


VAV diffuser OD-17
Description:

- Supply function with varying volume flow (VAV)
- Radial jet type of supply air
- Horizontal air flow pattern
- Suitable for isothermal supply or cooling, up to $\Delta K = - 10$ K
- Motorized aerodynamically designed regulation free outlet area from 20 % to 100 %. This ensures constant throw length at constant static pressure in duct for maintain Coanda effect
- Gasket lip on spigot
- Flush-mounted diffuser
- Standard color RAL 9010, 30% gloss

Quick selection diagram

Type	Q	[l/s]	27.8	37.5	47.2	56.9	66.7
		[m ³ /h]	100	135	170	205	240
OD-17/1(2,3,4)/B size 160	L _{WA}	[dB (A)]	21	27	33	37	42
	Δp_t	[Pa]	9	16	25	36	50
	L _{0.2}	[m]	1.8	2.3	2.8	3.2	3.5
	L _{min}	[m]	< 1.2	1.2	1.6	1.9	2.3

Type	Q	[l/s]	41.7	55.6	69.4	83.3	97.2
		[m ³ /h]	150	200	250	300	350
OD-17/1(2,3,4)/B size 200	L _{WA}	[dB (A)]	23	29	35	39	44
	Δp_t	[Pa]	9	17	26	37	51
	L _{0.2}	[m]	2.4	2.9	3.4	3.9	4.2
	L _{min}	[m]	< 1.2	1.6	2.0	2.4	2.8

Type	Q	[l/s]	55.6	69.4	83.3	97.2	111.1
		[m ³ /h]	200	250	300	350	400
OD-17/1(2,3,4)/B size 250	L _{WA}	[dB (A)]	25	30	35	40	43
	Δp_t	[Pa]	10	15	22	30	39
	L _{0.2}	[m]	2.2	2.7	3.2	3.7	4.2
	L _{min}	[m]	1.3	1.7	2.1	2.4	2.7

* L_{WA}, Δp_t , L_{0.2}, L_{min} are given at 100 % opened regulation damper

L_{WA} ... A-weighted sound power level

Δp_t ... Total pressure drop calculated to normal conditions

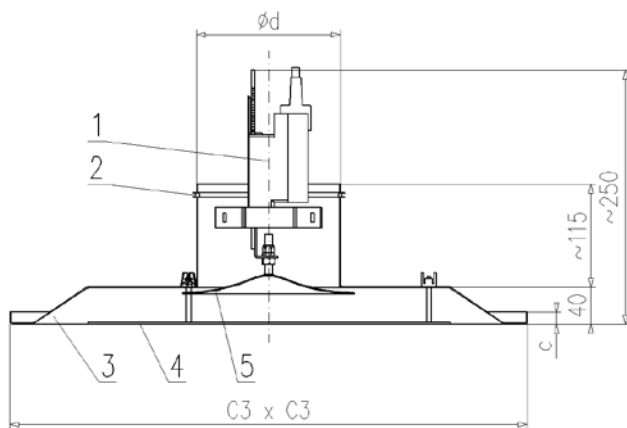
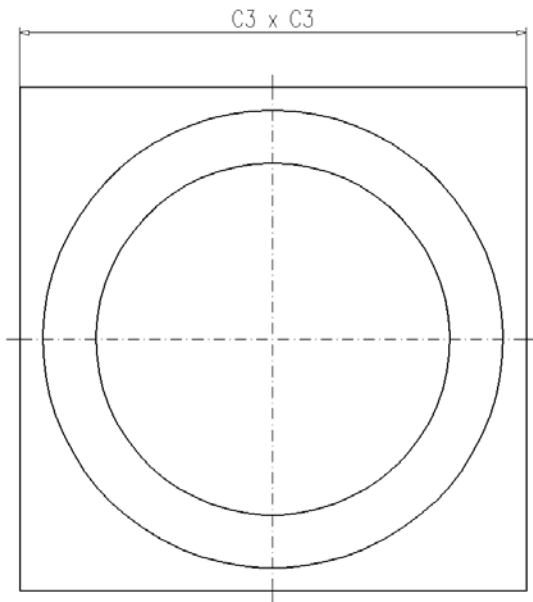
L_{0.2} ... Isothermal throw length of supply air jet, when it's core speed drops down to 0.2 m/s

L_{min} ... Needed minimal distance between two centerlines of diffuser, for achieving air velocity jet below 0.2 m /s

Q ... Air flow

Condition for L_{min}

- Room height ... H=2.8 m
- Occupied zone height ... 1.8 m
- Room temperature ... 24 °C
- Supply temperature when cooling ... $\Delta T = - 6$ K



(B) VAV version

Dimensions, weights, used material and surface finish

Bottom plate:

- Material: sheet steel
- Standard surface finish: powder-coated in RAL 9010, 30 % gloss
- Bottom plate can be colored on customer request in other RAL color

1. Actuator BELIMO LH24A-MP100
2. Lip rubber gasket
3. Bottom plate sheet steel
4. Bottom plate dispersion plate *
5. Regulation damper

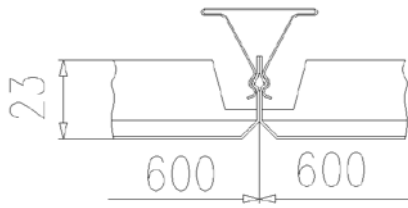
* Safety wire for bottom plate dispersion plate is standard and prevents falling of plate in critical situations.

