

## TECHNICAL INFORMATION

<b>APPLICATION</b>	Airflow type	Variable, supply and extraction
<b>CONSTRUCTION</b>	Shape	Rectangular
	Air flow control	non-polluting aluminium differential pressure sensor
	Length	400 mm
	Min. height	150 mm
	Max. height	1200 mm
	Available steps in height	50 mm
	Min. width	150 mm
	Max. width	1200 mm
	Available steps in width	50 mm
	Frame size	E30 (30 mm)
<b>MATERIAL</b>	Standard material	Galvanised steel (275 g/m <sup>2</sup> )
	Blades	Aluminium extruded blades with strip seal
	Insulation (BSD)	Mineral wool 25 mm
	Product finishing options	Painted RAL
<b>PERFORMANCE</b>	Certification	Housing: Class C (EN12237) Damper: Class 2 (EN1751)
	Min. air velocity	Defined @ 1.0 m/s
	Max. air velocity	Defined @ 10 m/s
<b>ACTUATOR</b>	Standard actuator	Grada G1: 227VM compact volume flow controller with display and integrated control
	Input signal	2-10V (standard), 0-10V
	Output signal	2-10V (standard), 0-10V
	Operating voltage	24 VAC/VDC +/-20%
	Operating conditions	0...+50°C - IP 42

## BS

### RECTANGULAR VAV UNIT

Variations **BSS** **BSD**



Galvanised rectangular VAV unit with counter rotating blades, supplied with an electronic actuator and aluminium differential pressure sensor. This VAV unit can be applied for regulating constant or variable air volumes based on air quality and/or temperature. The aluminium blades are equipped with an airtight seal and maintenance free bearings. Housing meets Class C following EN 12237, blades meet Class 2 following EN 1751. Available without (BSS) and with (BSD) insulation, and external sound attenuators.

[Aluminium extruded differential pressure sensor with an operating range 1-10 m/s](#)

[Class C housing following EN 12237](#)

[Air volume controlled actuator with integrated display and controls \(no external equipment required\)](#)



## ACCESSORIES

### US SIL

Square galvanized duct silencer for installation in between ducts.

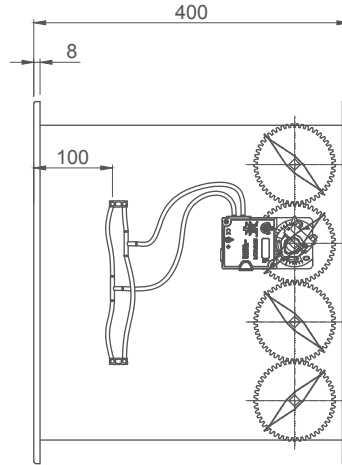
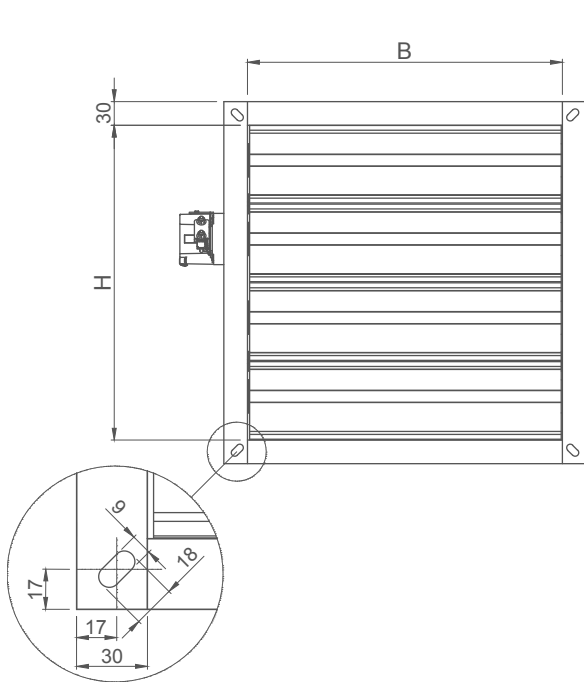


# RECTANGULAR VAV UNIT

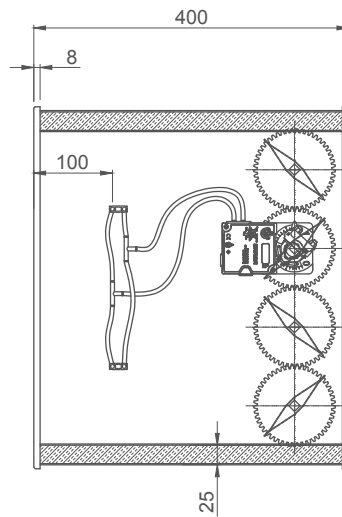
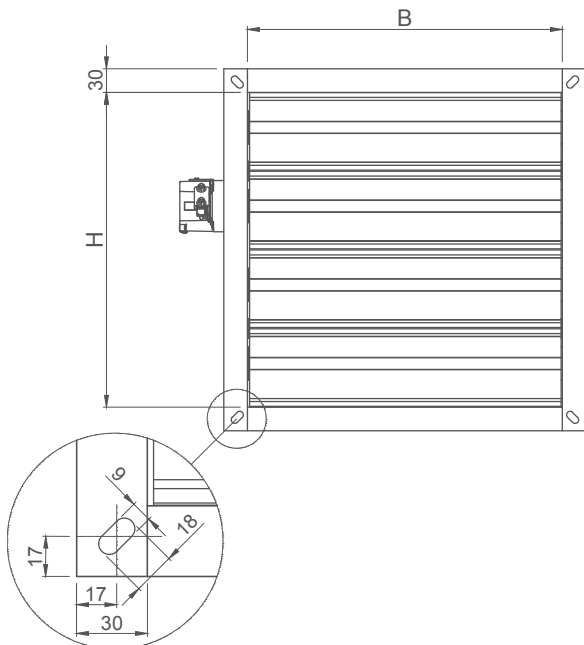
BSS BSD

