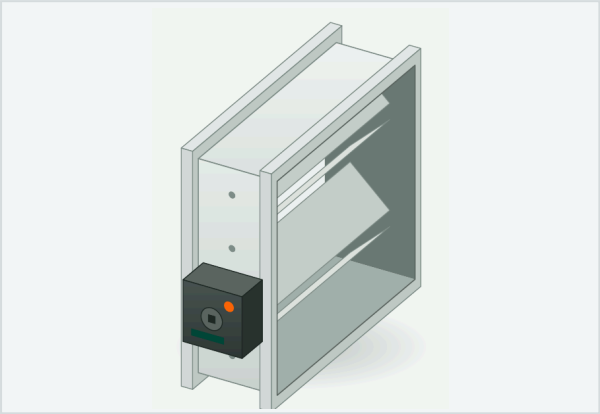
AYSU
HVAC SYSTEMS

DAMPERS · TECHNICAL DATASHEET

Product code: **AYS-DMP-VM**

MOTORIZED VOLUME CONTROL DAMPER



Air control damper with opposed aluminium blades and an actuator. Connects to building automation with on-off or modulating control.

CONTROL Motorized	CONTROL MODE On-off / modulating
SIZE Made to project	BLADES Aluminium

FEATURES

- Opposed aluminium blades
- Actuator opens, closes and holds intermediate positions
- On-off, 3-point or 0–10 V modulating control
- Connects to automation and BMS
- Blades turn together through the linkage
- Multi-blade design; sizes made to project

TECHNICAL SPECIFICATIONS

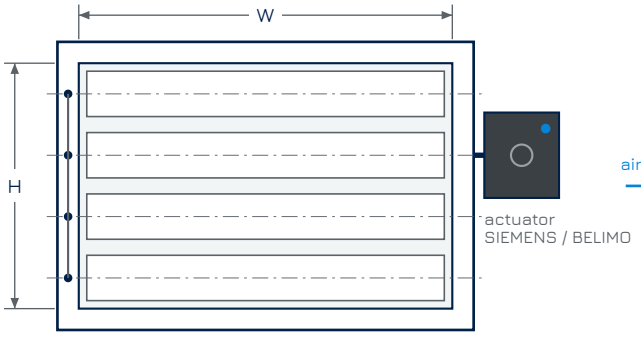
Damper type multi-blade, opposed	**Blade** aluminium profile
Control motorized	**Control signal** on-off · 3-point · 0–10 V
Actuator voltage 24 V AC/DC or 230 V AC	**Actuator** SIEMENS · BELIMO
Connection flanged	**Size** made to project, any size

APPLICATIONS

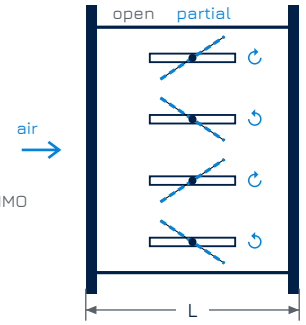
Air handling units, fresh air ducts, zone control; automatic airflow control in extract and mixed air ducts.

TECHNICAL DRAWINGS

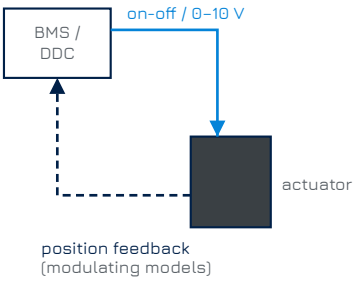
sizes to project · not to scale



FRONT VIEW



SECTION A–A · OPPOSED BLADES



CONTROL DIAGRAM

ORDERING INFORMATION

Size	W × H duct inner size and L casing length are set to project
Actuator	SIEMENS or BELIMO · 24 V or 230 V · on-off, 3-point or 0–10 V
Torque	selected by damper area (page 2)
Order code	AYS-DMP-VM-[W×H], e.g. AYS-DMP-VM-600×400

AYSU
HVAC SYSTEMS

DAMPERS · TECHNICAL DATASHEET

Product code: **AYS-DMP-VM**

MOTORIZED VOLUME CONTROL DAMPER

OPERATING PRINCIPLE

Motorized volume control damper · AYS-DMP-VM

1. **Control:** The BMS / DDC controller sends an on-off, 3-point or 0–10 V signal to the actuator.
2. **Movement:** The actuator turns the drive shaft; the linkage turns the blades together in opposite directions.
3. **Adjustment:** With modulating control the blades hold intermediate positions and airflow follows the signal.
4. **Feedback:** Modulating actuators return a position signal; models with end contacts report open / closed.