Bottom plate	size	C3 *	c	approx. weight
	/			mm
OD-17/1/B	160	600	23	7.6
	200			8.7
	250			9.3
OD-17/2/B	160	600	21	7.6
	200			8.7
	250			9.3
OD-17/3/B	160	595	8	7.6
	200			8.7
	250			9.3
OD-17/4/B	160	600	8	7.6
	200			8.7
	250			9.3

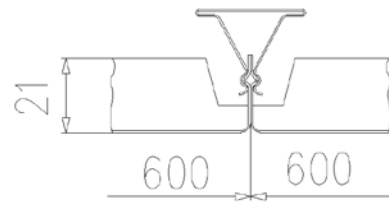
* tolerances according to standard DIN 7168 T1, middle tolerance class (m) ... ±0.8 mm

Installation into ceiling

Dampa clip in - with bevelled edge (version A1 and Z1)

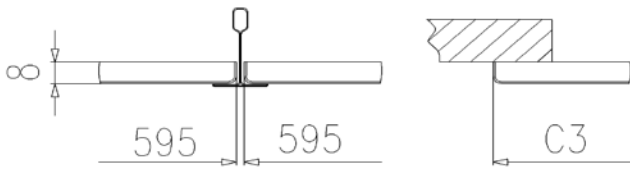


Dampa clip in - with square edge (version A2 and Z2)

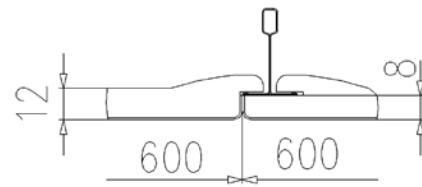


Standard ceiling 595x595 (version A3 and Z3)

* for dimension C3 look in table for bottom plate dimension



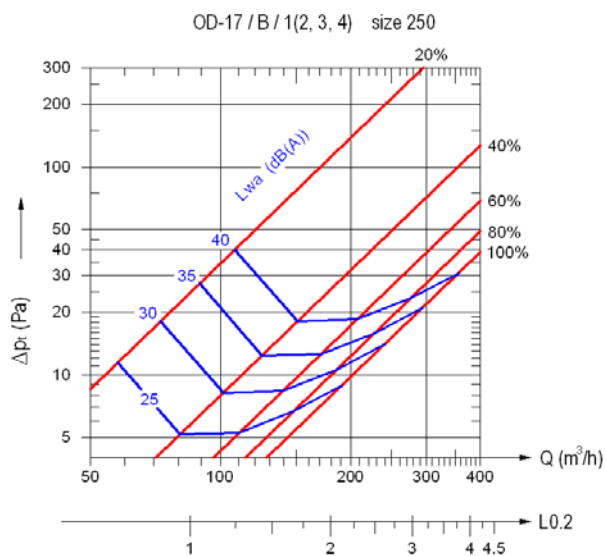
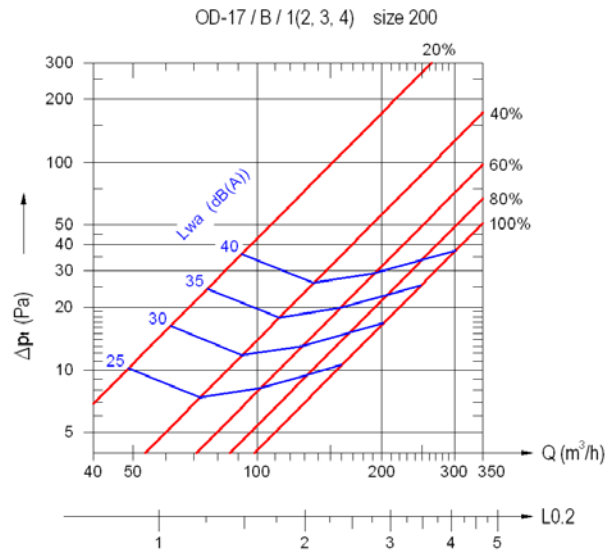
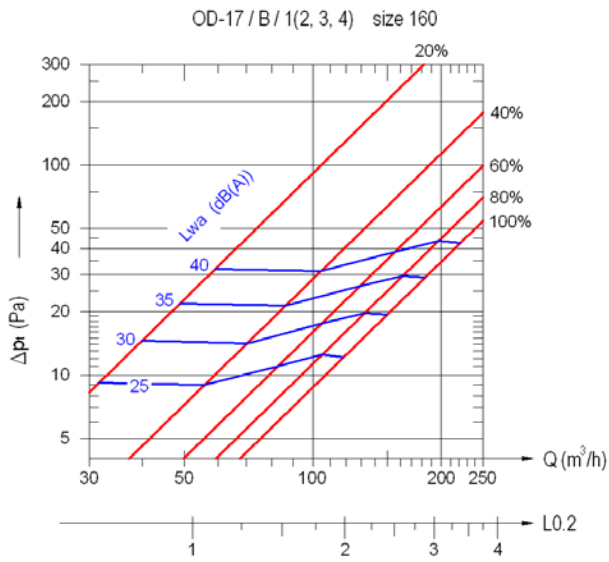
Ecophon kant D and Rockfon D-XL (version A4 and Z4)