## DRAWING

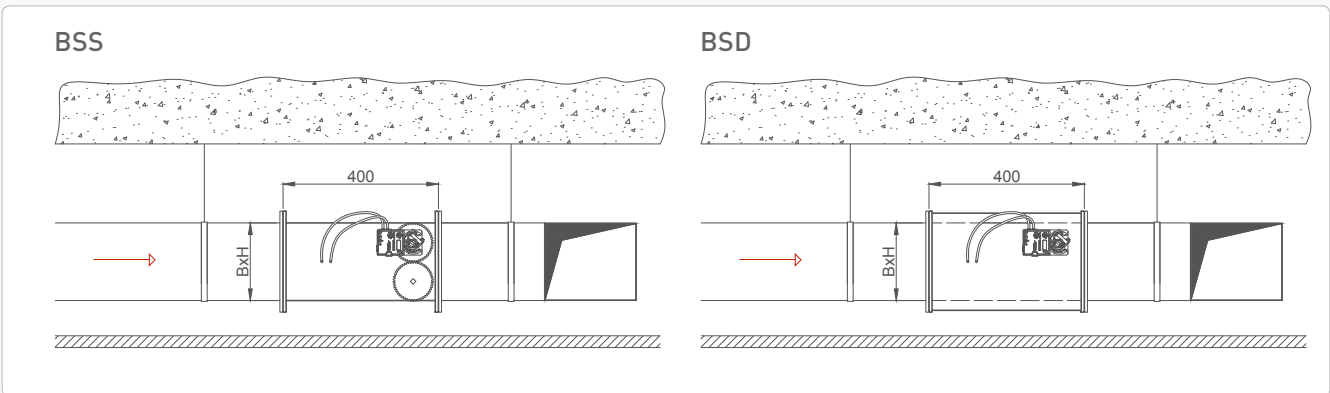
BSS



BSD



DIMENSIONS



MEASUREMENT OF THE VOLUMETRIC AIR FLOW RATE - GRADA G1 ACTUATOR

- the setpoint value signal  $Y$  depends on the chosen mode, i.e. 0-10 V DC or 2-10 V DC. The lower and upper limit correspond to  $V_{min}$  and  $V_{nom}$  respectively. Speciality of input mode 2-10 V DC: in the range of  $Y = 0-0.8$  V DC the override command **Close** will be detected.

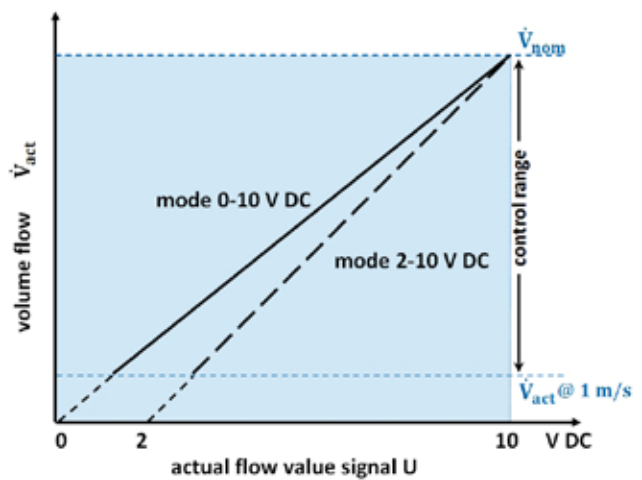
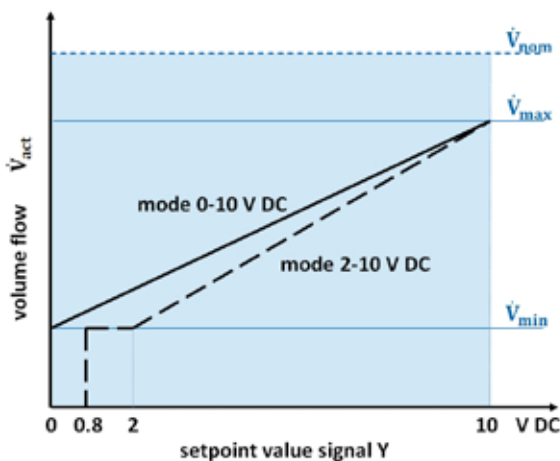


- the output/feedback signal  $U$  represents the actual flow and follows the selected mode of operation (0-10 V DC or 2-10 V DC). The signal  $U$  is proportional to the selected  $V_{nom}$  value.

- $V_{nom}$ : nominal volume flow rate ([m<sup>3</sup>/h] or [l/s]) corresponding at a sensor pressure difference of 250 Pa. Upper limit of the flow setting range and the maximum volume flow rate setpoint value for the VAV unit.

- $V_{min}$ : lower limit of the operating range for the VAV unit that can be set by the installer. It is smaller than or equal to  $V_{max}$ ; it may equal zero. It corresponds to the setpoint signal minimum, i.e. 0 or 2 V DC.

- $V_{max}$ : upper limit of the operating range for the VAV unit that can be set by the installer. It is smaller than or equal to  $V_{nom}$ . It corresponds to the setpoint signal maximum, i.e. 10 V DC.



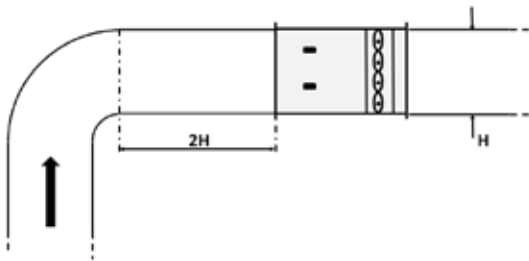
MEASUREMENT ACCURACY

- Duct velocities larger than 1.5 m/s are recommended, and should not go below 1 m/s. At lower air velocities measurement accuracies cannot be guaranteed.

