

SMOKE EXHAUST DAMPER

2.1.9

MSD-F EN 12101-8

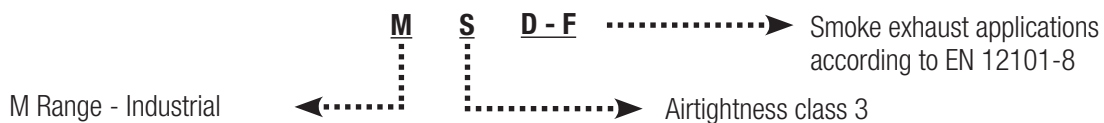
VOLUME CONTROL

The MSD-F smoke exhaust damper has been tested and certified to standard EN 12101-8 (CE marking).
The MSD-F damper complies with the European requirements for single-compartment smoke exhaust applications.
It is fitted with an electrical actuator and a thermal jacket.



CE

CODIFICATION



CONSTRUCTION

		MSD-F
Lateral seals		Stainless steel Width 100 mm
Upstream-downstream airtightness		Class 3 according to EN 1751
Frame	Material	Galvanized steel or stainless steel 304L or 316L
	Thickness	2 mm <i>In option: 3 mm</i>
	Width	185mm <i>In option: 225mm</i>
	Drilling	Standard F2A drilling with a pitch of 165 mm (see FT 2.4.5) <i>In option: special drilling with a maximum pitch of 300 mm</i>
Blades	Material	Galvanized steel or stainless steel 304L or 316L
	Thickness	0.8 mm <i>In option: 1.5 mm</i>
	Pitch	165 mm
	Shaft	Ø12 mm <i>In option: Ø15 mm</i> Zinc-coated steel <i>In option: stainless steel 304L or 316L</i>
Bearings		Bronze <i>In option: stainless steel 304L or 316L</i>
Linkage		Zinc-coated steel <i>In option: stainless steel 304L or 316L</i> Opposed or parallel blade operation
Control		Motorised with On-Off actuator 100 Nm made by Bernard Controls (type AQ or EZ 10)
Thermal protection		Polyurethane-coated glass fabric covering Needle-punched layer 50 mm thick

Information and data cannot be considered as contractual. Design and data changes may occur without notice during F2A's continuous product development.

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CERTIFICATION

The MSD-F damper has been tested by the Efectis laboratory (France).



It complies with EN 12101-8: *Smoke and heat control systems Part 8: smoke exhaust dampers*

The damper meets:

- Test standard EN 1366-10: *Fire resistance tests for technical installations. Part 10: smoke exhaust dampers.*
- Classification standard EN 13501-4: *Fire classification of construction products and elements. Part 4: Classification using data from fire resistance tests on components of smoke control systems.*

It therefore meets the requirements of a marking **CE**

CE certification number: 1812-CPR-1180

$E_{600} S 120 (v_{ew} h_{ow} i \leftrightarrow o) 500C_{300} MA$ single

Criteria	
E_{600}	Airtightness to fire $<360m^3 \cdot h^{-1} \cdot m^{-2}$ at 600°C
S	Leakage rate $<200m^3 \cdot h^{-1} \cdot m^{-2}$
120	Test length (min.)
$V_{ew} H_{ow}$	Use in vertical and/or horizontal position on concrete structure
$i \leftrightarrow o$	Airtightness direction: fire side and/or opposed fire side
500	Use from -500 Pa to +500 Pa
C_{300}	Operation in safe mode -> On-Off actuator (300 cycles)
MA	Made safe manually up to 25 min after the outbreak of fire
single	Single compartmentation

