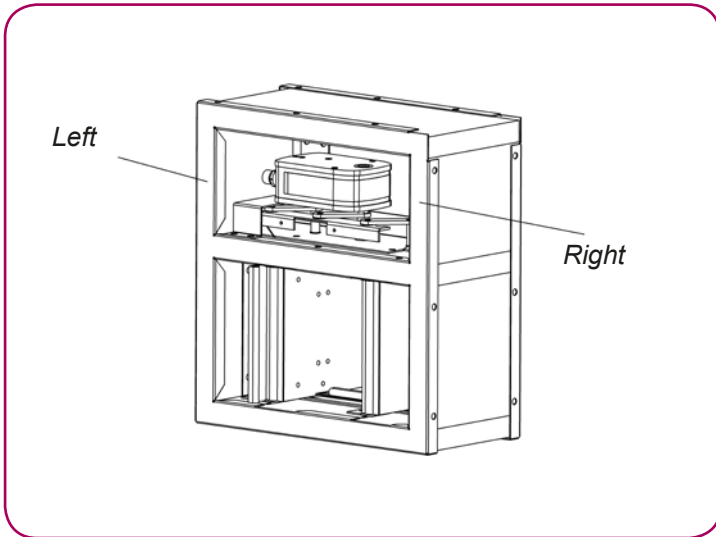
- Install the damper in the mounting frame. Use the collapsible pins included in the damper frame as a stop.
- Fix the damper to the frame using the 4 screws provided with the damper.
- Complete the assembly by filling all the screw holes with intumescent putty.

As it is a critical safety item, the damper must be stored and handled with care. Precautions:

- Store in a place protected from moisture.
- Avoid contact with water.
- Avoid deformation of the damper body during installation and sealing.
- Prevent the damper from being knocked or swung during transport.

SMLD Smoke Evacuation Damper Connections

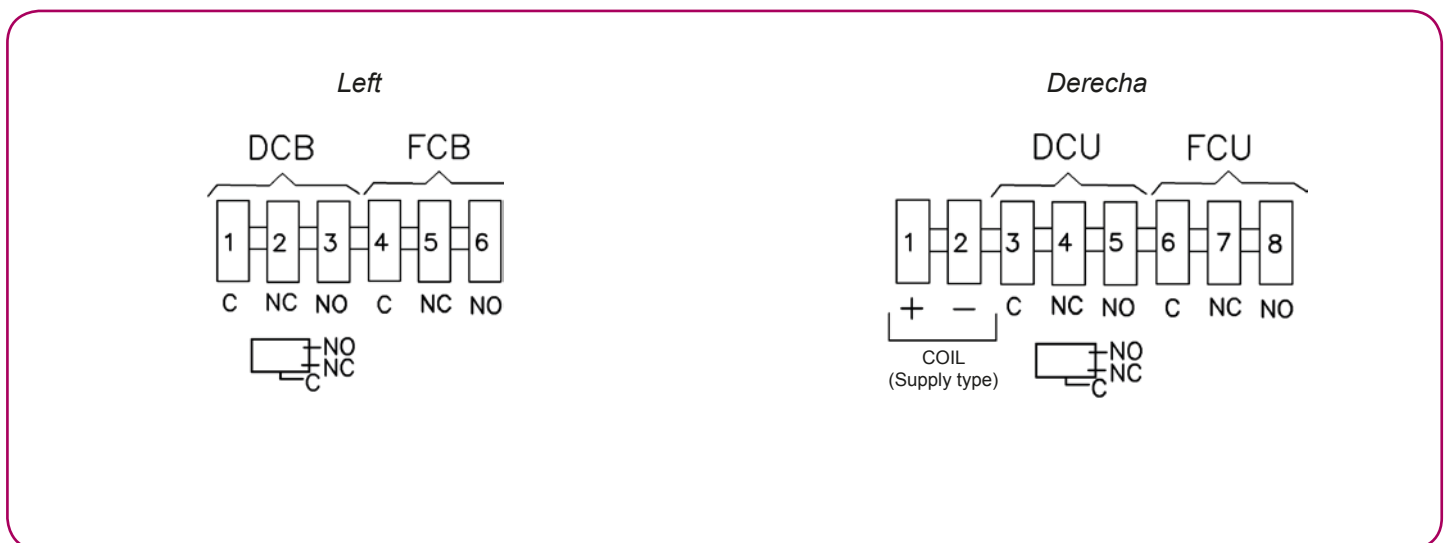
Operating mechanism electrical connections



FCU: safety position (end of run) one-pole contact.
 DCU: waiting position (start of run) one-pole contact.
 FCB: safety position (end of run) two-pole contact.
 DCB: waiting position (start of run) two-pole contact.