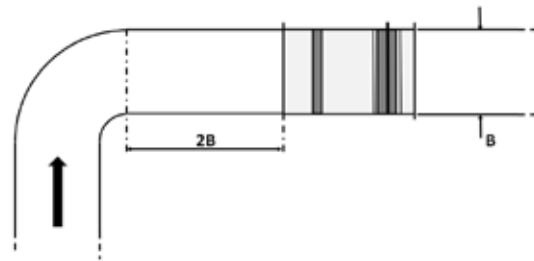
VELOCITY [m/s]	MEASUREMENT ERROR [%]
≥ 1	< 8
> 2	< 5

- The above volume flow rate accuracy applies only to situations with a straight upstream section of the duct according to ISO 5219 / EN 1751, and measured according ISO 3966. The actuators show a measurement error of <5% with respect to ISO 3966 in the recommended working range. For upstream 90° bends a minimum distance of straight duct as shown in the figure below is needed to have negligible effects on volume flow rate measurements. Distinction is made between horizontal and vertical bends. Direct mounting of the bend on the VAV results in a measurement error of ±10%.

vertical bend



horizontal bend



## RECTANGULAR VAV UNIT

BSS BSD

### SELECTION

SOUND PRESSURE LEVEL AT DIFFERENTIAL PRESSURE OF 100 Pa

B x H	duct velocity	flow rate		dP <sub>s,min</sub> (open damper)	air discharge noise (L <sub>p</sub> )		case-radiated noise (L <sub>p</sub> )	
					BSS BSD	BSS + silencer BSD + silencer	BSS BSS + silencer	BSD BSD + silencer
[mm x mm]	[m/s]	[m <sup>3</sup> /h]	[l/s]	[Pa]	[dB(A)]	[dB(A)]	[dB(A)]	[dB(A)]
200 X 200	1	144	40	<1	23	<20	<20	<20
	1,5	216	60	<1	26	<20	<20	<20
	4	576	160	4	33	<20	<20	<20
	6	864	240	8	37	23	21	<20
	10	1440	400	23	44	34	29	26
400 X 200	1	288	80	<1	26	<20	<20	<20
	1,5	432	120	<1	29	<20	<20	<20
	4	1152	320	3	36	21	<20	<20
	6	1728	480	7	40	27	23	20
	10	2880	800	19	47	37	31	27
600 X 200	1	432	120	<1	28	<20	<20	<20
	1,5	648	180	<1	30	<20	<20	<20
	4	1728	480	3	37	27	21	<20
	6	2592	720	6	41	37	25	21
	10	4320	1200	17	49	50	32	29
800 X 200	1	576	160	<1	29	<20	<20	<20
	1,5	864	240	<1	32	<20	<20	<20
	4	2304	640	3	39	27	22	<20
	6	3456	960	6	43	35	26	23
	10	5760	1600	16	50	47	34	30
1200 X 200	1	864	240	<1	31	<20	<20	<20
	1,5	1296	360	<1	33	<20	<20	<20
	4	3456	960	2	40	27	24	<20
	6	5184	1440	5	45	35	28	24
	10	8640	2400	15	52	47	36	31
400 X 250	1	360	100	<1	27	<20	<20	<20
	1,5	540	150	<1	30	<20	<20	<20
	4	1440	400	2	36	22	<20	<20
	6	2160	600	4	40	27	23	<20
	10	3600	1000	10	46	37	29	26
600 X 250	1	540	150	<1	29	<20	<20	<20
	1,5	810	225	<1	31	<20	<20	<20
	4	2160	600	1	38	28	20	<20
	6	3240	900	3	41	38	24	21
	10	5400	1500	8	48	50	31	27

SOUND PRESSURE INCL. ROOM ATTENUATION TYPICAL FOR OFFICES AND CEILING ATTENUATION TYPICAL FOR MINERAL FIBRE TILE

## SOUND PRESSURE LEVEL AT DIFFERENTIAL PRESSURE OF 100 Pa

B x H	duct velocity	flow rate		dP <sub>s,min</sub> (open damper)	air discharge noise (L <sub>p</sub> )		case-radiated noise (L <sub>p</sub> )	
					BSS BSD	BSS + silencer BSD + silencer	BSS BSS + silencer	BSD BSD + silencer
[mm x mm]	[m/s]	[m³/h]	[l/s]	[Pa]	[dB(A)]	[dB(A)]	[dB(A)]	[dB(A)]
800 X 250	1	720	200	<1	30	<20	<20	<20
	1,5	1080	300	<1	32	<20	<20	<20
	4	2880	800	1	39	27	22	<20
	6	4320	1200	3	43	36	25	22
	10	7200	2000	7	49	48	32	28
1200 X 250	1	1080	300	<1	32	<20	<20	<20
	1,5	1620	450	<1	34	<20	<20	<20
	4	4320	1200	1	41	28	24	<20
	6	6480	1800	2	45	36	28	23
	10	10800	3000	6	51	48	34	30
400 X 300	1	432	120	<1	28	<20	<20	<20
	1,5	648	180	<1	31	<20	<20	<20
	4	1728	480	2	38	24	20	<20
	6	2592	720	5	42	29	24	21
	10	4320	1200	15	49	39	32	28
600 X 300	1	648	180	<1	30	<20	<20	<20
	1,5	972	270	<1	32	<20	<20	<20
	4	2592	720	2	39	29	22	<20
	6	3888	1080	4	43	39	26	22
	10	6480	1800	12	51	51	33	29
800 X 300	1	864	240	<1	31	<20	<20	<20
	1,5	1296	360	<1	34	<20	<20	<20
	4	3456	960	2	41	29	23	<20
	6	5184	1440	4	45	37	27	23
	10	8640	2400	11	52	49	35	30
1200 X 300	1	1296	360	<1	33	<20	<20	<20
	1,5	1944	540	<1	35	<20	<20	<20
	4	5184	1440	1	43	29	25	20
	6	7776	2160	3	47	36	30	25
	10	12960	3600	9	54	48	37	32
400 X 400	1	576	160	<1	30	<20	<20	<20
	1,5	864	240	<1	32	<20	<20	<20
	4	2304	640	2	39	26	21	<20
	6	3456	960	4	43	31	25	22
	10	5760	1600	12	51	40	33	29

