



## ATEX regelklep

**Industrial dampers of the M range** are reinforced and allow to shut-off or control the air volume of large ventilation ductworks (up to H2490 x L2500 mm in one element) subject to high pressures and temperatures (+200 °C). They can withstand to commercial buildings or industrial constraints.

The **M range** dampers are available in ATEX version.



### CONSTRUCTION

Control		Frame
Manual	Smooth shaft Ø16 - Length 70 mm Lever and manual locking <i>Option : reinforced blocking lever</i>	
Motorized	Smooth shaft Ø16 - Length 120 mm <i>Option : actuators supplied on request and factory-mounted</i>	
Linkage		Blades
Linkage in zinc-plated steel with opposed blade operation <i>Option : stainless steel 304 L or 316 L, paralel blade operation</i>		
		Width : 185 mm Thickness : 2.0 mm Galvanized steel <i>Option : stainless steel 304 L or 316 L, or painted steel (RAL standard)</i> Drilling Ø10 mm in each angle <i>In option : standard drilling F2A with a pitch of 165 mm, spécial drilling</i> Flanges : 50 mm <i>in option 40 mm</i>
		Galvanized steel <i>Option : stainless steel 304 L ou 316 L or painted steel (Standard RAL)</i> Pitch : 165 mm

### PERFORMANCES

	Airtight E type
Upsteam/downstream airtightness (according to EN 1751)	Class 4 (EN 1751)
Frame's airtightness (according to EN 1751)	Class C (EN 1751)
Acceptable pressure	3 000 Pa (for L=1m length)
Operating temperatures	From -20°C to +80°C <i>Option : +200 °C</i>

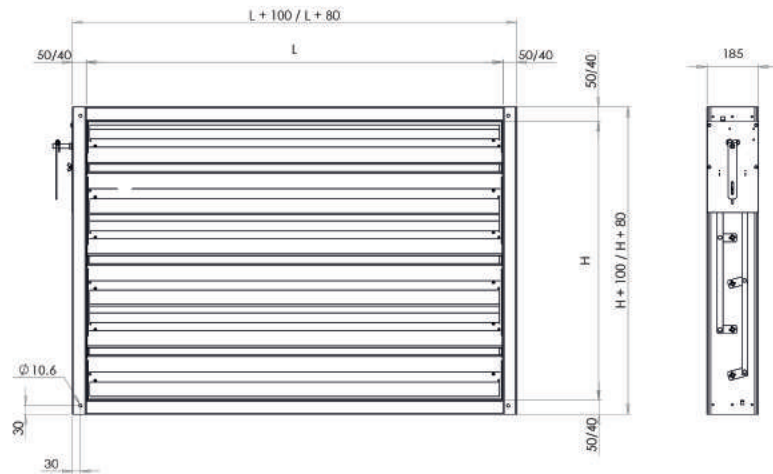


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### DIMENSIONS

#### ME dampers :

Height H from 345 to 1995 mm  
Length L from 400 to 2000 mm



#### Options :

Circular connection up to  $\phi 1250$  mm

Mounted with weather louvre / Can be coupled with other dampers / Actuators in the air flow.

### WEIGHT (kg)

L \ H	200	400	600	800	1000	1200	1400	1600	2000	2500
180	13	17	21	25	28	37	40	44	51	61
510	21	27	32	38	43	58	64	69	80	93
840	30	37	44	51	58	80	87	95	109	127
1170	38	47	56	65	73	102	111	120	138	160
1500	46	57	67	78	88	125	135	146	167	193
1830	55	67	79	91	104	147	159	171	196	226
2160	63	77	91	105	119	169	183	197	224	259
2490	73	88	104	120	135	192	208	223	255	294



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### ATEX

**M range** ATEX is expected to be used on risk' sites because of explosive atmospheres : groupe II.

However, it is not intended for underground or surface mining installation due to the firedamp and flammable dust (Groupe I).