• Operated by electric shunt release (current driven) coil (CE Marking): Power supply options:

- 24V DC electric shunt release coil
- 48V DC electric shunt release coil
- 24V AC electric shunt release coil
- 48V AC electric shunt release coil

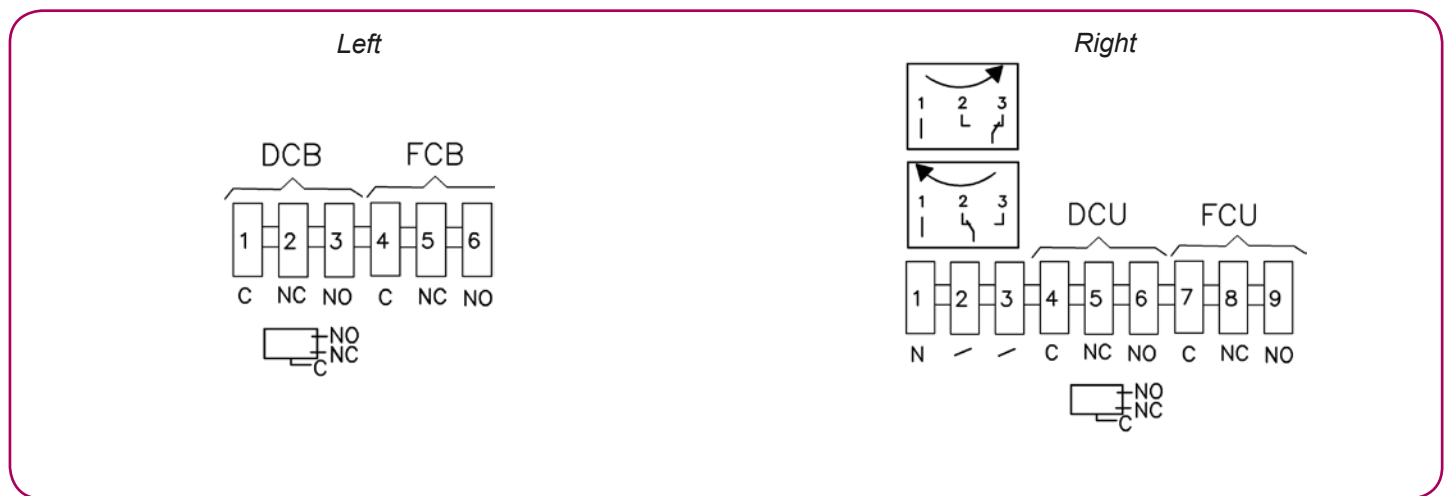


Option to incorporate two start of run limit switches (DCU, DCB) and two end of run limit switches (FCU, FCB).

SMLD Smoke Evacuation Damper Connections

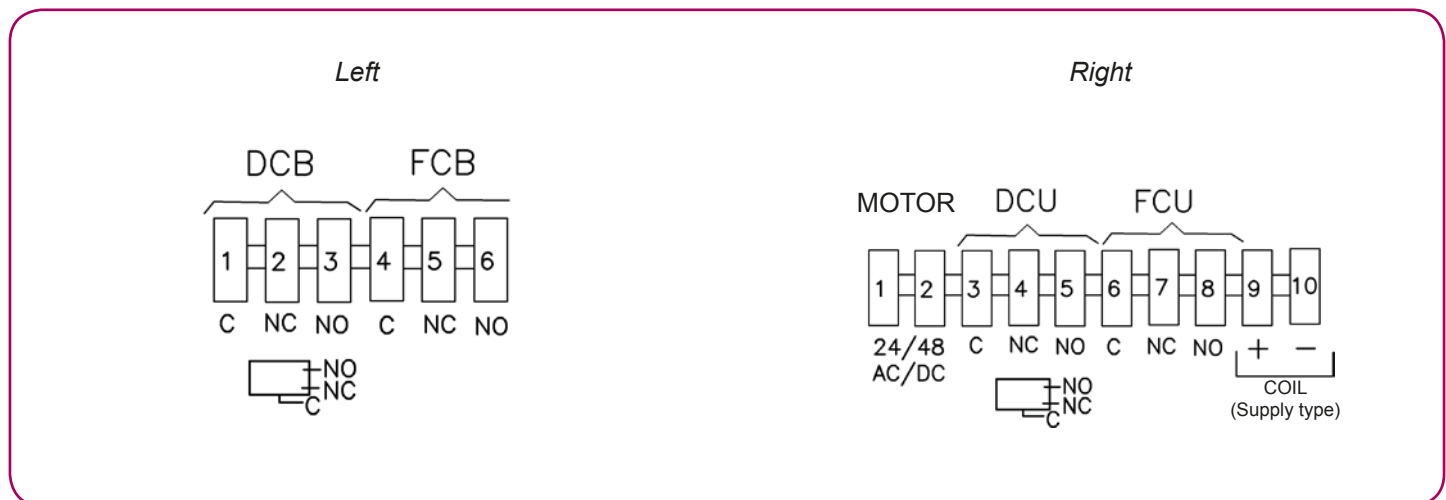
• Operation and reset by electric servomotor (CE Marking):

