

# Volume Control Dampers

## Series LF uPVC-VCD

High performance plastic volume control dampers

- 2.76 m<sup>3</sup>/hr/m<sup>2</sup> leakage at 50 Pa, over 70% better than required by Part L of Building Regulations
- Corrosion resistant, perfect for chlorinated atmospheres or coastal areas
- Low U value of 1.2 W/m<sup>2</sup>K
- Low torque design
- Full range of actuators
- Available painted to any RAL or BS colour
- Now tested for acoustic performance against BS EN ISO 10140-2:2010



## Series LF uPVC-VCD

The Series LF uPVC-VCD is an exceptionally low leakage volume control damper, designed for use in highly energy efficient buildings and proven in independent tests to have a leakage over 70% below that currently required by Part L of Building Regulations.

The plastic construction:

- Serves to make the whole damper a thermal break, as opposed to some rival products which attempt to modify an existing metal VCD design using thermal breaks.
- Is corrosion resistant. Perfect for coastal areas, chlorinated atmospheres such as swimming baths, and anywhere dampers may be exposed to elevated moisture levels.

As with all our volume control dampers, the drive system is fully protected by being enclosed within the frame. This avoids it coming into contact with dust and debris which would adversely affect performance and warrant more frequent maintenance.



## Design features

<b>Material</b>	Extruded rigid uPVC frame and blades Aluminium blade cores Stainless steel seals and fixings
<b>Sizes</b>	Minimum: 100mm x 105mm nominal Maximum single unit: 1500mm width, 1005mm height or 1005mm diameter. Above any of these, units would be made in sections or with mullions.
<b>Frame</b>	40mm flanges 130mm overall depth
<b>Finish</b>	Standard: White uPVC Optional: Painted to any RAL or BS colour
<b>Operation</b>	Opposed blade, gear driven
<b>Controls</b>	Standard: Extended spindle for motorisation by others Optional: Locking quadrant Factory fitted electronic, pneumatic or ATEX rated actuators  Please see pages 5 - 7 for more information on controls
<b>Mass/m<sup>2</sup> face area</b>	17.5 kg
<b>Free area</b>	75% maximum

## Product testing

### Leakage testing

Series LF uPVC VCDs have been tested for air-tightness when fully closed.

Part L of Building Regulations defines the maximum air permeability of a building as 10 m<sup>3</sup>/hr/m<sup>2</sup> when measured at 50 Pa.

LF uPVC-VCDs have a leakage of 2.76 m<sup>3</sup>/hr/m<sup>2</sup> at 50 Pa, exceeding the Part L requirement by over 70%.

The test damper was of nominal size 1000mm x 1005mm.

#### Test report number G2619/7610

The testing was carried out in July 2015 by Building Testing Ltd in Surrey, England.

Copies of the test report are available on request.



Testing & Inspection

Air leakage		
Static pressure (Pa)	l/s	m <sup>3</sup> /hr/m <sup>2</sup>
25	0.40	1.43
50	0.77	2.76
75	1.00	3.58
100	1.17	4.19
150	1.57	5.62
200	1.96	7.03
250	2.09	7.48
500	3.48	12.47
750	5.32	19.05
1000	6.98	25.00
1250	9.29	33.27
1500	11.97	42.88
1750	14.18	50.80
2000	17.71	63.44

## Product testing continued

### Acoustic attenuation testing

Series LF uPVC-VCD high performance plastic volume control dampers have been tested against:

**BS EN ISO 10140-2:2010**

Acoustics - Laboratory measurement of sound insulation of building elements - Measurement of airborne sound insulation

The testing was carried out in June 2017 by Exova in High Wycombe, Buckinghamshire, England.

The unit tested was of nominal size 1000mm x 1005mm.

