

# Damper - rectangular

# DJP



## Description

DJP is a rectangular control and shut-off damper.

DJP has opposing aerodynamic damper blades that are rotated via a lever device. The damper is supplied with an LS connection system for rectangular ducts. The damper can be used for pressure or volume flow regulation with external control options (open, closed, min., max.) depending on the form of control/regulation.

DJP is available with a spring return motor, so the damper can be used as a smoke damper. The damper can be controlled by an FRA (as a VRA) or a PR regulator, directly by a temperature sensor or BMS system (2–10 V modulating) or as a slave for another damper (mechanical slave operation with the same damper position).

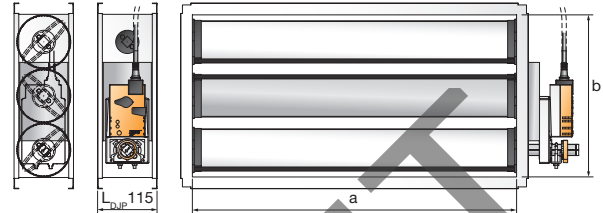
When ordering, it is important to specify the form of control, and whether the damper motor must be programmable. All DJP dampers have Belimo motors installed.

## Order code

Product	DJP	aaa x bbb	c	d	e
Type					
DJP					
Dimension					
(a x b) 400x200 - 800x300					
Motor type					
0 = Standard					
3 = Spring return					
Form of control					
R = Regulator-controlled					
S = Slave or sensor-controlled					
Programming					
U = Without programming					
P = Programmable					

Example: DJP - 600 -300 - 0 - R - U

## Dimensions



### Standard sizes (a x b):

400 x 200, 500 x 200, 600 x 200, 600 x 300, 800 x 300

## Technical data

### Motor overview

DJP Model	Motor 0 (Standard)	Motor 3 (Spring return)
DJP-RU	NM24A V	NF24A-MF
DJP-RP	NM24A-MF	NF24A-MF
DJP-SU	NM24A-SR	NF24A-SR
DJP-SP	NM24A-MF	NF24A-MF

**RU** Used only with PR ( and FRU) and is preset to a VAV input signal:  $6 \pm V$ .

**RP** Has a programmable motor, is used together with PR and is preprogrammed for a VAV input signal:  $6 \pm V$ . Has modulating output signal indicating damper position for mechanical control of a slave damper.

**SU** Has a motor, which is controlled by modulating input signal (2-10 V). Also has a modulating output signal indicating damper position.

**SP** Has a programmable motor, which can be controlled by optional input signal (Standard modulating). Also has a modulating output signal indicating damper position for mechanical control of a slave damper.

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### Damper dimensioning

When dimensioning the dampers inherent noise from the dampers and their regulating properties (damper characteristics) must be taken into consideration.

If excessively large dampers are used, the working area (angle of rotation) at given  $V_{\min}$  and  $V_{\max}$  may be so limited that regulation does not function satisfactorily.

Efforts must be made to use damper dimensions that result in the largest possible working areas (angles of rotation).

Due to regulation accuracy, working areas with damper angles  $> 75^\circ$  should be avoided. The diagram shows the damper position at given pressure losses and volume flows.

### Example:

The example shows the working area for a XXX x XXX mm damper, which works between

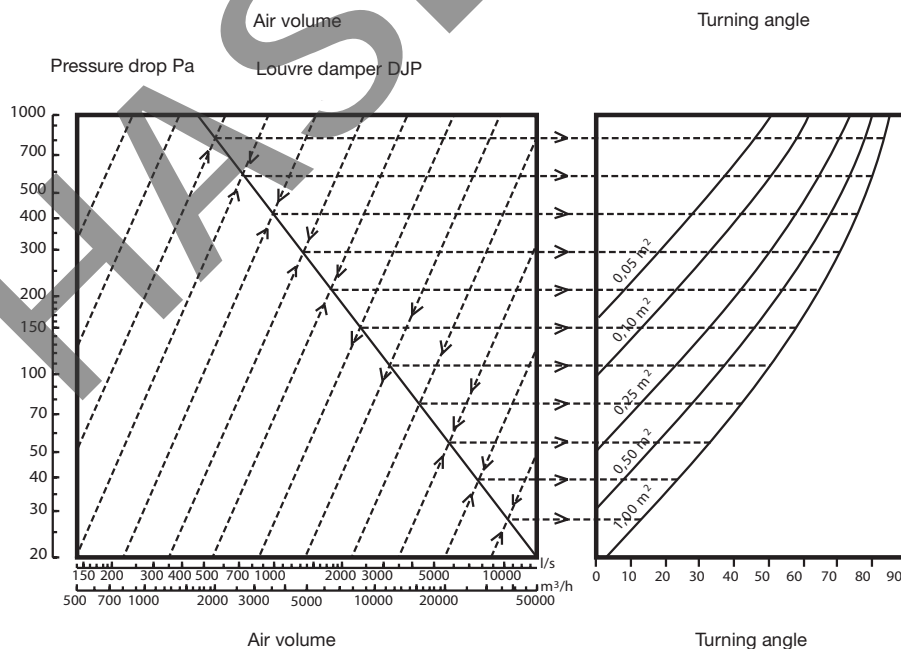
$$V_{\max} = 1,236 \text{ m}^3/\text{h}; \Delta p = 50 \text{ Pa}$$

and

$$V_{\min} = 309 \text{ m}^3/\text{h}; \Delta p = 100 \text{ Pa}.$$

The diagram shows damper positions  $XX^\circ$  and  $XX^\circ$ .

### Correction of sound effect level for other damper sizes



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## Technical data

Frequency-related sound effect level.

DJP-1m <sup>2</sup>		Sound power level [L <sub>w</sub> ] [dB]							
Duct velocity	Pressure difference [Pa]	Centre frequency [Hz]							[L <sub>WA</sub> (A)] [dB(A)]
		125	250	500	1000	2000	4000	8000	
1 m/s	50	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	100	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	200	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	400	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
2 m/s	50	62	60	59	53	50	45	42	60
	100	66	64	62	59	57	54	52	65
	200	71	65	63	65	65	61	58	70
	400	81	80	79	81	81	78	76	86
3 m/s	50	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	100	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	200	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	400	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
4 m/s	50	65	63	62	56	53	48	45	63
	100	69	67	65	62	60	57	54	68
	200	74	68	67	68	68	64	60	73
	400	84	83	82	84	84	81	79	89
5 m/s	50	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	100	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	200	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	400	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
6 m/s	50	67	65	63	57	54	49	45	64
	100	72	68	67	65	63	58	49	70
	200	75	69	68	70	71	66	63	76
	400	85	84	83	86	85	83	80	91
7 m/s	50	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	100	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	200	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
	400	xxx	xxx	xxx	xxx	xxx	xxx	xxx	xxx
8 m/s	50	68	66	63	59	56	51	48	65
	100	74	73	71	67	65	59	56	73
	200	80	80	79	75	75	70	65	82
	400	87	86	85	87	87	84	81	92

Correction of sound effect level for other damper sizes

Area [m <sup>2</sup> ]	0,1	0,2	0,4	0,6	0,8	1,0	1,5	2,0
dB correction	-10	-7	-4	-2	-1	0	+2	+3