Supply voltage 24 V AC/DC (model BLE24) or 230 V AC (model BLE230). These motors integrate start of run (DCU) and end of run limit switches (FCU). The motor supply must be of SES (Safe Electrical Supply) type. A second start of run (DCB) and end of run limit switch (FCB) can be optionally included.



Operated by shunt release coil and reset with an electric servomotor (CE marking):

- 24 V DC electric shunt release coil.
- 48V DC electric shunt release coil
- 24V AC electric shunt release coil
- 48V AC electric shunt release coil
- Servomotor to reset (close) damper, BL24-48, with 24 ... 48 V AC/DC supply voltage



Option to incorporate two start of run limit switches (DCU, DCB) and two end of run limit switches (FCU, FCB).

SMLD Smoke Evacuation Damper Technical Data

| Blades | Ln | Lt | Lm | Lh |
|--------|-----|-----|-----|-----|
| 2 | 354 | 418 | 427 | 429 |
| 3 | 527 | 591 | 600 | 602 |
| 4 | 700 | 764 | 773 | 775 |

Units in mm

Free area table (dm²)

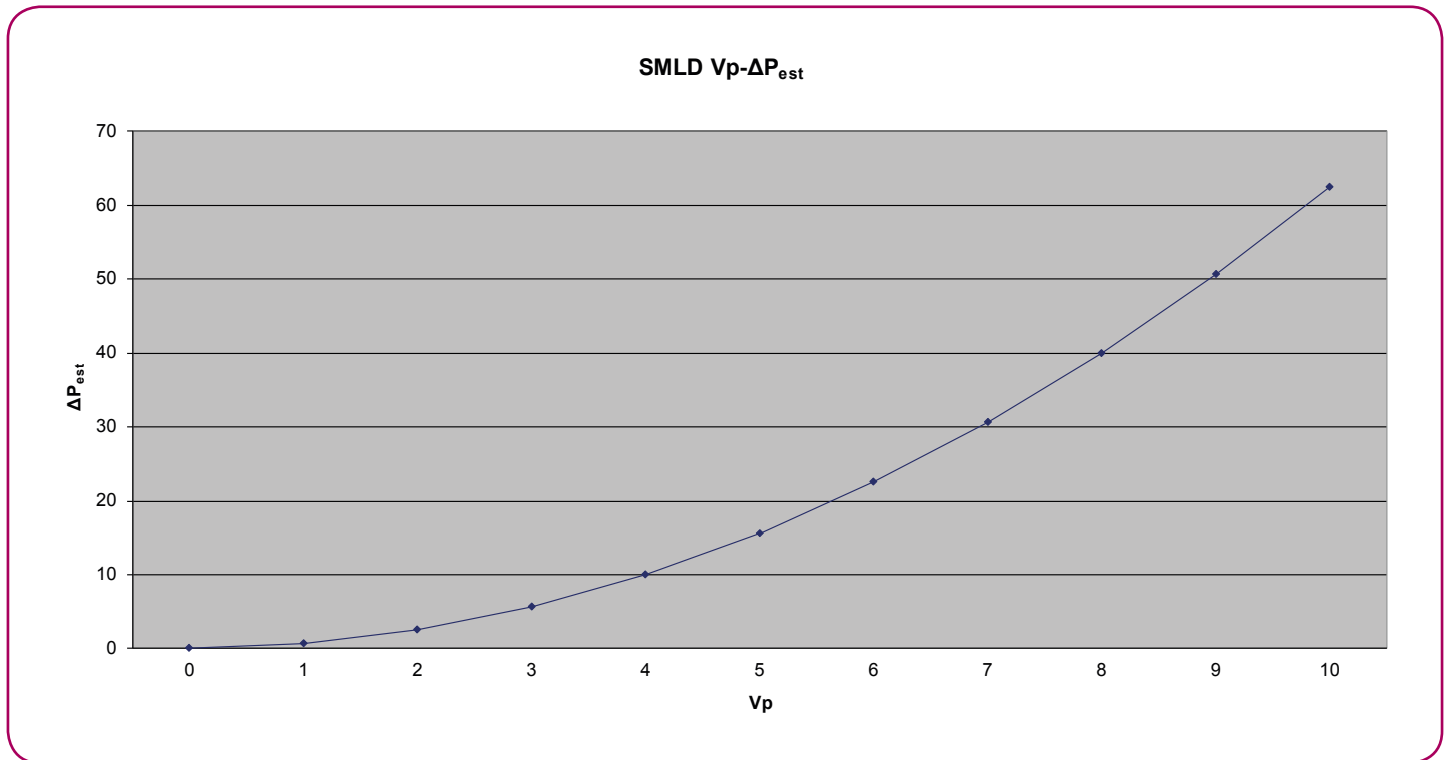
| Blades | Ln (mm) | Height Hn (mm) | | | | | | | | | | | | | | | | |
|--------|---------|----------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | | 200 | 250 | 300 | 350 | 400 | 450 | 500 | 550 | 600 | 650 | 700 | 750 | 800 | 850 | 900 | 950 | 1000 |
| 2 | 354 | 4,9 | 6,1 | 7,3 | 8,5 | 9,8 | 11,0 | 12,2 | 13,4 | 14,6 | 15,9 | 17,1 | 18,3 | 19,5 | 20,7 | 22,0 | 23,2 | 24,4 |
| 3 | 527 | 7,3 | 9,2 | 11,0 | 12,8 | 14,6 | 16,5 | 18,3 | 20,1 | 22,0 | 23,8 | 25,6 | 27,5 | 29,3 | 31,1 | 32,9 | 34,8 | 36,6 |
| 4 | 700 | 9,8 | 12,2 | 14,6 | 17,1 | 19,5 | 22,0 | 24,4 | 26,8 | 29,3 | 31,7 | 34,2 | 36,6 | 39,0 | 41,5 | 43,9 | 46,4 | 48,8 |

