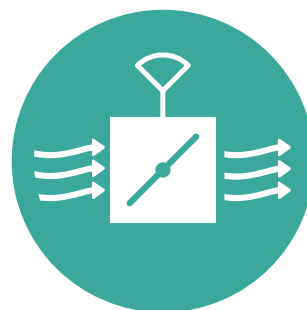
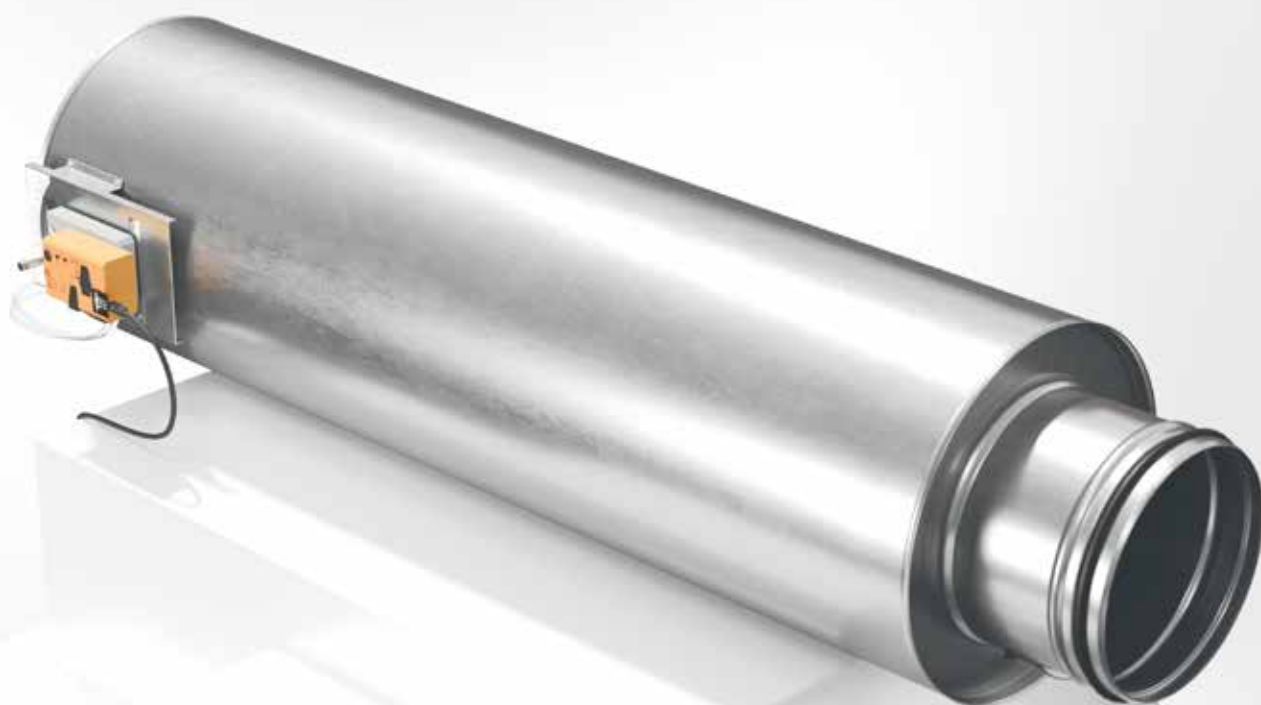


# BVAV-LD

Variable/constant flow device  
with built-in silencer



VAV, CAV & FLOW  
MEASURING DAMPERS



21/01/2015

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## Quick facts

- Sizes Ø125 mm to Ø400 mm
- Supply air and exhaust air versions
- Integrated straight duct
- Compact version. Dynamic pressure sensor.
- Max and min. air flow set before delivery
- Calibrated before delivery
- Available in MagiCAD

## Use

The BVAV-LD is an electronically variable/constant flow device with a built-in silencer. The unique design of the unit means that no straight duct is necessary before the unit, thus allowing it to be fitted immediately after a bend or union piece. The BVAV-LD is available in supply air and exhaust air versions. The VAV section is in the compact design with regulator and actuator (NMV-D2 MP-BT) as one unit. The BVAV-LD is available in sizes Ø125-400 mm. The device is delivered with factory set minimum and maximum air flows. The silencer part is fitted internally with a baffle and a cleanable, type approved surface layer Protec®.