SOUND PRESSURE INCL. ROOM ATTENUATION TYPICAL FOR OFFICES AND CEILING ATTENUATION TYPICAL FOR MINERAL FIBRE TILE

# RECTANGULAR VAV UNIT

BSS BSD

## SOUND PRESSURE LEVEL AT DIFFERENTIAL PRESSURE OF 100 Pa

B x H	duct velocity	flow rate		dP <sub>s,min</sub> (open damper)	air discharge noise (L <sub>p</sub> )		case-radiated noise (L <sub>p</sub> )	
					BSS BSD	BSS + silencer BSD + silencer	BSS BSS + silencer	BSD BSD + silencer
[mm x mm]	[m/s]	[m³/h]	[l/s]	[Pa]	[dB(A)]	[dB(A)]	[dB(A)]	[dB(A)]
800 X 400	1	1152	320	<1	33	<20	<20	<20
	1,5	1728	480	<1	35	<20	<20	<20
	4	4608	1280	1	42	30	24	<20
	6	6912	1920	3	46	38	28	24
	10	11520	3200	7	54	49	36	31
1200 X 400	1	1728	480	<1	34	<20	<20	<20
	1,5	2592	720	<1	37	22	<20	<20
	4	6912	1920	<1	44	31	27	21
	6	10368	2880	2	48	38	31	25
	10	17280	4800	6	55	50	38	33
600 x 500	1	1080	300	<1	32	<20	<20	<20
	1,5	1620	450	<1	35	<20	<20	<20
	4	4320	1200	1	42	32	24	<20
	6	6480	1800	3	46	41	28	23
	10	10800	3000	7	53	53	35	31
800 X 500	1	1440	400	<1	34	<20	<20	<20
	1,5	2160	600	<1	36	21	<20	<20
	4	5760	1600	<1	43	31	25	<20
	6	8640	2400	2	47	39	29	24
	10	14400	4000	5	55	51	37	32
1200 X 500	1	2160	600	<1	35	20	<20	<20
	1,5	3240	900	<1	38	23	21	<20
	4	8640	2400	<1	45	32	28	22
	6	12960	3600	1	49	39	32	26
	10	21600	6000	3	56	50	40	33
600 X 600	1	1296	360	<1	33	<20	<20	<20
	1,5	1944	540	<1	36	<20	<20	<20
	4	5184	1440	<1	43	33	24	<20
	6	7776	2160	2	47	42	29	24
	10	12960	3600	6	54	54	36	31
800 X 600	1	1728	480	<1	35	<20	<20	<20
	1,5	2592	720	<1	37	22	<20	<20
	4	6912	1920	<1	44	32	26	21
	6	10368	2880	1	48	40	30	25
	10	17280	4800	3	56	52	38	32

SOUND PRESSURE INCL. ROOM ATTENUATION TYPICAL FOR OFFICES AND CEILING ATTENUATION TYPICAL FOR MINERAL FIBRE TILE

## SOUND PRESSURE LEVEL AT DIFFERENTIAL PRESSURE OF 100 Pa

B x H	duct velocity	flow rate		dP <sub>s,min</sub> (open damper)	air discharge noise (L <sub>p</sub> )		case-radiated noise (L <sub>p</sub> )	
					BSS BSD	BSS + silencer BSD + silencer	BSS BSS + silencer	BSD BSD + silencer
[mm x mm]	[m/s]	[m <sup>3</sup> /h]	[l/s]	[Pa]	[dB(A)]	[dB(A)]	[dB(A)]	[dB(A)]
1200 X 600	1	2592	720	<1	36	21	<20	<20
	1,5	3888	1080	<1	39	24	22	<20
	4	10368	2880	<1	46	33	30	23
	6	15552	4320	<1	50	40	34	27
	10	25920	7200	<1	57	50	41	34
800 X 800	1	2304	640	<1	36	-	<20	<20
	1,5	3456	960	<1	39	-	21	<20
	4	9216	2560	<1	46	-	28	22
	6	13824	3840	<1	50	-	33	26
	10	23040	6400	<1	57	-	40	33
1200 X 800	1	3456	960	<1	38	-	23	<20
	1,5	5184	1440	<1	40	-	26	<20
	4	13824	3840	<1	47	-	33	25
	6	20736	5760	<1	51	-	37	29
	10	34560	9600	<1	59	-	45	37
1000 X 1000	1	3600	1000	<1	38	-	24	<20
	1,5	5400	1500	<1	40	-	26	<20
	4	14400	4000	<1	47	-	33	25
	6	21600	6000	<1	52	-	38	29
	10	36000	10000	<1	59	-	45	37
1200 X 1200	1	5184	1440	<1	40	-	31	21
	1,5	7776	2160	<1	42	-	34	24
	4	20736	5760	<1	49	-	41	31
	6	31104	8640	<1	53	-	45	35
	10	51840	14400	<1	60	-	53	43