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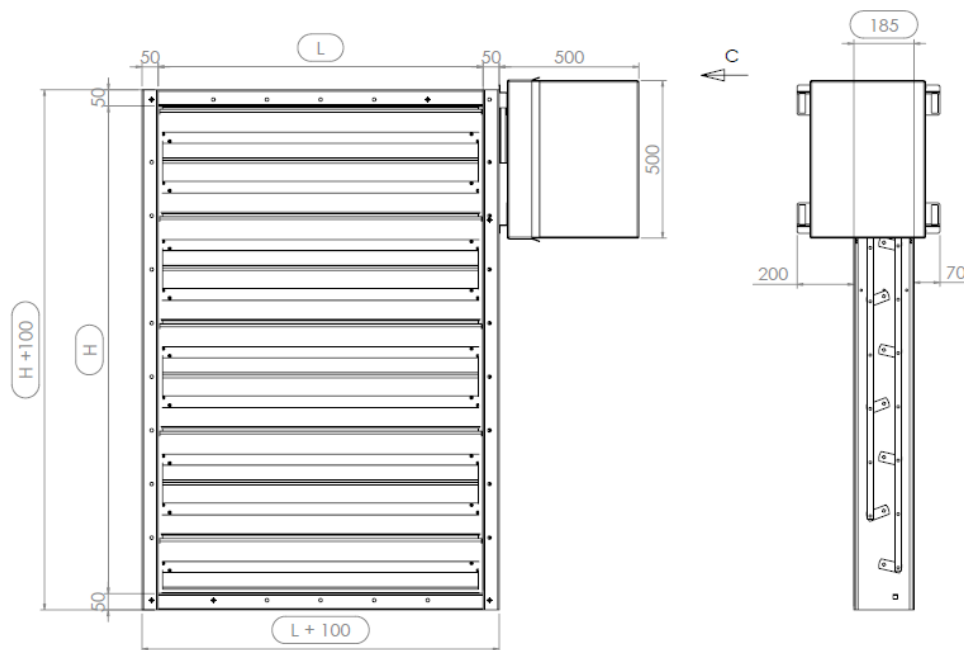
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VOLUME CONTROL