## Material, surface treatment

BVAV-LD is manufactured as standard of galvanized steel plate. The absorption material consists of mineral wool with a type approved surface layer, Protec®. The measuring tube is manufactured in extruded aluminium. BVAV-LD can also be provided with a lacquered finish. The device is delivered as standard in pressure class A and air tightness class 2. Casing and parts in hot galvanised sheet steel as per environmental class C3.

## Specification

Example: **BVAV-LD - 1 - 160 - 150/80**

Version:

Supply air = 1

Exhaust air = 2

Size:

Ød, as per size table

Set air flow:

Max/Min air flow l/s

*NOTE! If the devices are to be used as master/slave, this must be specified.*

Accessories

**Union piece**

**Air quality sensor aSENSE VAV**

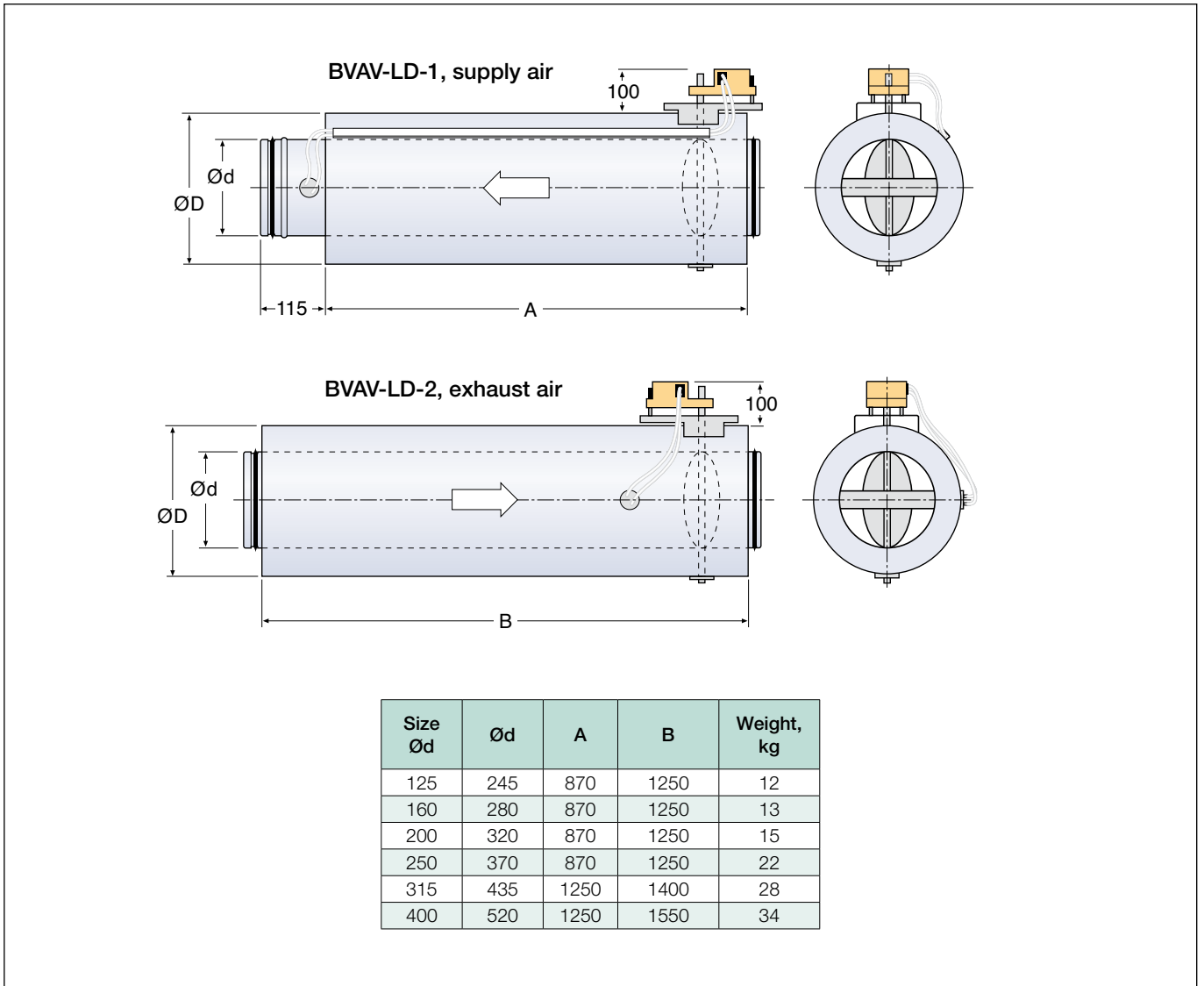
**Timer TEL**

**Silencers**

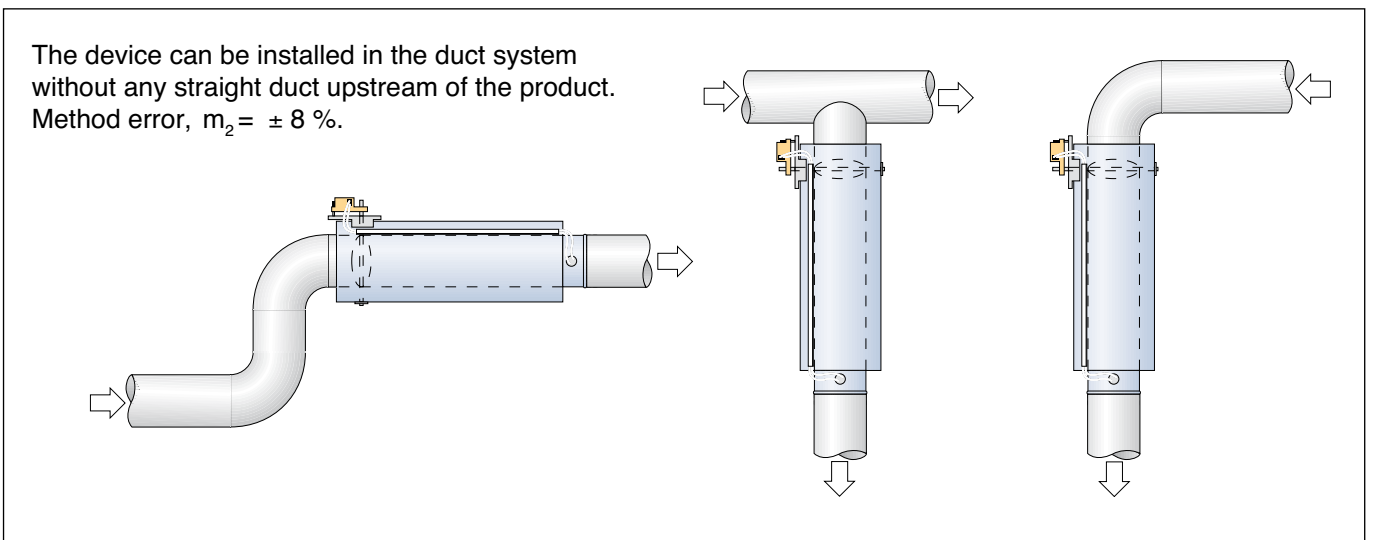
**Summing unit eSUM**



Size and weight



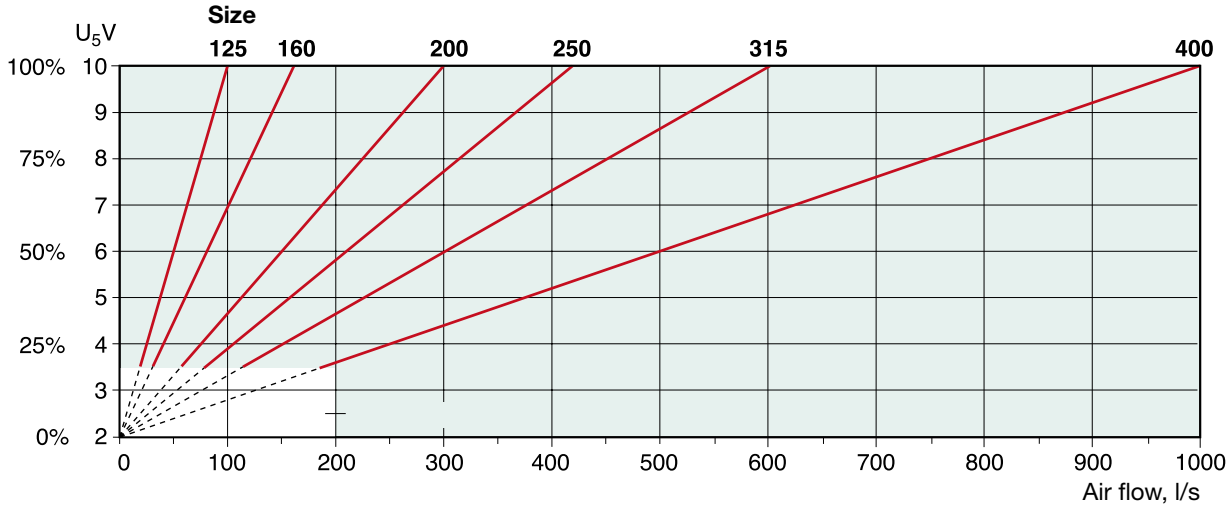
Installation





## Air flow areas

The diagrams show the relationship between nominal flow and the output signal ( $U_5V$ ) for each size.



## Operation range

Size	Nom. air flow l/s	Max. air flow l/s	Min. air flow l/s
125	100	30-100	20-80
160	160	50-160	35-150
200	300	90-300	50-240
250	420	130-420	90-340