SOUND PRESSURE INCL. ROOM ATTENUATION TYPICAL FOR OFFICES AND CEILING ATTENUATION TYPICAL FOR MINERAL FIBRE TILE



## RECTANGULAR VAV UNIT

BSS BSD

### SELECTION

SOUND PRESSURE LEVEL AT DIFFERENTIAL PRESSURE OF 150 Pa

B x H	duct velocity	flow rate		dP <sub>s,min</sub> (open damper)	air discharge noise (L <sub>p</sub> )		case-radiated noise (L <sub>p</sub> )	
					BSS BSD	BSS + silencer BSD + silencer	BSS BSS + silencer	BSD BSD + silencer
[mm x mm]	[m/s]	[m <sup>3</sup> /h]	[l/s]	[Pa]	[dB(A)]	[dB(A)]	[dB(A)]	[dB(A)]
200 X 200	1	144	40	<1	27	<20	<20	<20
	1,5	216	60	<1	30	<20	<20	<20
	4	576	160	4	36	<20	21	<20
	6	864	240	8	40	25	24	22
	10	1440	400	23	46	35	31	28
400 X 200	1	288	80	<1	30	<20	<20	<20
	1,5	432	120	<1	33	<20	<20	<20
	4	1152	320	3	39	24	23	<20
	6	1728	480	7	43	29	27	23
	10	2880	800	19	49	38	33	30
600 X 200	1	432	120	<1	32	<20	<20	<20
	1,5	648	180	<1	34	<20	<20	<20
	4	1728	480	3	41	28	24	21
	6	2592	720	6	45	37	28	25
	10	4320	1200	17	51	50	35	31
800 X 200	1	576	160	<1	33	<20	<20	<20
	1,5	864	240	<1	36	<20	<20	<20
	4	2304	640	3	42	28	26	22
	6	3456	960	6	46	36	29	26
	10	5760	1600	16	52	47	36	32
1200 X 200	1	864	240	<1	35	<20	<20	<20
	1,5	1296	360	<1	38	21	21	<20
	4	3456	960	2	44	30	28	24
	6	5184	1440	5	48	36	32	27
	10	8640	2400	15	54	47	38	34
400 X 250	1	360	100	<1	31	<20	<20	<20
	1,5	540	150	<1	34	<20	<20	<20
	4	1440	400	2	40	25	23	<20
	6	2160	600	4	43	30	26	23
	10	3600	1000	10	49	38	32	28
600 X 250	1	540	150	<1	33	<20	<20	<20
	1,5	810	225	<1	35	<20	<20	<20
	4	2160	600	1	42	29	24	21
	6	3240	900	3	45	38	28	24
	10	5400	1500	8	50	50	33	30

SOUND PRESSURE INCL. ROOM ATTENUATION TYPICAL FOR OFFICES AND CEILING ATTENUATION TYPICAL FOR MINERAL FIBRE TILE

SOUND PRESSURE LEVEL AT DIFFERENTIAL PRESSURE OF 150 Pa

B x H	duct velocity	flow rate		dP <sub>s,min</sub> (open damper)	air discharge noise (L <sub>p</sub> )		case-radiated noise (L <sub>p</sub> )	
					BSS BSD	BSS + silencer BSD + silencer	BSS BSS + silencer	BSD BSD + silencer
[mm x mm]	[m/s]	[m³/h]	[l/s]	[Pa]	[dB(A)]	[dB(A)]	[dB(A)]	[dB(A)]
800 X 250	1	720	200	<1	34	<20	<20	<20
	1,5	1080	300	<1	37	20	<20	<20
	4	2880	800	1	43	29	26	22
	6	4320	1200	3	46	37	29	25
	10	7200	2000	7	52	48	35	31
1200 X 250	1	1080	300	<1	36	20	<20	<20
	1,5	1620	450	<1	38	22	21	<20
	4	4320	1200	1	45	30	28	23
	6	6480	1800	2	48	37	31	27
	10	10800	3000	6	53	48	37	32
400 X 300	1	432	120	<1	33	<20	<20	<20
	1,5	648	180	<1	35	20	<20	<20
	4	1728	480	2	42	27	24	20
	6	2592	720	5	45	32	28	24
	10	4320	1200	15	51	40	34	31
600 X 300	1	648	180	<1	34	<20	<20	<20
	1,5	972	270	<1	36	<20	<20	<20
	4	2592	720	2	43	30	25	22
	6	3888	1080	4	47	39	29	25
	10	6480	1800	12	53	51	36	32
800 X 300	1	864	240	<1	35	<20	<20	<20
	1,5	1296	360	<1	38	22	<20	<20
	4	3456	960	2	44	31	27	23
	6	5184	1440	4	48	38	31	26
	10	8640	2400	11	54	49	37	33
1200 X 300	1	1296	360	<1	37	21	<20	<20
	1,5	1944	540	<1	40	24	22	<20
	4	5184	1440	1	46	32	29	24
	6	7776	2160	3	50	38	33	28
	10	12960	3600	9	56	48	39	34
400 X 400	1	576	160	<1	34	<20	<20	<20
	1,5	864	240	<1	36	22	<20	<20
	4	2304	640	2	43	29	25	21
	6	3456	960	4	47	33	28	25
	10	5760	1600	12	53	42	35	31

