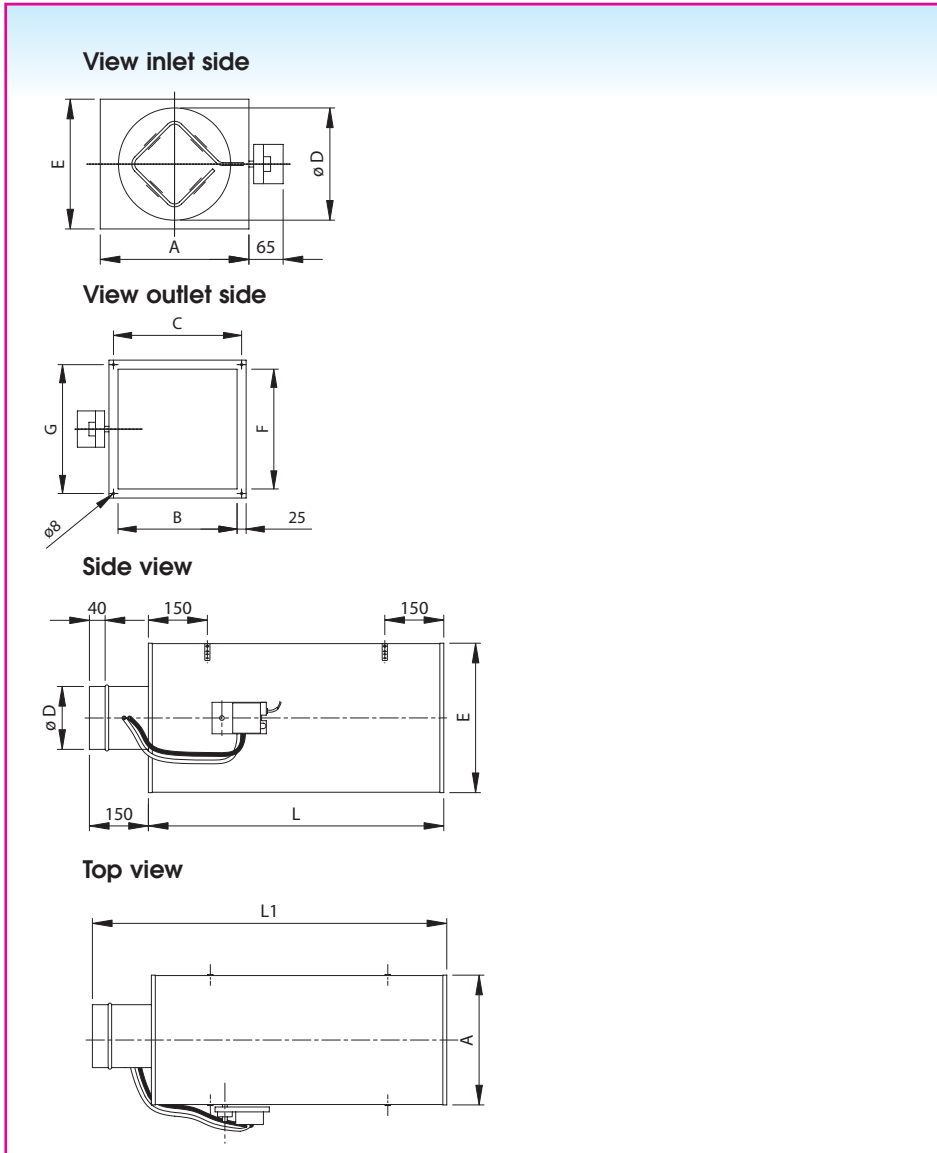


VAV TERMINAL BOXES BA • BT

Installation dimensions



Application

The terminal boxes BA/BT are designed for single duct high velocity constant or variable flow rate applications and can be used both in supply (BT) and exhaust air (BA). The air flow rate control is pressure independent and achieved by a precision engineered damper which modulates in response to a differential pressure sensor and an electronic velocity control device with motor.

A direct communication is possible between the VAV boxes and the central control area.

The volume control and the complete shut-off of the VAV box are obtained by the same damper.

Taking into account the reduced pressure loss in the damper, the boxes need a minimum of inlet pressure which results in remarkable savings in the total energy requirements.