315	600	180-600	140-480
400	1000	300-1000	240-800

Max. adjustable air flow is 30-100 % of nom. air flow.  
 Min. air flow can be regulated between 20-80 % of max. air flow.  
 Min. air flow can be set max. 80 % of max. air flow.

Correction of sound power level,  $L_{Wok}$ , in octave band

$$L_{Wok} = L_{wa} + K_{ok}$$

Correction,  $K_{ok}$

## Insertion loss

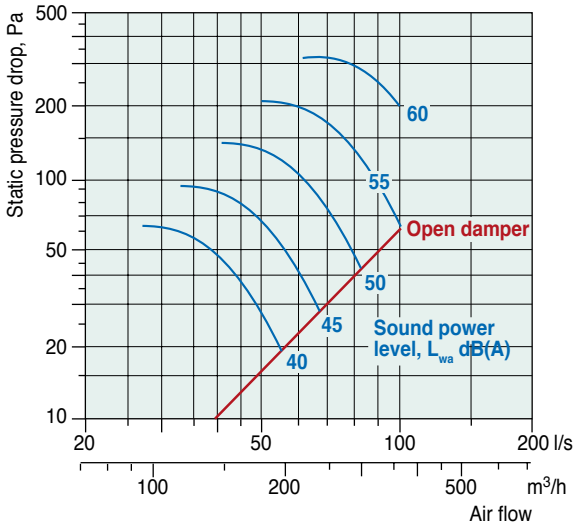
Size Ød	Insertion loss in octave band dB. Mid frequency Hz.							
	63	125	250	500	1K	2K	4K	8K
125	6	7	15	24	36	43	25	13
160	4	6	14	25	40	44	24	14
200	5	9	16	26	37	46	26	17
250	7	8	19	28	41	51	33	23
315	6	7	13	25	40	51	31	21
400	5	6	11	20	29	45	22	18