Moreover, some conditions are required to be compliant with ATEX directive :

#### Technical conditions according to subdivisions gas groups

	Differentiation in gas group		
	IIA	IIB	IIC
Airtight ME	No restriction	If blade length > 1400 mm -> vertical stiffener	If blade length > 280 mm -> vertical stiffener

#### Technical conditions according to temperature class

Acceptable operating T°	Acceptable Class T°	Blades seals material	Usable bearings material	Usable construction materials
-20°C ≤ T° ≤ +60°C	T6 - T5 - T4 - T3 - T2	EPDM Silicone	Bronze Téflon	Galvanized steel Stainless steel
-20°C ≤ T° ≤ +80°C	T5 - T4 - T3 - T2	EPDM Silicone	Bronze Téflon	Galvanized steel Stainless steel
-20°C ≤ T° ≤ +120°C	T4 - T3	Silicone	Bronze	Galvanized steel Stainless steel
-20°C ≤ T° ≤ +180°C	T3 - T2	Silicone	Bronze	Galvanized steel Stainless steel
-20°C ≤ T° ≤ +200°C	T2	Silicone	Bronze	Galvanized steel Stainless steel

**NB** : if operating temperature is between -50°C ≤ T° ≤ -20°C => Stainless steel mandatory

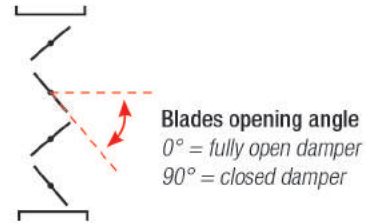


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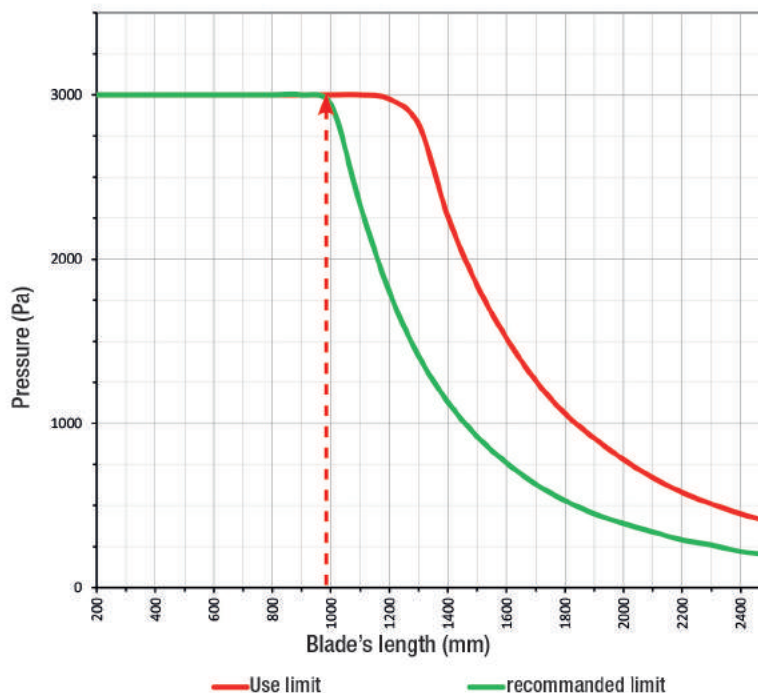
### PRESSURE LOSSES

The following pressure losses (Pa) are given according to the blades opening angle (in °) and air velocity (m/s).

Air velocity (m/s)	Blades opening angle		
	0°	30°	60°
2	< 5	10	175
4	< 5	35	630
6	8	75	-
8	10	135	
10	15	210	
12	20	305	
15	30	485	



### USE LIMITS



We recommend that the differential pressure does not exceed 3000 Pa for a blade length of 1000 mm. Beyond this limite operation, construction is possible with vertical central stiffener.





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### REGENERATED NOISE

The acoustic performances of our U dampers have been tested in an independent laboratory (CTTM) according to ISO 7235: 2009 standard.