KEY

- L** = Length
- H** = Height
- Ln** = Nominal length
- Hn** = Nominal height
- Lt** = Total length
- Ht** = Total height
- Lm** = Mounting frame length
- Hm** = Mounting frame height
- Lh** = Opening length
- Hh** = Opening height

SMLD Smoke Evacuation Damper Technical Data

SMLD Graph



Key:

V_p damper air velocity in m/s.
 ΔP_{est} damper static pressure loss in Pa.

Selection example:

To calculate the static pressure loss across an SMLD damper for a given flow rate $Q(m^3/h)$ the air velocity $V_p(m/s)$ is calculated in relation to the damper air passage (dm^2) as free area table. Using this area and a given flow rate, the air velocity is obtained, which, when introduced in the previous graph gives the pressure loss.

Example:

A damper with 2 slats and a height of 500mm we will have a free area of $12.2 dm^2$. For a design flow rate of $2000 m^3/h^3$, the flow velocity is calculated using the formula $V_p = (Q / \text{air pass}) / 36$.

In this case the $V_p = 4.55 m/s$ that introduced in the previous table would give us a static load loss $\Delta P_{est} = 14 Pa$.

SMLD Smoke Evacuation Damper Coding

Damper dimensions and model

SMLD – L x H (mm)

Activation. Components

- + MOTOR-BLE24
- + MOTOR-BLE230
- + SHUNT REL 24 V DC + SoR/EoR LS
- + SHUNT REL 48 V DC + SoR/EoR LS
- + SHUNT REL 24 V AC + SoR/EoR LS
- + SHUNT REL 48 V AC + SoR/EoR LS
- + SHUNT REL 24 V DC + SoR/EoR LS + MOTOR RESET-BL24/48
- + SHUNT REL 48 V DC + SoR/EoR LS + MOTOR RESET-BL24/48
- + SHUNT REL 24 V AC + SoR/EoR LS + MOTOR RESET-BL24/48
- + SHUNT REL 48 V AC + SoR/EoR LS + MOTOR RESET-BL24/48

Accessories

MM (Metal mounting frame)
RPK (protective smoke evacuation grille)

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