Size Ød	Mid frequency Hz						
	125	250	500	1K	2K	4K	8K
125	10	-1	-5	-11	-14	-12	-24
160	8	0	-3	-9	-11	-9	-20
200	5	0	-4	-10	-11	-9	-20
250	9	2	-4	-11	-16	-13	-27
315	10	3	-5	-11	-16	-14	-28
400	12	4	-6	-11	-17	-15	-30

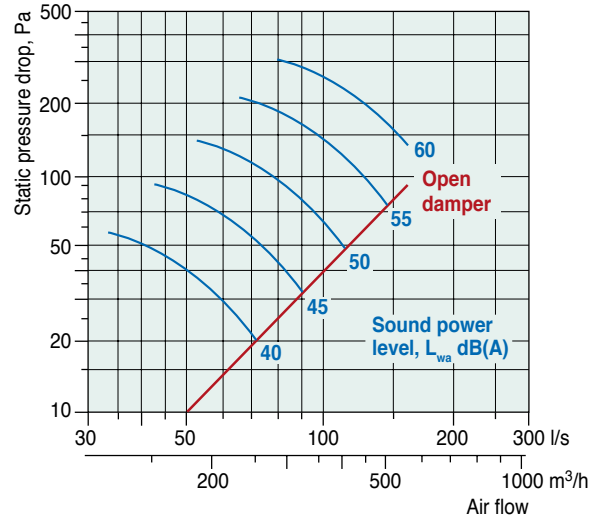


Size chart

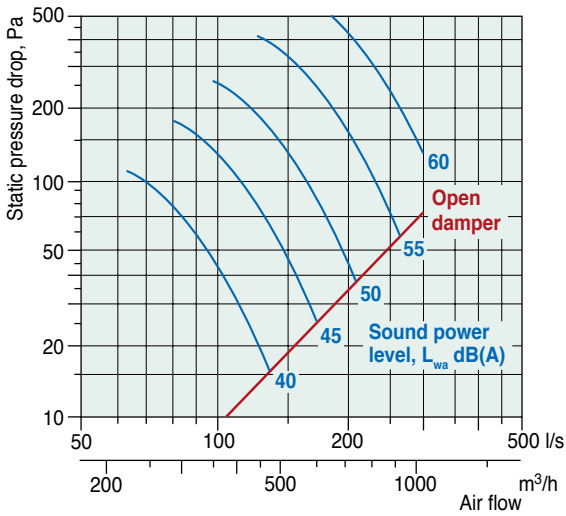
Size 125



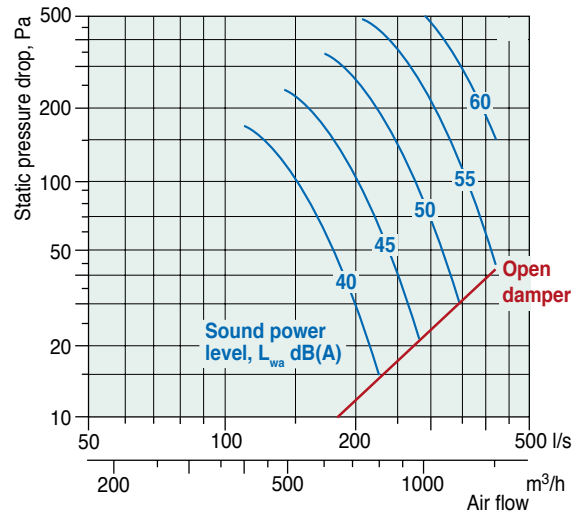
Size 160



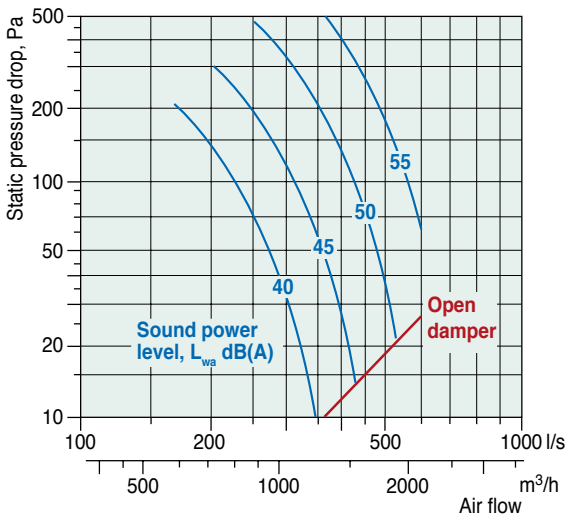