ACTUATOR OPTIONS

Series and torques based on manufacturers' documents

BRAND	SERIES	TORQUE	VOLTAGE	CONTROL MODE
SIEMENS	GDB · GLB · GEB · GBB	5 · 10 · 15 · 25 Nm	24 V AC/DC · 230 V AC	on-off · 3-point · 0–10 V
BELIMO	LM · NM · SM · GM	5 · 10 · 20 · 40 Nm	24 V AC/DC · 230 V AC	on-off · 3-point · 0–10 V

Torque selection (approx.): damper area ≤ 1 m² → 5 Nm · ≤ 2 m² → 10 Nm · ≤ 4 m² → 20 Nm · larger areas 40 Nm or multiple actuators. Final selection from the actuator maker's table by blade type and air velocity.

SELECTION TABLE

Blades fully open · ρ = 1.2 kg/m³ · calculated · sizes are examples

W × H	A_F m²	AIRFLOW [m³/h] · by duct velocity			Δp [Pa] · calculated			ζ
		3 m/s	5 m/s	7 m/s	3 m/s	5 m/s	7 m/s	
200 × 200	0.023	430	720	1,010	6.9	19.3	37.8	1.29
300 × 200	0.037	650	1,080	1,510	5.3	14.8	28.9	0.98
300 × 300	0.061	970	1,620	2,270	4.0	11.2	22.0	0.75
400 × 300	0.084	1,300	2,160	3,020	3.5	9.9	19.3	0.66
400 × 400	0.117	1,730	2,880	4,030	3.1	8.7	17.0	0.58
500 × 400	0.149	2,160	3,600	5,040	2.9	8.0	15.7	0.53
600 × 400	0.181	2,590	4,320	6,050	2.8	7.6	15.0	0.51
600 × 500	0.232	3,240	5,400	7,560	2.6	7.1	13.9	0.47
800 × 500	0.315	4,320	7,200	10,080	2.4	6.7	13.1	0.45
800 × 600	0.383	5,180	8,640	12,100	2.3	6.4	12.5	0.42
1000 × 600	0.484	6,480	10,800	15,120	2.2	6.2	12.1	0.41
1000 × 800	0.657	8,640	14,400	20,160	2.1	5.8	11.4	0.39
1200 × 800	0.793	10,370	17,280	24,190	2.0	5.7	11.2	0.38
1200 × 1000	1.002	12,960	21,600	30,240	2.0	5.5	10.8	0.37
1500 × 1000	1.261	16,200	27,000	37,800	1.9	5.4	10.6	0.36

INSTALLATION AND MAINTENANCE

1. **Installation:** The damper is flange-connected to the duct; ducts are supported separately, the casing is not loaded and the blades must turn freely.
2. **Position:** Install with access to the actuator for service and adjustment; provide a ceiling access panel if needed.
3. **Electrical:** Connect the actuator to its label voltage; wire control and feedback cables to the BMS / DDC panel.
4. **Maintenance:** Regularly check free blade movement, the linkage and the actuator mounting.

VALIDITY

Sizes in the table are examples; the damper is made to project in any size. Airflow and Δp are calculated with fully open blades, a 20 mm frame and 10 % blade blockage (not laboratory tested); Δp rises when throttled.

SYMBOLS

A_F	free area (m²)
ζ	pressure loss coefficient
Opposed blades	adjacent blades turn in opposite directions
BMS / DDC	building automation controller
W × H	duct inner size