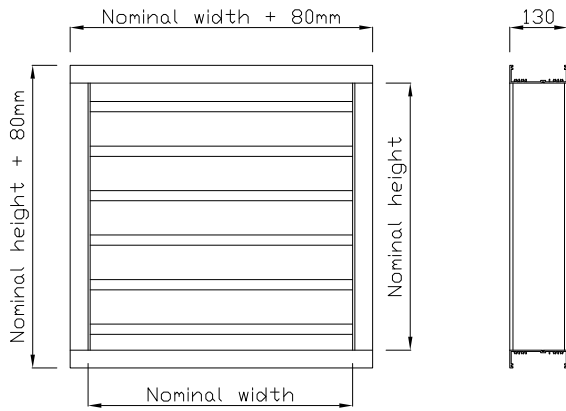
Copies of the test report are available on request.



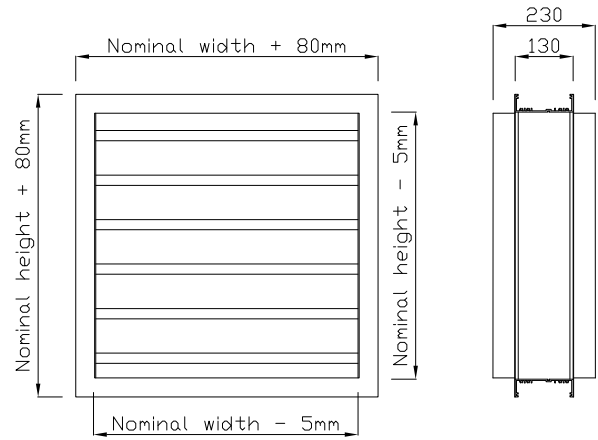
Blade setting	Sound reduction figures		
	R <sub>w</sub> (dB)	R <sub>w</sub> +C (dB)	R <sub>w</sub> +C <sub>tr</sub> (dB)
Fully open	2	2	2
Half open	3	3	3
Fully closed	20	20	19

## Technical drawings

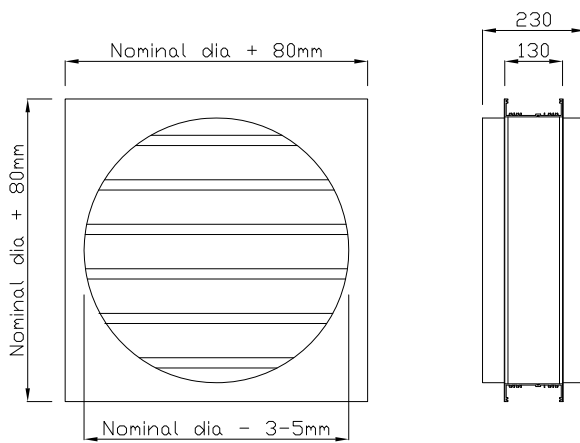
**Model A: Square flanged**



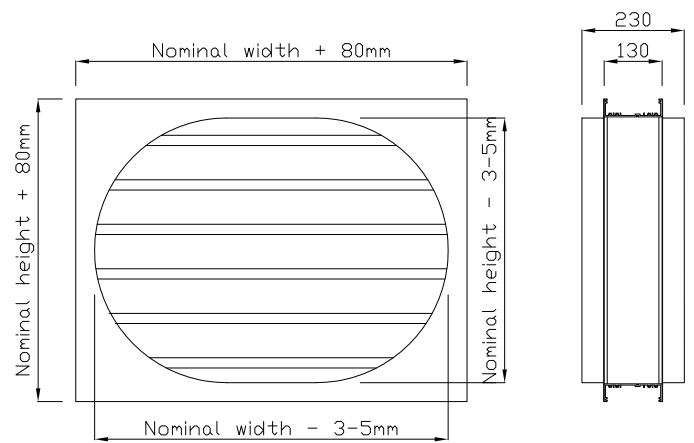
**Model B: Square spigotted**



**Model C: Circular spigotted**



**Model D: Flat oval spigotted**



If nominal size exceeds 1500mm wide, 1005mm high, or 1005mm diameter, units will either be manufactured in sections, or have mullions to divide the blade pack.

Spigots are manufactured from galvanised steel, polyester powder coated white.