Technical information

Characteristics

- designed for flow rates from 75 up to 6000 m³/h
- available in 7 sizes
- standard equipped with silencer; secondary silencer available
- as option, a heat exchanger can be mounted on the box outlet
- Casing air leakage rate complies with:
 - DIN V 24194 Teil 2 class III
 - EN NBN 1751 class A&B
 - EN13779 and NBN 12237 class A&B
 - specifications 105 of 1990 class A&B

Size	q Airflow (m ³ /h)			A	B	C	Ø D	E
	Min.	Max.	Nom.					
125	75-150	150-500	500	250	200	220	123	255
160	89-300	300-1000	1000	300	250	270	158	255
200	125-420	420-1400	1400	450	400	420	198	255
250	201-675	675-2250	2250	450	400	420	248	355
315	321-1080	1080-3600	3600	650	600	620	313	355
355	401-1350	1350-4500	4500	655	605	625	353	410
400	535-1800	1800-6000	6000	700	650	670	398	455

Size	F	G	L	L ₁
125	200	220	1200	1350
160	200	220	1200	1350
200	200	220	1200	1350
250	300	320	1500	1650
315	300	320	1500	1650
355	355	375	1800	1950
400	400	420	1800	1950

All dimensions in mm.

- Control damper leakage complies with:
 - EN NBN 1751 class 1, 2 and 3

Controls

- each VAV box is equipped with an electronic velocity regulator and motor; together with the pressure differential sensor it guarantees a pressure independent variable or constant air flow
- all controls are mounted externally for an easy access
- motor : Belimo Compact LMV-D2 MP
 - power supply : 24 VAC/DC
 - control signal 0-10 VDC / 2-10 VDC
 - integrated regulator
 - min. and max. air flow rates (VAV) to indicate by order; adjustment always possible on site
 - in case of constant flow rate control (CAV), indicate requested constant flow rate

- documentation and wiring diagram available on simple request

Construction

- casing in galvanised sheet steel
- internal surfaces acoustically and thermally insulated with glass fibre, coated to prevent erosion
- air flow control damper in extruded aluminium with keyed shaft; internal pivot points have lubricant-free bearings
- pressure differential sensor in aluminium; connection sensor-controller by plastic tubes

Specifications description

Example :

VAV box in galvanised sheet steel, equipped with electronic Belimo (LMV-D2 MP) controller, built-in aluminium pressure differential sensor and integrated silencer. Internal insulation is standard. The aluminium single blade damper has lubricant-free bearings.

Type BT . . . B5
Size ... mm.

Accessories

Water coils :

- made out of copper tubes and aluminium fins - fin pitch = 3,2 mm
- mounted in a galvanised frame, with flanges, and can be bolted on the VAV box outlet; by this the coils are easy to remove without damaging the VAV box
- the coils have standard threaded female connections.
- coils are available in 2 or 3 rows and designed for hot water up to 115° C at a working pressure of 16 bar and tested to a pressure of 30 bar at 20° C
- coils are always delivered separately, not mounted

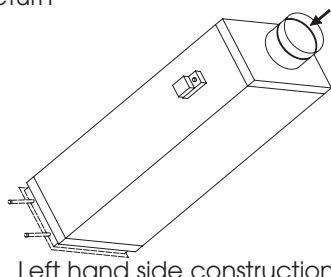
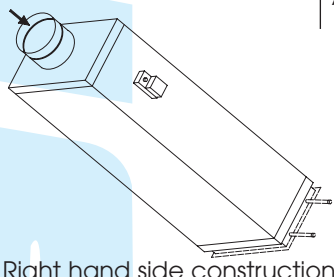
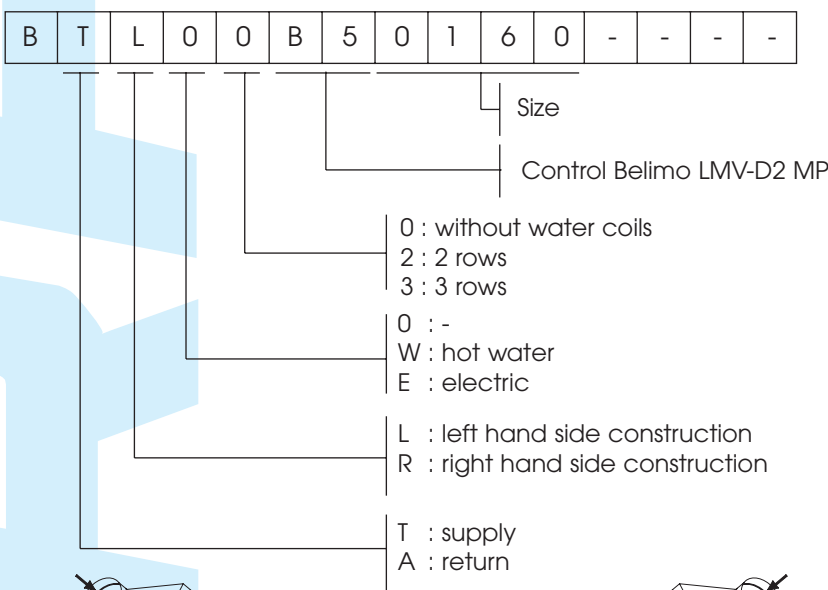
Silencers :

- to reduce the noise on the low pressure side, a secondary silencer can be added to the VAV box
- this silencer is made out of galvanised sheet steel and internally acoustically insulated. Complete with flanges for bolting on to VAV box and ductwork from the VAV box.