SOUND PRESSURE INCL. ROOM ATTENUATION TYPICAL FOR OFFICES AND CEILING ATTENUATION TYPICAL FOR MINERAL FIBRE TILE

# RECTANGULAR VAV UNIT

BSS BSD

## SOUND PRESSURE LEVEL AT DIFFERENTIAL PRESSURE OF 150 Pa

B x H	duct velocity	flow rate		dP <sub>s,min</sub> (open damper)	air discharge noise (L <sub>p</sub> )		case-radiated noise (L <sub>p</sub> )	
					BSS BSD	BSS + silencer BSD + silencer	BSS BSS + silencer	BSD BSD + silencer
[mm x mm]	[m/s]	[m³/h]	[l/s]	[Pa]	[dB(A)]	[dB(A)]	[dB(A)]	[dB(A)]
800 X 400	1	1152	320	<1	37	21	<20	<20
	1,5	1728	480	<1	39	24	21	<20
	4	4608	1280	1	46	32	28	23
	6	6912	1920	3	50	39	32	27
	10	11520	3200	7	56	50	38	33
1200 X 400	1	1728	480	<1	39	23	21	<20
	1,5	2592	720	<1	41	26	24	<20
	4	6912	1920	<1	48	34	31	25
	6	10368	2880	2	51	39	34	29
	10	17280	4800	6	57	50	41	35
600 X 500	1	1080	300	<1	37	<20	<20	<20
	1,5	1620	450	<1	39	22	20	<20
	4	4320	1200	1	46	33	27	23
	6	6480	1800	3	49	41	31	26
	10	10800	3000	7	56	53	38	33
800 X 500	1	1440	400	<1	38	22	<20	<20
	1,5	2160	600	<1	40	25	22	<20
	4	5760	1600	<1	47	34	29	24
	6	8640	2400	2	51	40	33	27
	10	14400	4000	5	57	51	39	34
1200 X 500	1	2160	600	<1	40	25	23	<20
	1,5	3240	900	<1	42	27	25	<20
	4	8640	2400	<1	49	35	32	26
	6	12960	3600	1	52	40	36	29
	10	21600	6000	3	59	51	42	36
600 X 600	1	1296	360	<1	37	21	<20	<20
	1,5	1944	540	<1	40	24	21	<20
	4	5184	1440	<1	47	34	28	23
	6	7776	2160	2	50	42	32	27
	10	12960	3600	6	56	54	38	33
800 X 600	1	1728	480	<1	39	24	21	<20
	1,5	2592	720	<1	41	26	23	<20
	4	6912	1920	<1	48	35	30	24
	6	10368	2880	1	52	41	34	28
	10	17280	4800	3	58	52	40	34

SOUND PRESSURE INCL. ROOM ATTENUATION TYPICAL FOR OFFICES AND CEILING ATTENUATION TYPICAL FOR MINERAL FIBRE TILE

## SOUND PRESSURE LEVEL AT DIFFERENTIAL PRESSURE OF 150 Pa

B x H	duct velocity	flow rate		dP <sub>s,min</sub> (open damper)	air discharge noise (L <sub>p</sub> )		case-radiated noise (L <sub>p</sub> )	
					BSS BSD	BSS + silencer BSD + silencer	BSS BSS + silencer	BSD BSD + silencer
[mm x mm]	[m/s]	[m <sup>3</sup> /h]	[l/s]	[Pa]	[dB(A)]	[dB(A)]	[dB(A)]	[dB(A)]
1200 X 600	1	2592	720	<1	40	26	24	<20
	1,5	3888	1080	<1	43	28	27	<20
	4	10368	2880	<1	50	36	34	26
	6	15552	4320	<1	53	41	37	30
	10	25920	7200	<1	59	51	44	37
800 X 800	1	2304	640	<1	40	-	23	<20
	1,5	3456	960	<1	43	-	25	<20
	4	9216	2560	<1	49	-	32	26
	6	13824	3840	<1	53	-	36	29
	10	23040	6400	<1	59	-	42	36
1200 X 800	1	3456	960	<1	42	-	27	<20
	1,5	5184	1440	<1	44	-	30	22
	4	13824	3840	<1	51	-	37	29
	6	20736	5760	<1	55	-	41	32
	10	34560	9600	<1	61	-	47	39
1000 X 1000	1	3600	1000	<1	42	-	28	<20
	1,5	5400	1500	<1	44	-	30	22
	4	14400	4000	<1	51	-	37	29
	6	21600	6000	<1	55	-	41	33
	10	36000	10000	<1	61	-	48	39
1200 X 1200	1	5184	1440	<1	44	-	35	25
	1,5	7776	2160	<1	46	-	38	28
	4	20736	5760	<1	53	-	45	35
	6	31104	8640	<1	56	-	49	39
	10	51840	14400	<1	63	-	55	45