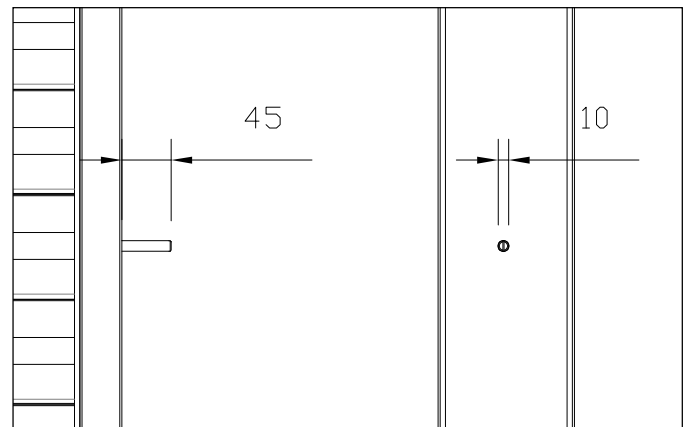
**Manufacturing tolerance:** + or - 1mm

## Controls

### Extended spindle (standard control method unless stated)

Allows fitting of an actuator by others.

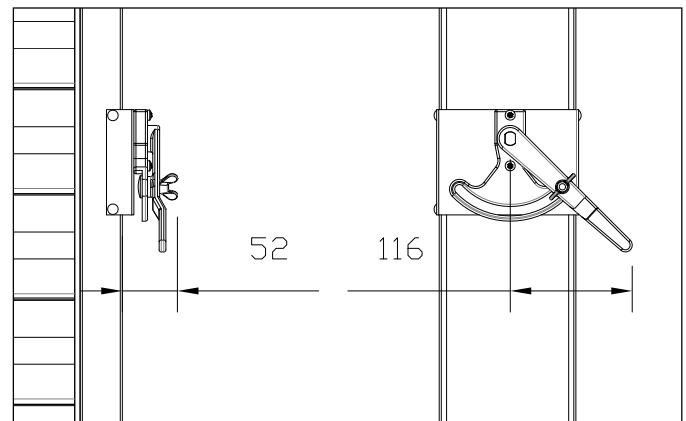
- Stainless steel
- 10mm diameter
- Extends 45mm from gear cover plate



### Locking quadrant

Cast aluminium locking quadrants can be fitted to enable manual operation of the VCD.

Locking quadrants come with a cast-in position indicator and locking nut.



## Belimo actuators

We recommend the use of Belimo actuators for applications in non-specialist environments.

All actuators are factory fitted and tested to confirm good operation. Other than connection to wiring, no alteration to the actuator is required on site.

Please see the below table to find the series of Belimo actuator you require for your application.



Series	Suitable for LF uPVC-VCDs up to			Voltage		Action			
	0.4m <sup>2</sup>	1.0m <sup>2</sup>	2.0m <sup>2</sup>	24V	230V*	Power open	power close	Spring return	Modulating
LM24A	✓			✓			✓		
LM24A-SR	✓			✓			✓		✓
LM230A	✓				✓		✓		
LM230ASR	✓				✓		✓		✓
NM24A		✓		✓			✓		
NM24A-SR		✓		✓			✓		✓
NM230A		✓			✓		✓		
NM230ASR		✓			✓		✓		✓
SM24A			✓	✓			✓		
SM24A-SR			✓	✓			✓		✓
SM230A			✓		✓		✓		
SM230ASR			✓		✓		✓		✓
LF24	✓			✓				✓	
LF24-SR	✓			✓				✓	✓
LF230	✓				✓			✓	
NF24A		✓		✓				✓	
NF24A-SR		✓		✓				✓	✓
NFA		✓		✓	✓			✓	
SF24A			✓	✓				✓	
SF24A-SR			✓	✓				✓	✓
SFA			✓	✓	✓			✓	

\*Suitable for 240V supply.

## Schischek explosion-proof actuators

Schischek produce a range of specialist explosion-proof actuators for use in areas with potentially explosive atmospheres; E.G. petro-chemical plants, whisky distilleries and grain silos.