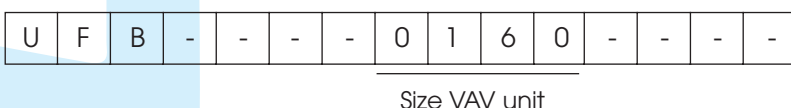
How to order

VAV-box for supply, size 160 mm, left hand side construction, without reheat coil.

1) VAV terminal unit:



2) Secondary silencer :

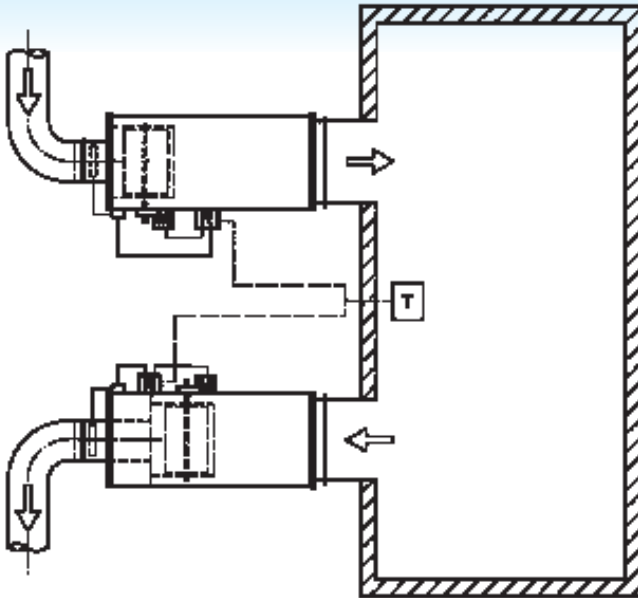


Fixing

- for easy connection to low velocity ductwork, rectangular outlets are fitted with 25 mm large flange
- equipped with 4 mounting straps
- controls can be mounted on the right or left side of box position to be confirmed at time of order

VAV TERMINAL BOXES BA • BT

Controls : example : Supply - Return terminal units



The classic VAV-system (Variable Air Volume) belongs to the so called "air-only" group of design. This means that all the thermal performance required is achieved through the supply air.

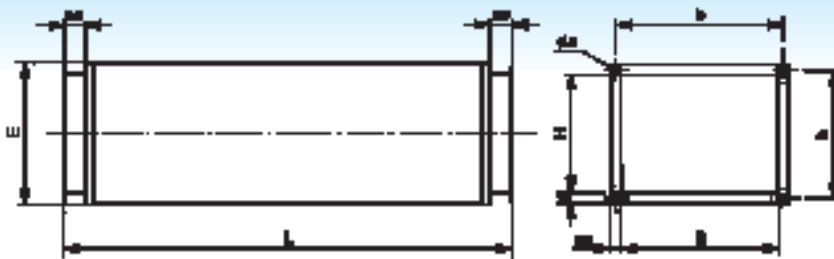
The temperature controller (T) measures the actual temperature in the room, compares it with the temperature set-point and feeds this information (air volume demand) to the VAV air volume controller (R).

In this way the matching to the actual thermal load of the room is obtained by regulating (varying) the volume of the supply air remains constant and the volume of the air delivered by the fan is reduced.

The application of these systems allows individual room control as well as zone control, including supply-air and/or exhaust-air follow-up.

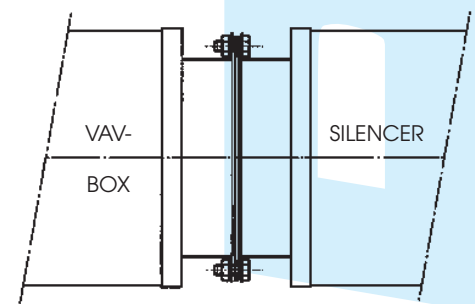
This solution meets the tough demands set by experienced designers : independency of supply pressure fluctuations, minimal supply pressure required, accurate room pressure conditions, possibility for override need-based controls, master slave combinations, etc.

Secondary silencers



Nom.	E	B	H	b	h	L
125	255	200	200	220	220	1000
160	255	250	200	270	220	1000
200	255	400	200	420	220	1000
250	355	400	300	420	320	1500
315	355	600	300	620	320	1500
355	410	605	355	625	375	1500
400	455	650	400	670	420	1500

Size	dB/Okt.						
	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz
125 160 200	-3	-7	-12	-15	-20	-20	-15
250 315 355 400	-4	-12	-20	-25	-23	-22	-15



All dimensions in mm.