**Air flow noise  $L_w$  in dB ( blades opening angle 30°)**

- Damper type MO (opposed blade operation) :

Air velocity (m/s)	Frequency (Hz)								Global $L_w$ (dB)
	63	125	250	500	1000	2000	4000	8000	
<b>2 m/s</b>	33.5	37.8	39.0	40.7	32.2	27.2	34.8	39.0	46.1
<b>4 m/s</b>	42.9	46.1	48.8	56.1	53.4	47.3	38.3	39.1	59.2
<b>6 m/s</b>	53.7	53.0	54.0	62.0	62.3	58.7	50.9	42.2	66.9
<b>8 m/s</b>	65.3	61.2	59.2	66.5	68.0	66.2	59.8	50.4	73.4
<b>10 m/s</b>	74.3	70.1	63.8	70.1	72.3	71.6	66.2	57.6	79.3
<b>12 m/s</b>	78.7	77.4	68.1	73.4	75.9	76.2	71.3	63.3	84.0
<b>15 m/s</b>	81.9	83.4	76.0	77.8	80.4	82.0	77.8	70.5	89.1

Datas are given for a damper 500 x 500 mm.

From these data, you can calculate the regenerated noise of a damper of different dimensions by applying the formula below for every frequency band :

$$Lw_{63} = x_{63} + 10 \log \left( \frac{S}{0.25} \right)$$

$X_{63}$  = air flow noise for a damper 500 x 500 mm at 63 Hz (in dB) for a given air velocity => read the data in the table.

$S$  = damper section (in m<sup>2</sup>).

$Lw_{63}$  = air flow noise required at 63 Hz (in dB) for a given air velocity.

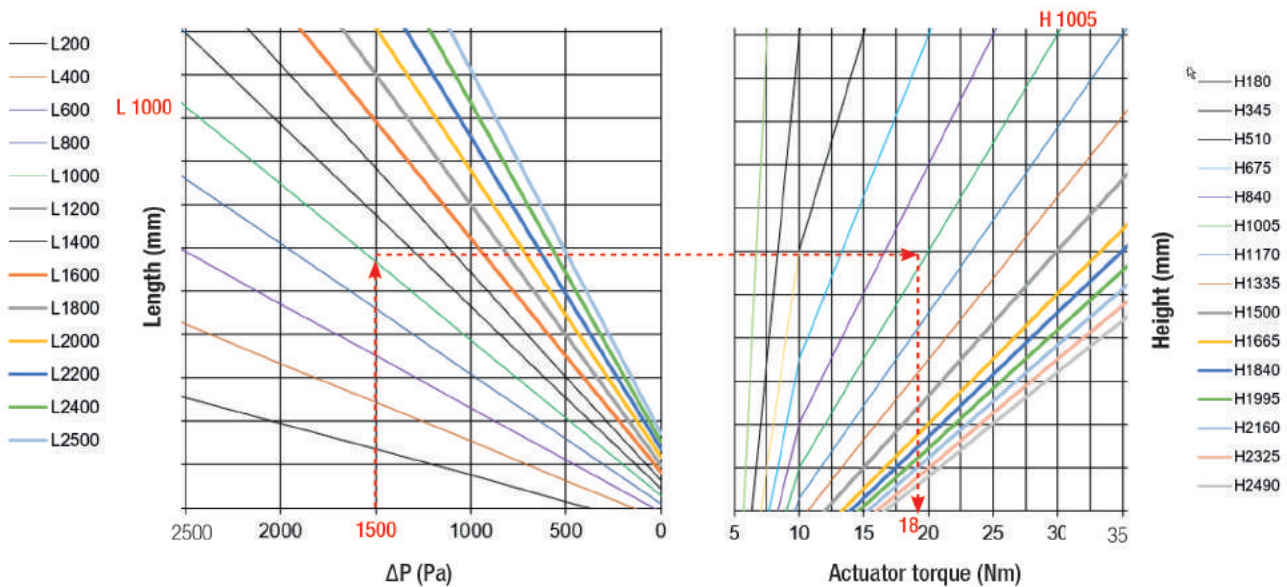


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### ACTUATOR TORQUES

The following actuator torques are given in Nm for a volume control damper type MO.

For a damper airtight (ME) A coefficient of 1.3 must be applied to the result.



#### Example :

$\Delta P = 1000$  Pa

Damper MO – L = 1000 mm x H = 1005 mm => motor torque = 18 Nm