



Constant Air Volume Control

CAV HP



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regulators are used for automatic constant air flow control in ventilation installations. They maintain constant air volumes regardless of the changes of static pressure in the ventilation duct. They operate automatically, without any external power supply. Regulation range is from 2 to 12 m/s, operating pressure from 50 to 1000 Pa. Complies with EN 1751 casing air leakage has class C, close blade air leakage has class 0. The changes of set values can be made independently by the user, so the regulator is delivered with default factory settings. It is possible to order factory-made value settings, which should be indicated in the order code.

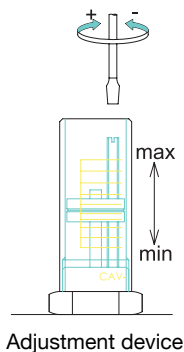
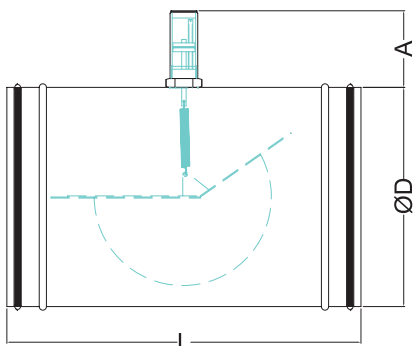
Advantages

The regulator makes it possible to control the air flow within the pressure range from 50 to 1000 Pa, without any external power supply. The standard version of the regulator has the housing and the baffle made of galvanized steel, whereas the baffle axis is fastened in brass bearings. The special version of the regulator made of AISI304L stainless steel can be ordered. In accordance with EN1751, the housing leakage class is C. Due to intuitive adjusting mechanism, any flow rate maintained by the regulator can be set by the user independently.

Main Advantages

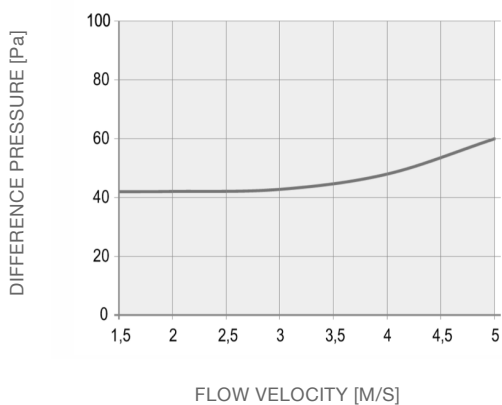
- Operating range 2 – 12 m/s
- Operating pressure 50 – 1000 Pa
- The possibility of changing settings by the user
- The possibility of making the version with an actuator
- Complies with EN 1751 air leakage has class C0
- It can be used both in ventilation air supply and air extraction ducts
- It can be mounted both vertically and horizontally
- It can be made with a seal on the service lines
- Round or rectangular options
- Scale accuracy $\pm 10\%$
- Operating temperature 10 – 80 °C

Technical Data



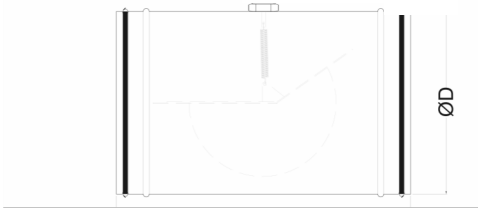
Size (mm)	ØD (mm)	L (mm)	A	Stat Press min-max (Pa)
Ø100	98	250	60	20 - 1000
Ø125	123	250	60	20 - 1000
Ø140	138	250	60	20 - 1000
Ø160	158	320	60	20 - 1000
Ø200	198	320	60	20 - 1000
Ø250	248	320	60	20 - 1000
Ø315	313	335	100	20 - 1000
Ø355	353	400	100	20 - 1000
Ø400	398	400	100	20 - 1000

MINIMUM STATIC PRESSURE DIFFERENCE DIAGRAM



- Constant volume flow controller with proof plug connection (only fitting measure)
- Automatically regulating without auxiliary energy
- Customers can change the amount of air by manual adjustment

Quick Selection



SIZE	VOLUME FLOW		FLOW VELOCITY	
	[M ³ /H]		[M/S]	
MM	MIN.	MAX.	MIN.	MAX.
80	25	80	1,4	4,4
100	40	125	1,4	4,4
125	65	220	1,5	5
160	100	350	1,4	4,8
200	160	500	1,4	4,4
250	240	800	1,4	4,5