SOUND PRESSURE INCL. ROOM ATTENUATION TYPICAL FOR OFFICES AND CEILING ATTENUATION TYPICAL FOR MINERAL FIBRE TILE

# RECTANGULAR VAV UNIT

BSS BSD

## SELECTION

SOUND PRESSURE LEVEL AT DIFFERENTIAL PRESSURE OF 500 Pa

B x H	duct velocity	flow rate		dP <sub>s,min</sub> (open damper)	air discharge noise (L <sub>p</sub> )		case-radiated noise (L <sub>p</sub> )	
					BSS BSD	BSS + silencer BSD + silencer	BSS BSS + silencer	BSD BSD + silencer
[mm x mm]	[m/s]	[m³/h]	[l/s]	[Pa]	[dB(A)]	[dB(A)]	[dB(A)]	[dB(A)]
200 X 200	1	144	40	<1	40	23	24	21
	1,5	216	60	<1	42	25	26	24
	4	576	160	4	48	31	33	30
	6	864	240	8	51	34	36	33
	10	1440	400	23	55	40	40	37
400 X 200	1	288	80	<1	43	27	26	23
	1,5	432	120	<1	45	30	29	25
	4	1152	320	3	51	36	35	32
	6	1728	480	7	54	39	38	35
	10	2880	800	19	58	44	42	39
600 X 200	1	432	120	<1	44	26	28	24
	1,5	648	180	<1	47	28	30	27
	4	1728	480	3	53	35	36	33
	6	2592	720	6	56	40	39	36
	10	4320	1200	17	60	50	44	40
800 x 200	1	576	160	<1	46	29	29	25
	1,5	864	240	<1	48	31	31	28
	4	2304	640	3	54	38	38	34
	6	3456	960	6	57	42	41	37
	10	5760	1600	16	61	49	45	41
1200 X 200	1	864	240	<1	48	31	31	27
	1,5	1296	360	<1	50	34	34	29
	4	3456	960	2	56	40	40	36
	6	5184	1440	5	59	44	43	39
	10	8640	2400	15	63	50	47	43
400 X 250	1	360	100	<1	44	29	26	23
	1,5	540	150	<1	46	31	29	25
	4	1440	400	2	52	37	35	32
	6	2160	600	4	55	40	38	34
	10	3600	1000	10	59	45	42	38
600 X 250	1	540	150	<1	45	27	28	24
	1,5	810	225	<1	48	30	30	27
	4	2160	600	1	54	37	36	33
	6	3240	900	3	56	41	39	36
	10	5400	1500	8	60	51	43	40

SOUND PRESSURE INCL. ROOM ATTENUATION TYPICAL FOR OFFICES AND CEILING ATTENUATION TYPICAL FOR MINERAL FIBRE TILE

SOUND PRESSURE LEVEL AT DIFFERENTIAL PRESSURE OF 500 Pa

B x H	duct velocity	flow rate		dP <sub>s,min</sub> (open damper)	air discharge noise (L <sub>p</sub> )		case-radiated noise (L <sub>p</sub> )	
					BSS BSD	BSS + silencer BSD + silencer	BSS BSS + silencer	BSD BSD + silencer
[mm x mm]	[m/s]	[m³/h]	[l/s]	[Pa]	[dB(A)]	[dB(A)]	[dB(A)]	[dB(A)]
800 X 250	1	720	200	<1	47	30	29	25
	1,5	1080	300	<1	49	33	32	28
	4	2880	800	1	55	39	38	34
	6	4320	1200	3	58	43	41	37
	10	7200	2000	7	62	50	45	41
1200 X 250	1	1080	300	<1	48	33	31	27
	1,5	1620	450	<1	51	35	34	29
	4	4320	1200	1	57	41	40	35
	6	6480	1800	2	59	45	43	38
	10	10800	3000	6	63	51	47	42
400 X 300	1	432	120	<1	45	30	27	24
	1,5	648	180	<1	47	33	30	26
	4	1728	480	2	53	39	36	32
	6	2592	720	5	56	42	39	35
	10	4320	1200	15	60	47	43	40
600 X 300	1	648	180	<1	46	29	29	25
	1,5	972	270	<1	49	31	31	27
	4	2592	720	2	55	38	37	34
	6	3888	1080	4	58	43	40	37
	10	6480	1800	12	62	52	45	41
800 X 300	1	864	240	<1	48	32	30	26
	1,5	1296	360	<1	50	34	33	28
	4	3456	960	2	56	41	39	35
	6	5184	1440	4	59	44	42	37
	10	8640	2400	11	63	51	46	42
1200 X 300	1	1296	360	<1	50	34	32	27
	1,5	1944	540	<1	52	37	35	30
	4	5184	1440	1	58	43	41	36
	6	7776	2160	3	61	46	44	39
	10	12960	3600	9	65	52	49	44
400 X 400	1	576	160	<1	46	32	28	24
	1,5	864	240	<1	49	35	30	27
	4	2304	640	2	55	41	37	33
	6	3456	960	4	58	44	40	36
	10	5760	1600	12	62	49	44	40

SOUND PRESSURE INCL. ROOM ATTENUATION TYPICAL FOR OFFICES AND CEILING ATTENUATION TYPICAL FOR MINERAL FIBRE TILE

# RECTANGULAR VAV UNIT

BSS BSD

## SOUND PRESSURE LEVEL AT DIFFERENTIAL PRESSURE OF 500 Pa

B x H	duct velocity	flow rate		dP <sub>s,min</sub> (open damper)	air discharge noise (L <sub>p</sub> )		case-radiated noise (L <sub>p</sub> )	
					BSS BSD	BSS + silencer BSD + silencer	BSS BSS + silencer	BSD BSD + silencer
[mm x mm]	[m/s]	[m³/h]	[l/s]	[Pa]	[dB(A)]	[dB(A)]	[dB(A)]	[dB(A)]
800 X 400	1	1152	320	<1	49	34	31	26
	1,5	1728	480	<1	52	36	34	29
	4	4608	1280	1	58	43	40	35
	6	6912	1920	3	61	46	43	38
	10	11520	3200	7	65	53	47	43
1200 X 400	1	1728	480	<1	51	36	34	28
	1,5	2592	720	<1	53	38	36	31
	4	6912	1920	<1	59	45	43	37
	6	10368	2880	2	62	48	46	40
	10	17280	4800	6	67	54	50	44
600 X 500	1	1080	300	<1	49	32	31	26
	1,5	1620	450	<1	51	35	33	28
	4	4320	1200	1	57	42	39	35
	6	6480	1800	3	60	46	42	38
	10	10800	3000	7	65	54	47	42
800 X 500	1	1440	400	<1	50	35	32	27
	1,5	2160	600	<1	53	38	35	29
	4	5760	1600	<1	59	44	41	36
	6	8640	2400	2	62	47	44	39
	10	14400	4000	5	66	54	48	43
1200 X 500	1	2160	600	<1	52	37	35	29
	1,5	3240	900	<1	54	40	38	31
	4	8640	2400	<1	60	46	44	38
	6	12960	3600	1	63	49	47	41
	10	21600	6000	3	68	55	51	45
600 X 600	1	1296	360	<1	50	34	31	26
	1,5	1944	540	<1	52	36	34	29
	4	5184	1440	<1	58	43	40	35
	6	7776	2160	2	61	47	43	38
	10	12960	3600	6	65	55	48	43
800 X 600	1	1728	480	<1	51	36	33	27
	1,5	2592	720	<1	54	39	36	30
	4	6912	1920	<1	60	45	42	36
	6	10368	2880	1	63	49	45	39
	10	17280	4800	3	67	56	49	44

