Flow regulator for supply air   DBV

Description

DBV is a volume flow regulator used for VAV regulation of the supply air in a terminal duct for an active chilled beam. Also suitable together with eg. wall diffusers.

DBV is equipped with a unique linear cone damper technology, which makes it possible to regulate up to 200 Pa with low sound level. The minimum air flow k-value at closed position is 0,73 (7,3 l/s at $\triangle p_t = 100$ Pa)).
The built-in VAV actuator is delivered pre-programmed with damper characteristic and in combination with a stable flow measurement over the damper, it makes the VAV regulation very accurate and reliable.

DBV can be installed directly in a terminal duct in front of the active chilled beam. DBV is not suited for exhaust air.

- Unique linear cone damper
- Low sound levels
- Stable flow measurements
- Reliable and accurate VAV regulation
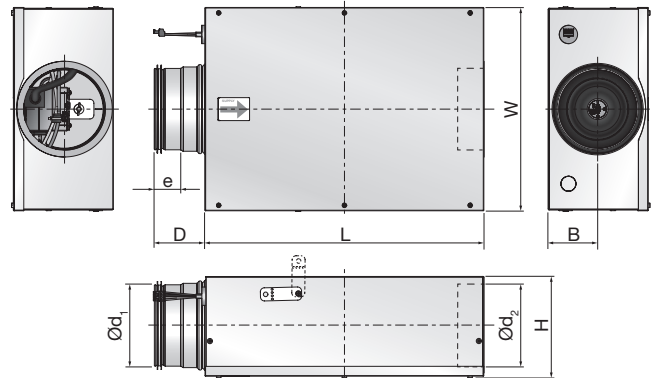
Order code

Product	**DBV**	**125**	**125**	**MP**
Type				
DBV				
Duct connection Ød$_1$				
Ø125				
Diffuser dimension Ød$_2$				
Ø125				
Motor type				
MP				

Example: DBV-125-125-MP

Factory settings

	Standard	**On request**
Min. air flow	0	Other min. flow
Max. air flow	V$_{nom}$ (7m/s)	Other max. flow
Control signal	2-10 V	0-10 V
Feedback signal	Damper position	Air flow

Dimensions

Ød$_1$	Ød$_2$	B	D	e	H	L	W	m
[mm]				[mm]				[kg]
125	125	75	78	40	155	426	310	6,1

Motor type

Type	Motor
MP	LHV-D3W-MP LIN

Maintenance

Easy access to inner parts. The motorized damper unit can be removed to enable cleaning of internal parts of the plenum box and gives access to the duct as well.
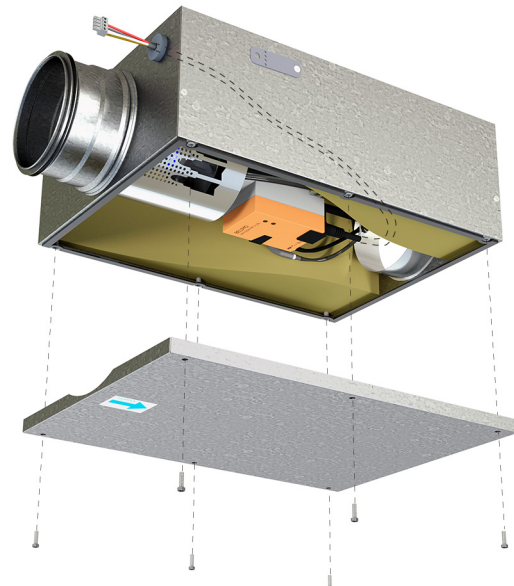
Materials and finish

Material: Galvanised steel
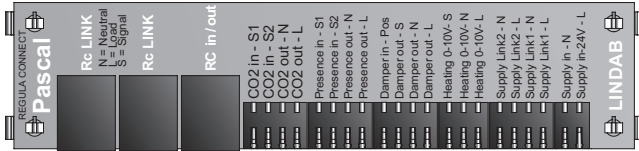Standard colour: Galvanised steel

The plenum box is avalable in other colours. Please contact Lindab's sales department for further information.

Flow regulator for supply air

DBV

Accessories

Regula Connect Pascal card

Regula Combi controller unit

Technical data

Settings

DBV is preset and calibrated from factory with the following air flow ($V_{nominal}$) setting corresponding to a velocity of 7 m/s.