ATEX approved.

All actuators are factory fitted and tested to confirm good operation. Other than connection to wiring, no alteration to the actuator is required on site.

Please contact us for more information on explosion-proof actuators with LF uPVC-VCDs.



## Kinetrol pneumatic actuators

We can factory fit LF uPVC VCDs with Kinetrol's compressed air driven pneumatic actuators. A range of additional options including spring return modules can be fitted to enhance functionality.

ATEX approved.

All actuators are factory fitted and tested to confirm good operation. Other than connection to pneumatic lines, no alteration to the actuator is required on site.

Please contact us for more information on pneumatic actuators with LF uPVC-VCDs.



## Motor housings

Unless specified, actuators are fitted outside the overall size of the VCD.

It is possible to protect your damper's actuator by specifying a motor housing.

A modified frame is used, which includes a protected enclosure, and uPVC plates fitted either side to cover the space, one of which is left removable. The space is large enough to allow removal of the actuator in the event of failure.

**Please note:** This will result in a loss of active damper width of 160mm with Belimo LM, NM and SM actuators. Other motor models may require larger enclosures.





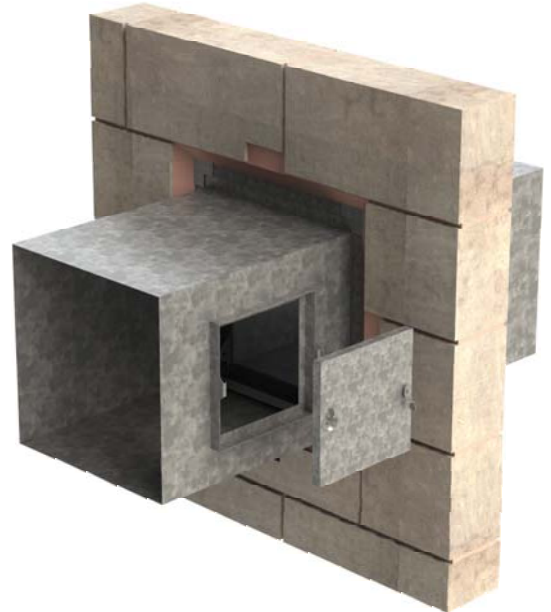
## Installation

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LF uPVC VCD volume control dampers are mechanical products with moving parts, as such installation should always take into account the requirements of future maintenance, with a view to providing adequate access to dampers.

If being installed into a larger assembly, please ensure provision for access is taken into account, for example through the use of removable access panels.

If being installed into ductwork we are able to supply a full range of access doors to facilitate quick and easy access.



## Maintenance

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Maintenance is essential to ensure LF uPVC VCDs operate satisfactorily throughout their working life.

For this reason we recommend that all LF uPVC VCD volume control dampers are inspected and maintained if necessary to ensure good operation at least annually. This may need to be performed more frequently should local conditions dictate it.

## Finish

White uPVC as standard

Painted to any RAL or BS colour

**Please note:** Blade end caps, blade tip and blade side seals will remain in natural finish should you require your damper to be painted.



## Ordering codes

### Example

1 - 1000 x 1005 - LF uPVC-VCD - Model A - Belimo NM24A-SR - MH - RAL7012

### Codes

1)	<b>Quantity</b>		
2)	<b>Size (mm)</b>	(Width x height)	Nominal size
3)	<b>Series</b>	LF uPVC-VCD	High performance plastic volume control damper
4)	<b>Model</b>	Model A Model B Model C Model D	Square flanged (standard) Square spigotted Circular spigotted Flat oval spigotted
5)	<b>Control</b>	EX LQ (Actuator)	Extended spindle (standard) Locking quadrant State actuator code When ordering a spring return actuator, please specify whether you require spring open or spring close operation.
6)	<b>Motor housing</b>	MH	Motor housing to protect actuator
7)	<b>Finish</b>	<i>*nothing*</i> RAL... BS...	White uPVC (standard) Painted to RAL... Painted to BS...

Notes

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