Size 200



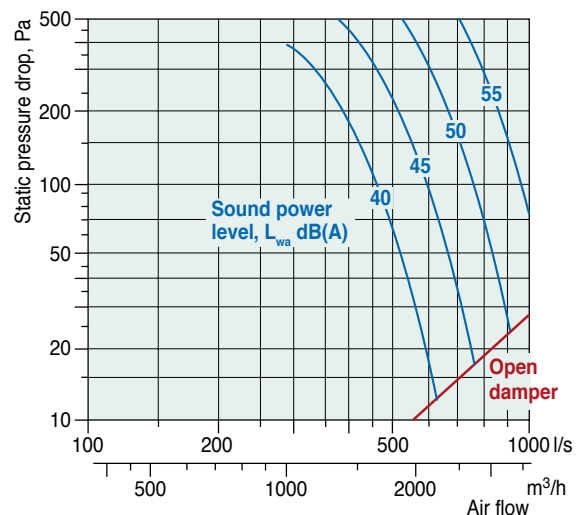
Size 250



Size 315



Size 400



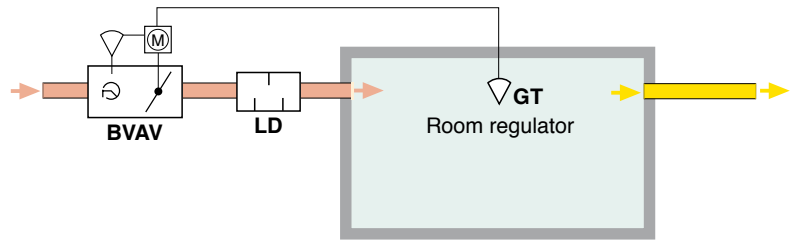


# Variable/constant flow device BVAV-LD

## Alt. 1. Installation of separate VAV devices

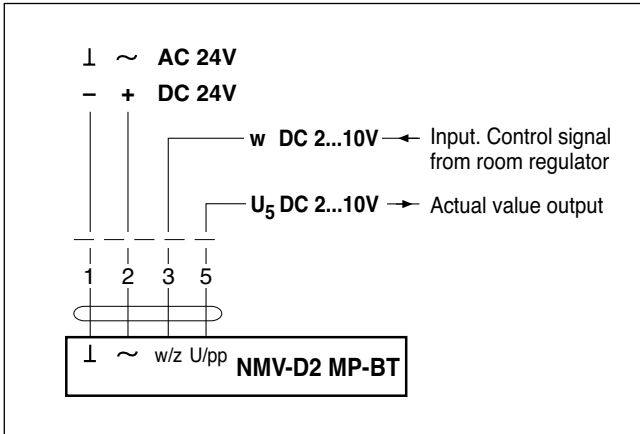
The control signal from the room regulator or DUC, controls the VAV-device.

The actual value signal can be forwarded for external monitoring of the actual flow.