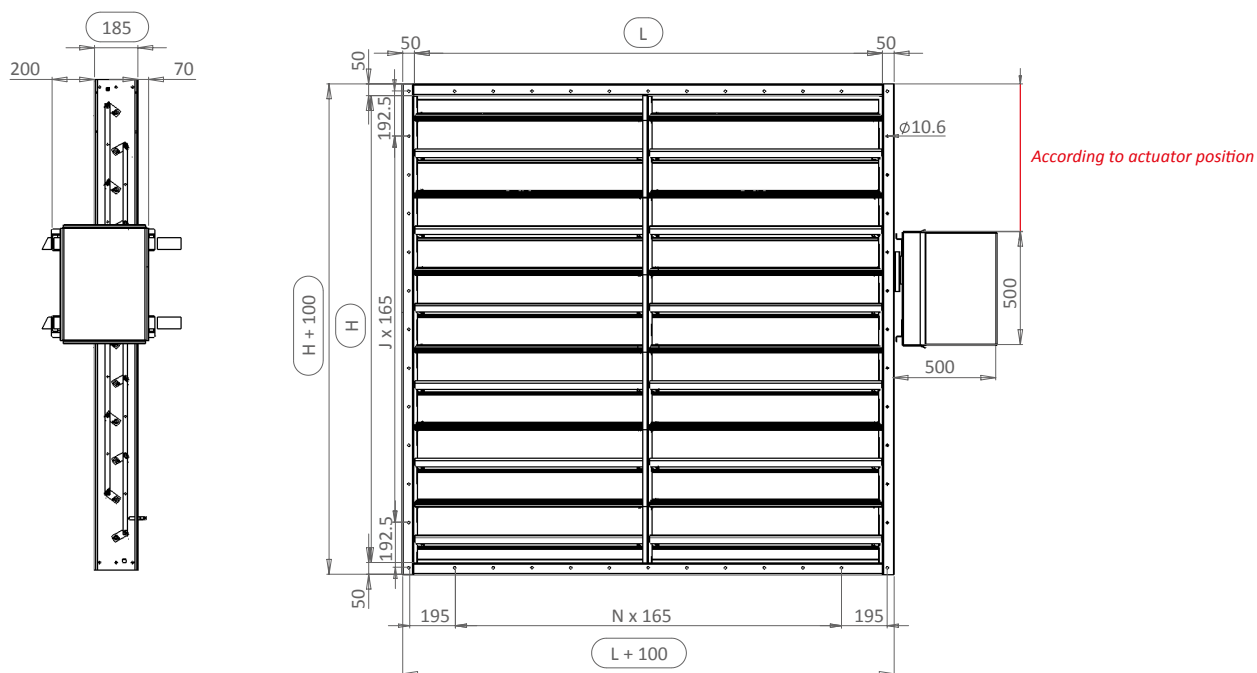
DIMENSIONS

- Height H from 180 to 1995 mm with a pitch of 165 mm
- Length L from 200 to 2000 mm

Construction for a length $L < 1000$ mm



Construction for a length $L > 1000$ mm (vertical stiffener)



Upper dimensions obtained by assembling several modules

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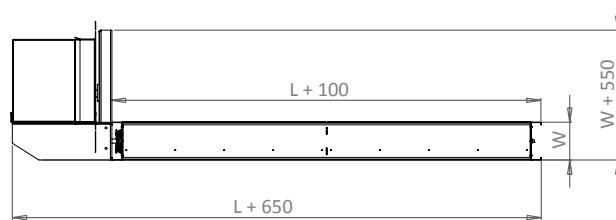
Technical characteristics of the MSD-F damper:

The MSD-F smoke exhaust damper comprises:

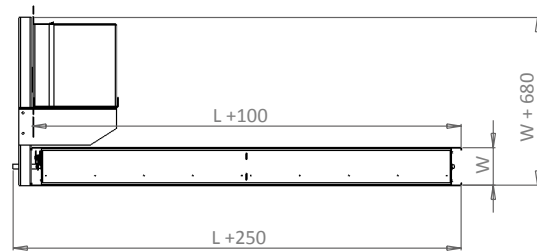
- A set of blades connected to each other by a metal frame.
- An actuator to manoeuvre the blades and put into the safe position.
- Thermal protection on the actuator to ensure performances at high temperature up to 25 min after the outbreak of the fire.

POSSIBLE ACTUATOR CONFIGURATIONS

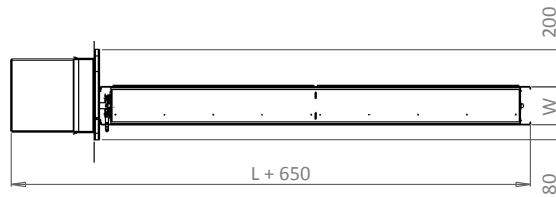
Forward position of the actuator outside the airflow