Ød_1	Ød_2	V_{nom}	
[mm]		l/s	m³/h
125	125	86	309

Sound attenuation

Sound attenuation ΔL of the unit with fully open damper, see table below.

| Ød_1	Ød_2	Centre frequency [Hz]							
[mm]		63	125	250	500	1K	2K	4K	8K
125	125	10	7	5	7	13	20	29	25

Capacity

Air flow q_v [l/s] and [m³/h], total pressure Δp_t [Pa] and sound power level L_{WA} [dB(A)] for the duct (flow noise) can be seen in the diagram.

Frequency-related sound power level

The sound power level in a frequency band is defined as $L_{Wok} = L_{WA} + K_{ok}$. Kok values are specified in the chart beneath the diagram.

DBV-125
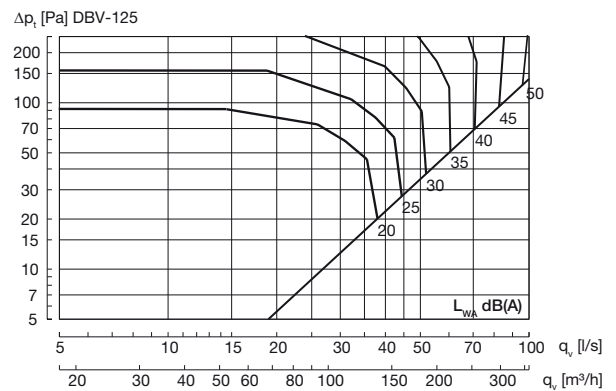
Hz	63	125	250	500	1K	2K	4K	8K
K_{ok}	8	5	-1	-2	-6	-10	-14	-13

Order code

Product	**Regula xxxxx-xxxxx**
Type	
Regula Combi, Regula Connect Pascal	

Example: Regula Combi

Lindab®

Flow regulator for supply air DBV

Technical data
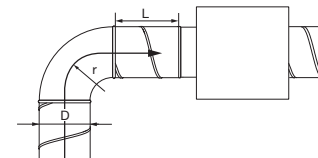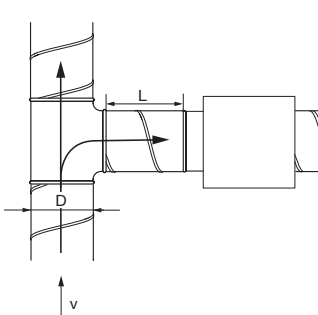
Sound data table in frequencies

Sound power level L_{WA} [dB] in each octave band frequency for duct noise is shown in the table below for different combinations of air flow q_v in [l/s] or [m³/h] and total pressure loss $\triangle p_t$ [Pa].

Ød₁ [mm]	Ød₂ [Pa]	Duct velocity v = 2 m/s									Duct velocity v = 3 m/s									Duct velocity v = 4 m/s								
		Octave band feequency [Hz]									Octave band feequency [Hz]									Octave band feequency [Hz]								
		63	125	250	500	1000	2000	4000	8000	A	63	125	250	500	1000	2000	4000	8000	A	63	125	250	500	1000	2000	4000	8000	A
		q_v = 25 l/s / 88 m³/h									q_v = 37 l/s / 133 m³/h									q_v = 49 l/s / 177 m³/h								
125	20*	18	18	<15	<15	<15	<15	<15	<15	<15	23	25	20	18	<15	<15	<15	<15	19	30	33	28	26	23	<15	<15	<15	27
	50	26	23	16	15	<15	<15	<15	<15	16	28	29	21	20	15	<15	<15	<15	21	32	34	28	27	23	<15	<15	<15	28
	100	31	24	20	17	<15	<15	<15	<15	21	33	32	25	24	19	15	<15	<15	25	35	36	29	28	24	17	<15	15	29
	200	33	26	23	22	18	20	18	15	26	38	33	29	26	22	20	19	17	29	40	38	33	31	27	23	21	19	33
	300	34	27	25	24	21	23	21	19	29	39	33	29	26	23	22	20	19	30	41	39	34	31	28	25	23	22	34

') At 4 m/s the pressure loss is 33 Pa at fully open damper.

Air flow measurement

Recommended lengths L of straight duct between a disturbance and DBV .

Bend with radius r ≥ D	1D
Box installed at the side branch of the distribution duct; for velocities in the distribution duct v ≥ 4 m/s	3D
A general distúrbance (none of the cases above)	1D - 4D

Accuracy

Damper position > 30% (Open = 100%)
The highest value of
7% of reading or 1% of V_{nom} (flow at 7 m/s)
Damper position < 30% (Open = 100%)
The highest value of
7% of reading or 2,5% of V_{nom} (flow at 7 m/s)