SOUND PRESSURE INCL. ROOM ATTENUATION TYPICAL FOR OFFICES AND CEILING ATTENUATION TYPICAL FOR MINERAL FIBRE TILE

SOUND PRESSURE LEVEL AT DIFFERENTIAL PRESSURE OF 500 Pa

B x H	duct velocity	flow rate		dP <sub>s,min</sub> (open damper)	air discharge noise (L <sub>p</sub> )		case-radiated noise (L <sub>p</sub> )	
					BSS BSD	BSS + silencer BSD + silencer	BSS BSS + silencer	BSD BSD + silencer
[mm x mm]	[m/s]	[m <sup>3</sup> /h]	[l/s]	[Pa]	[dB(A)]	[dB(A)]	[dB(A)]	[dB(A)]
1200 X 600	1	2592	720	<1	53	38	37	30
	1,5	3888	1080	<1	55	41	39	32
	4	10368	2880	<1	61	47	46	39
	6	15552	4320	<1	64	50	49	41
	10	25920	7200	<1	68	56	53	46
800 X 800	1	2304	640	<1	53	-	35	29
	1,5	3456	960	<1	55	-	38	31
	4	9216	2560	<1	61	-	44	38
	6	13824	3840	<1	64	-	47	41
	10	23040	6400	<1	68	-	52	45
1200 X 800	1	3456	960	<1	54	-	40	32
	1,5	5184	1440	<1	57	-	42	34
	4	13824	3840	<1	63	-	49	41
	6	20736	5760	<1	66	-	52	44
	10	34560	9600	<1	70	-	56	48
1000 X 1000	1	3600	1000	<1	54	-	40	32
	1,5	5400	1500	<1	57	-	43	35
	4	14400	4000	<1	63	-	49	41
	6	21600	6000	<1	66	-	52	44
	10	36000	10000	<1	70	-	57	49
1200 X 1200	1	5184	1440	<1	56	-	48	38
	1,5	7776	2160	<1	58	-	51	40
	4	20736	5760	<1	65	-	57	47
	6	31104	8640	<1	67	-	60	50
	10	51840	14400	<1	72	-	64	54

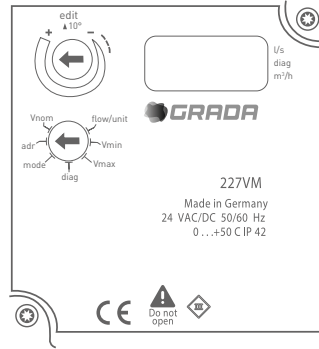
SOUND PRESSURE INCL. ROOM ATTENUATION TYPICAL FOR OFFICES AND CEILING ATTENUATION TYPICAL FOR MINERAL FIBRE TILE



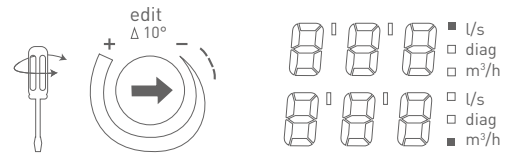
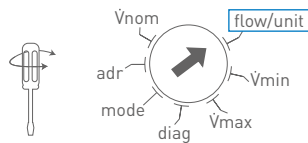
# RECTANGULAR VAV UNIT

BSS BSD

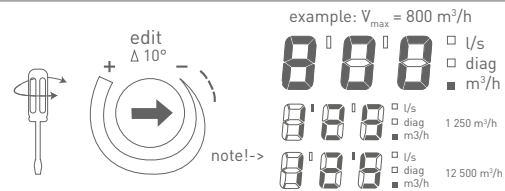
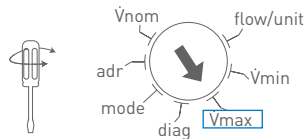
## BS ACTUATOR SETUP USE OF THE MOTOR G1



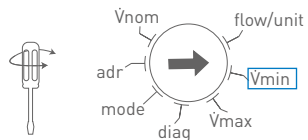
### 1. AIRFLOW/UNIT SECTION



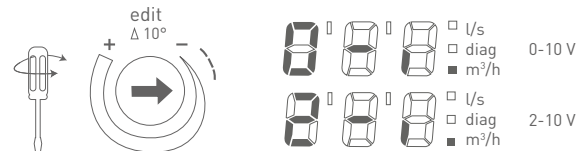
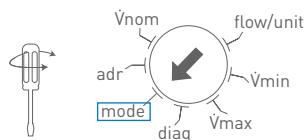
### 2. V<sub>MAX</sub> VALUE SETUP



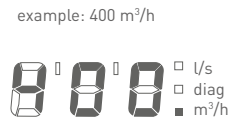
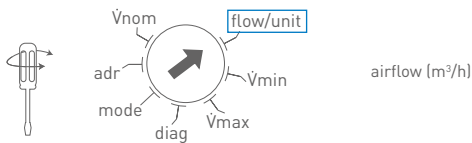
### 3. V<sub>MIN</sub> VALUE SETUP



### 4. CONTROL



### READOUT



## DIAGNOSTICS