Forward position of the actuator inside the airflow

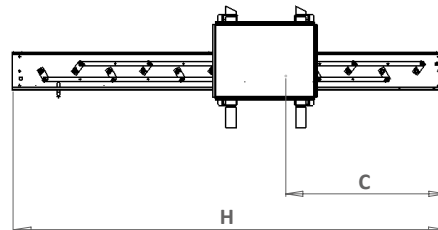


Control directly on frame



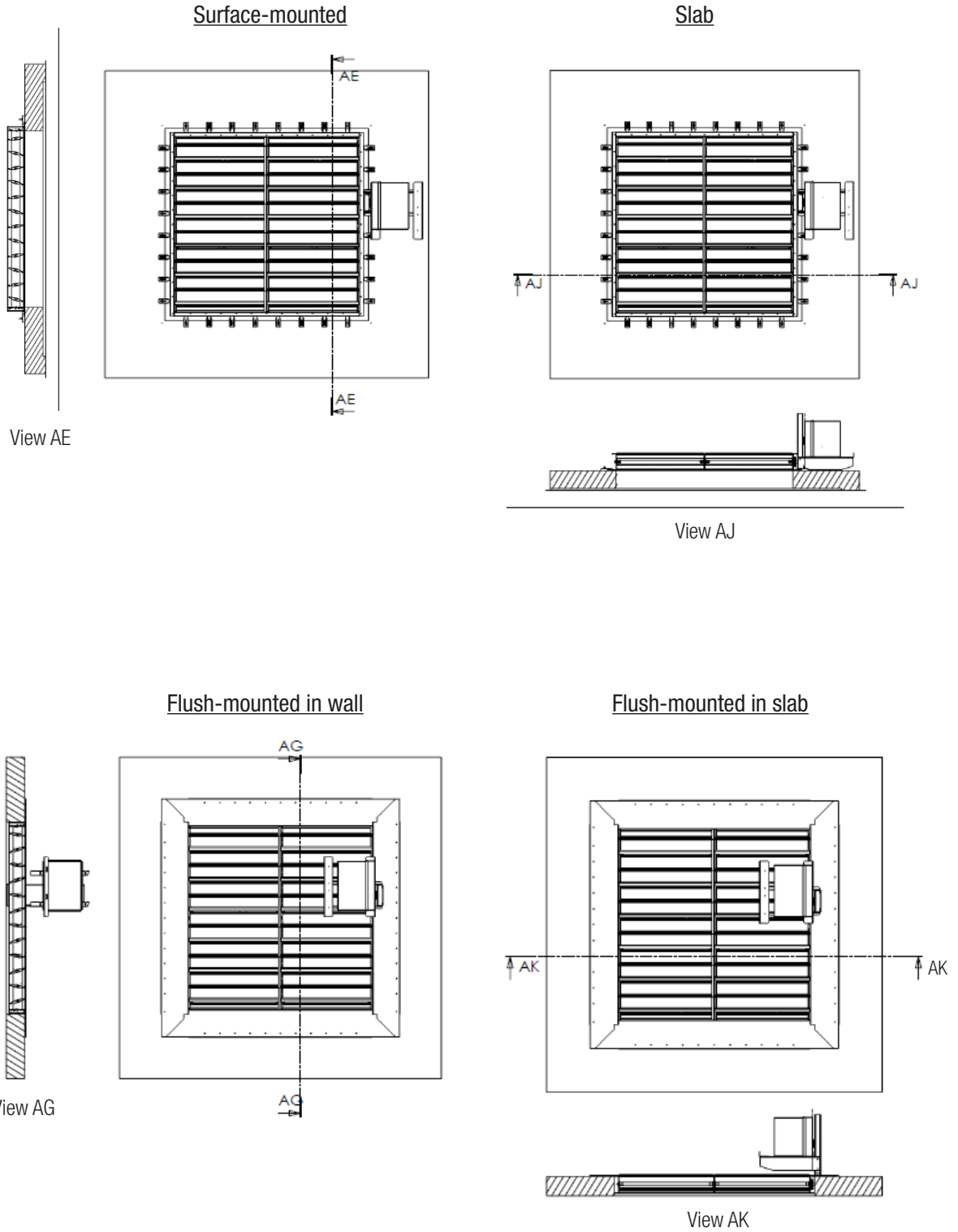
Actuator's position

C = position of the control part



Opposed linkage: control only on the uneven blades: 1 - 3 - 5 - 7 - 9 - 11

POSSIBLE INSTALLATION CONFIGURATIONS



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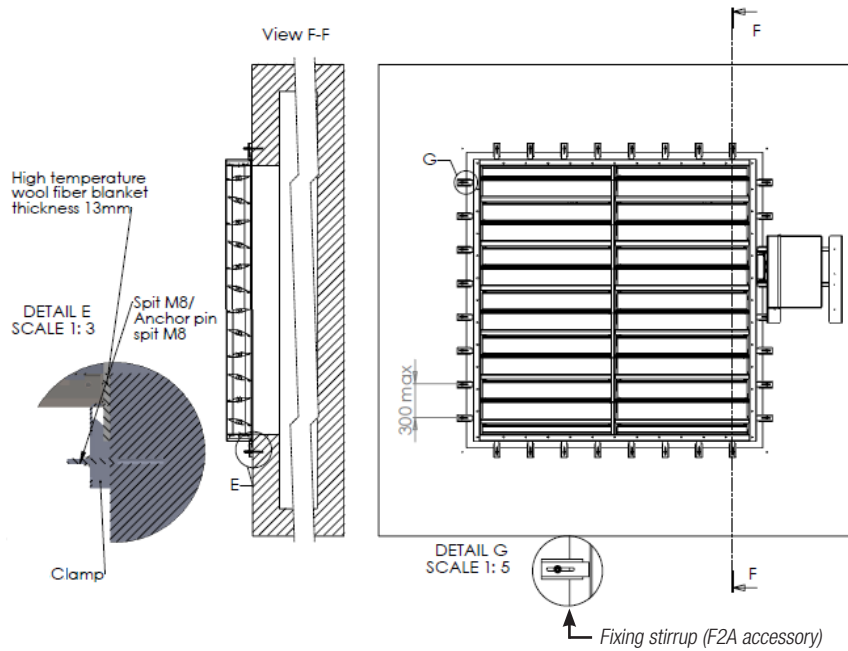
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MSD-F EN 12101-8

FIXINGS

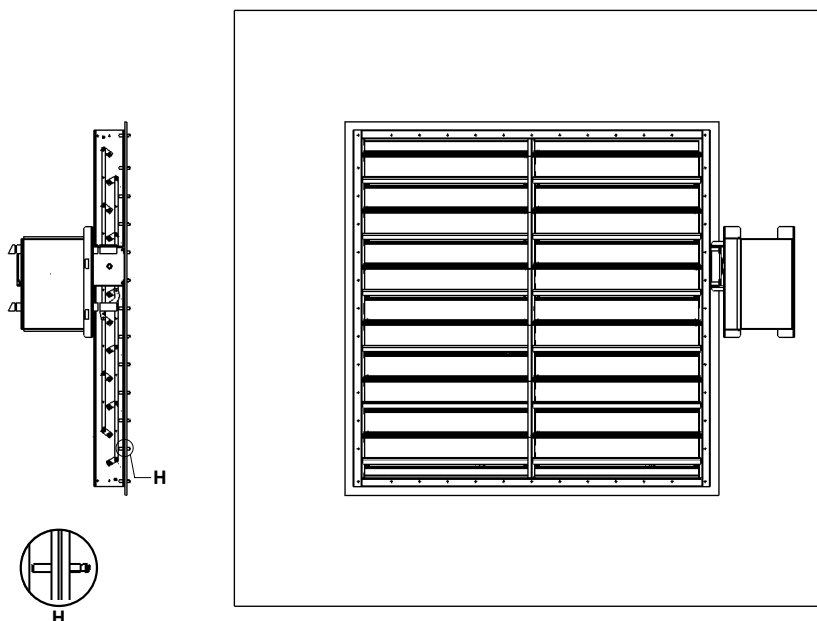