### Wiring diagrams

BVAV-LD, NMV-D2 MP-BT

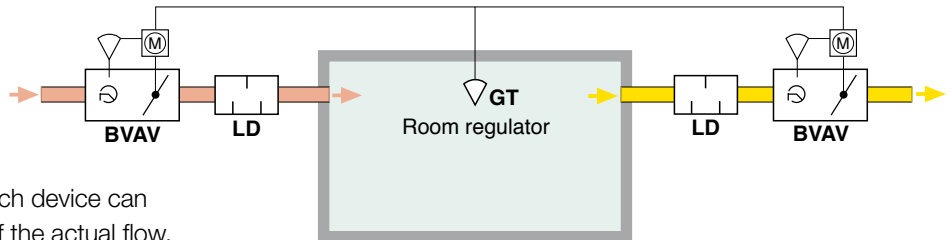


**CAUTION!** When connecting several VAV devices to the same transformer, it is important that all system phases are connected to (⌚) and all system neutrals are connected to (⌚).

## Alt. 2. Supply and exhaust air are controlled in parallel

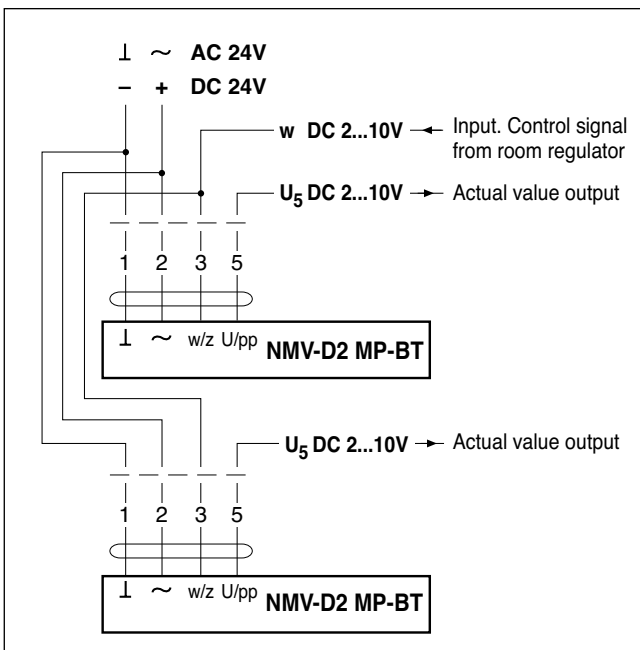
The control signal from the room regulator or DUC, controls the supply air and exhaust air devices in parallel.

The air flow for the devices can be set individually. The output signals from each device can be forwarded for external monitoring of the actual flow.