Pressure drop, sound level, throw length

Damper opening: 20 % ... min. opened, 100 % ... max. opened

L_{0.2} ... Isothermal throw length of supply air jet, when it's core speed drops down to 0.2 m/s at 100 % opened regulation damper (max. air flow)



Type	Sound attenuation * [dB]							
	Octave [Hz]							
	63	125	250	500	1k	2k	4k	8k
OD-17/1(2,3,4)/B size 160	18	16	8	5	13	12	14	10
OD-17/1(2,3,4)/B size 200	25	17	10	8	15	15	13	11
OD-17/1(2,3,4)/B size 250	26	17	11	7	19	19	10	11

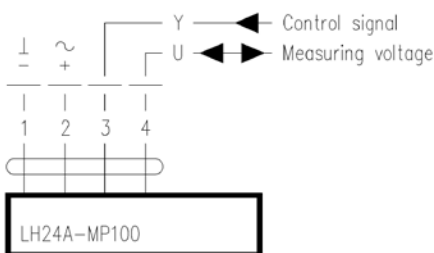
* Sound attenuation represents insertion losses; this means reduction in the level of sound power because unit (swirl diffuser OD-17/B) is inserted.



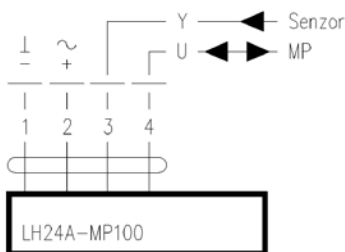
Home position

Pos. direction of stroke switch	Home position
 1 Y = 0 V extended	
 0 Y = 0 V retracted	

Electrical installation – conventional operation



Electrical installation – Operation on the MP-Bus



Actuator BELIMO LH24A-MP100

Direction of stroke switch

- Position is set from factory and must be set on 0.
- When the supply voltage is switched on for the first time, i.e. at commissioning or after pressing the »gear disengagement« switch, the actuator travels to the home position showed in table (home position).

Electrical installation

- Connection via safety isolating transformer!
- Other actuators can be connected in parallel. Please note the performance data!
- Note, main power supply voltage: a device that disconnects the pole conductors (minimum contact gap 3mm) is required for isolation from power supply.

Adaptation of operating range

- Adjustment of the operating range and measuring signal U to match the mechanical stroke adjustment is set automatically whenever the supply voltage is switched on, manual triggered by pressing »Adaption« button or with the PC-tool.

Electrical data

Nominal voltage	AC 24 V, 50/60 Hz / DC 24 V	
Nominal voltage range	AC 19.2 ... 28.8 V / DC 21.6 ... 28.8 V	
Power consumption	In operation	2.5 W @ nominal force
	At rest	1.2 W
	For wire sizing	5 VA
Connection	Cable 1 m, 4 x 0.75 mm ²	

Functional data

Factory settings

Control	Control signal Y	DC 0 ... 10 V, input impedance 100 kΩ
	Operating range	DC 2 ... 10 V
Position feedback (Measuring voltage U)	DC 2 ... 10 V, max. 0,5 mA	
Running time	150 s / 100 mm	
Sound power level	Max. 35 dB (A) ... at 150s running time	

Safety

Protection class	III Safety extra-low voltage / UL Class 2 Supply
Degree of protection	IP54 in any mounting position NEMA2, UL Enclosure Type 2
EMC low-voltage directive	CE according to 2004/108/EC
Ambient temperature range	- 30 ... + 50 °C
Non-operating temperature	- 40 ... + 80 °C
Ambient humidity range	95% r.H., non-condensating

Ordering key

OD - 17 / 1 / B size 160 (200, 250)

	B	VAV version *
	1	air supply, ceiling type DAMPA Clip-In with bevelled edge
	2	air supply, ceiling type DAMPA Clip-In with square edge
	3	air supply, standard ceiling type 595x595
	4	air supply, ceiling type Ecophon Kant D and Rockfon D-XL

* varying volume flow version with BELIMO LH24A-MP100 actuator