Damper fixed to a concrete slab using fixing stirrups:

- Anchor M8 x 130 mm.
- Super wool blanket high-temperature thermal insulation (minimum 13 mm thick).
- In maximum increments of 300 mm.
- Horizontal or vertical position.



Damper fixed directly via the holes drilled in the frame:

- Anchor M8 x 130 mm.
- Super wool blanket high-temperature thermal insulation (minimum 13 mm thick).
- With a maximum pitch of 300 mm.
- Horizontal or vertical position.



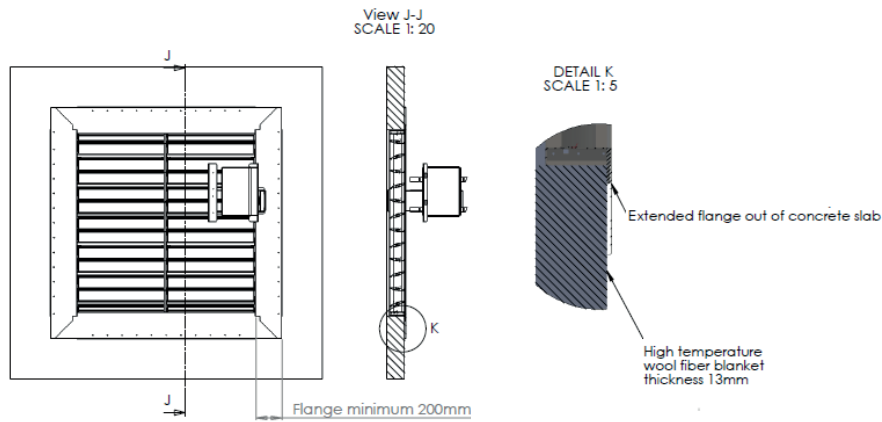
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VOLUME CONTROL