### Wiring diagram

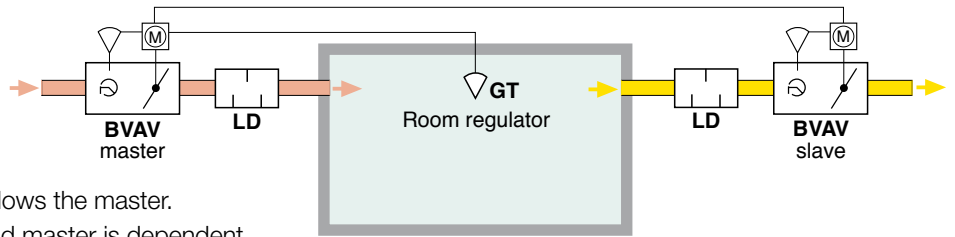
BVAV-LD, NMV-D2 MP-BT





**Alt. 3. The exhaust air is slave controlled by the supply air**

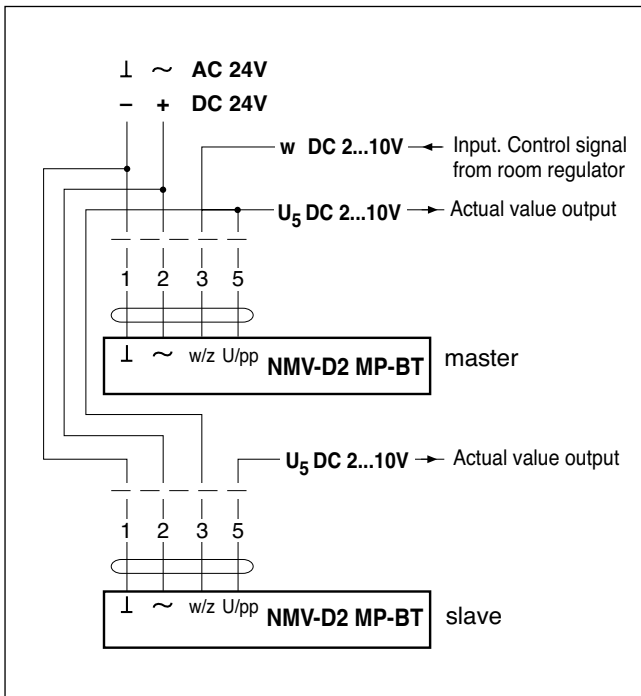
The control signal from the room regulator or DUC, controls the supply air device (BVAV master). The exhaust air device (BVAV slave) is controlled by the supply air device's control signal ( $U_5$  output). The slave follows the master. The flow relationship between slave and master is dependent on the set maximum flow of the slave (normally 100%). The output signal from each device can be forwarded for external monitoring of the actual flow.



This setting option must be made known before delivery of the VAV devices.

**Wiring diagram**

BVAV-LD, NMV-D2 MP-BT



**Electrical data**

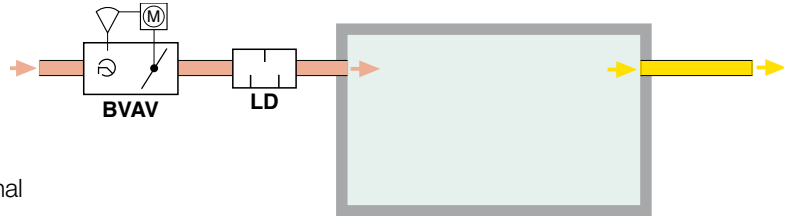
- AC 24V, 50/60Hz, DC 24V
- AC 19,2...28,8V, DC 21,6...28,8V
- Effect: 3-3,5 W (5-5,5 VA)
- Sound level: 35 dB(A)
- Pressure range: 2-300 Pa
- Ambient temperature: 0°C - 50°C



# Variable/constant flow device BVAV-LD

## Alt. 4. Constant supply air flow

The VAV device maintains a constant flow that is preset at the factory, which is why the device is not normally controlled by any external control signal. The output signal can be forwarded for external monitoring of the actual flow. The VAV device can be mechanically operated for a range of operational alternatives

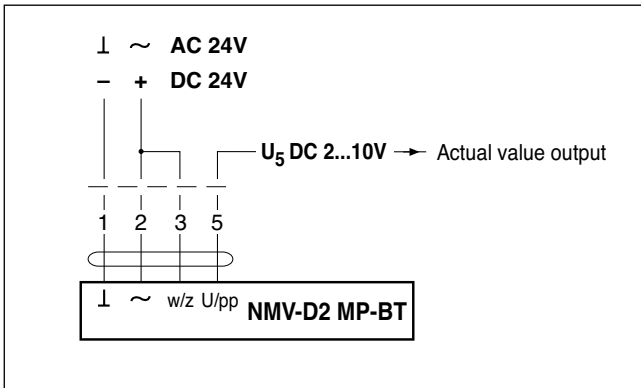


## Constant supply air flow, basic or forced flow

A timer or monitor controls the supply air device (BVAV) to force the supply air to a constant set max. flow when the room is used. When the room is not in use the BVAV device works with the basic flow.

## Wiring diagram

BVAV-LD, NMV-D2 MP-BT



## Control functions for BVAV-Compact

By using contact functions the supply air device (BVAV-Compact) can be controlled to closed, min. flow, variable flow, intermediate position, and max. flow and fully open.

## Wiring diagram

BVAV-LD, NMV-D2 MP-BT