Damper flush-mounted in the concrete slab:



WEIGHT (kg)

The weights below are given for an MSD-F damper with the following characteristics:

- Galvanised steel damper.
- 2mm-thick frame.
- 0.8mm-thick blades.
- On-Off actuator 100 Nm (made by Bernard Controls) with F2A thermal protection.
- Vertical stiffener for lengths $L > 1000\text{mm}$

H \ L	200	400	600	800	1000	1200	1400	1600	1800	2000
180	27	30	33	36	39	42	45	47	50	53
345	31	35	39	42	46	50	54	57	61	64
510	36	41	45	49	53	59	63	67	71	75
675	41	46	51	55	60	68	73	77	82	86
840	46	52	57	62	68	77	82	87	92	97
1005	51	57	63	69	74	85	91	97	103	108
1170	56	63	69	75	82	94	101	106	113	119
1335	61	68	75	82	89	103	110	116	123	131
1500	66	74	81	89	97	111	119	126	134	142
1665	71	79	87	95	104	120	128	136	144	153
1830	76	85	93	102	111	129	138	146	155	164
1995	81	90	99	109	118	138	147	156	165	175

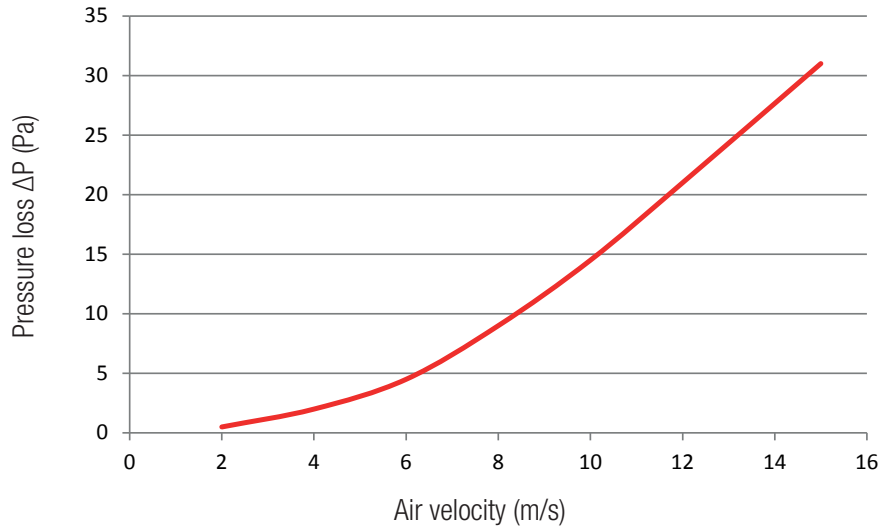
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PRESSURE LOSSES

Pressure losses (Pa) are given according to the frontal air velocity (in m/s) for an MSD-F damper that is fully open (blade opening angle = 0°).



ACTUATION

Supplier	Range	Motor torques	Operation	Supply	Maximum power	Maximum current	Manoeuvring time
Bernard Controls	AQ or EZ 10	100 N.m	On/Off	380/400 V AC	0.03 kW	0.3 A	< 40 sec
Bernard Controls	AQ or EZ 10	100 N.m	On/Off	24 V AC/DC	0.03 kW	0.6 A	< 40 sec
Bernard Controls	AQ or EZ 10	100 N.m	On/Off	220 V AC	0.03 kW	2.5 A	< 40 sec

Please refer to the actuator technical sheet for further information.