Size [mm]	Flow velocity [m/s]	Volume flow [m ³ /h]	Static pressure difference at the controller [Pa]																																			
			100 Pa								Summation L _{sum} A-weighted dB(A)	250 Pa								Summation L _{sum} A-weighted dB(A)	500 Pa								Summation L _{sum} A-weighted dB(A)									
			Octave power level*									Octave power level*									Octave power level*																	
			L _w [dB/octave]									L _w [dB/octave]									L _w [dB/octave]																	
63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz															
80	1,4	25	29	33	32	32	33	28	27	37	38	40	40	40	41	42	36	35	46	45	47	47	47	47	48	43	42	53	45	47	47	47	48	43	42	53		
	2,9	52	39	39	37	36	35	36	31	30	41	40	43	44	45	46	49	44	44	53	46	49	50	52	53	55	51	51	59	46	49	50	52	53	55	51	51	59
	4,4	80	48	46	43	41	39	39	33	31	44	51	51	50	48	48	49	44	44	54	57	57	56	55	55	56	51	50	60	57	57	56	55	55	56	51	50	60
100	1,4	40	32	34	34	33	33	34	29	27	39	41	42	42	42	43	38	36	48	47	49	49	49	49	50	44	43	54	47	49	49	49	49	50	44	43	54	
	2,9	82	46	43	40	37	35	35	28	27	41	50	49	48	46	45	46	40	40	51	50	52	53	54	55	57	52	52	61	50	52	53	54	55	57	52	52	61
	4,4	125	50	48	45	42	40	40	33	32	45	53	53	51	50	50	50	45	45	55	59	59	58	57	56	57	52	51	62	59	59	58	57	56	57	52	51	62
125	1,5	65	35	36	36	35	35	36	30	29	41	43	45	45	44	44	45	39	37	49	50	52	51	51	51	51	45	44	56	50	52	51	51	51	51	45	44	56
	3,2	142	48	46	42	39	37	37	30	29	43	52	52	50	49	48	48	43	42	53	53	55	56	57	57	59	54	54	63	53	55	56	57	57	59	54	54	63
	5,0	220	52	50	47	44	42	42	36	34	48	61	59	56	53	51	51	44	43	56	62	62	60	59	59	59	54	53	64	62	62	60	59	59	59	54	53	64
160	1,4	100	37	38	38	37	36	36	30	28	41	46	47	46	45	45	45	39	37	50	53	54	53	52	52	52	45	44	57	53	54	53	52	52	52	45	44	57
	3,1	225	49	47	43	40	38	37	31	29	43	54	54	52	50	49	49	43	42	54	56	58	58	59	59	60	55	54	65	56	58	58	59	59	60	55	54	65
	4,8	350	53	51	48	45	43	42	36	35	48	62	60	57	54	52	51	45	43	57	64	64	62	60	60	60	55	54	65	64	64	62	60	60	60	55	54	65
200	1,4	160	40	41	40	38	38	37	31	29	43	48	49	48	47	46	46	40	38	51	55	56	55	54	53	53	46	44	58	55	56	55	54	53	53	46	44	58
	2,9	330	50	47	44	40	38	37	30	29	43	56	55	52	50	49	49	43	42	55	58	60	60	60	60	61	55	54	65	58	60	60	60	60	61	55	54	65
	4,4	500	54	51	48	45	43	42	36	34	48	59	58	56	54	54	54	48	47	59	65	65	63	61	60	61	55	54	66	65	65	63	61	60	61	55	54	66
250	1,4	240	42	42	41	39	38	38	31	28	43	51	51	50	48	47	47	40	37	52	57	58	56	55	54	53	46	44	59	57	58	56	55	54	53	46	44	59
	2,9	520	51	48	45	41	39	38	31	29	44	57	56	54	52	50	50	44	43	56	61	62	62	62	61	62	56	55	67	61	62	62	62	61	62	56	55	67
	4,5	800	55	53	49	46	44	43	37	35	49	61	60	58	56	55	55	49	48	60	67	67	65	63	62	62	56	55	67	67	67	65	63	62	62	56	55	67

*sound level in dB/octave in relation to 10⁻¹²W

General:

- Minimum static pressure drop over the control P_{min} in Pa
- Sound power L_w in dB in the octave bands at a reference value of 10-12 Watt.
- The selection table shows the L_w and L_p values for discharge sound. The sound pressure levels L_p , dB(A) stated have taken into account the attenuation of a silencer and a ceiling diffuser with plenum box.
- The adopted room attenuation is 10dB. If the actual value is lower, the dB(A) values have to be corrected.
- Note: the L_w values have been measured with one end nozzle of the duct in the free room. (i.e. including end reflection). For rooms with a low sound level (<25dB(A)), hard surfaces, light walls etc. consult an acoustic consultant.
- The available pressure drop across the unit has to be minimal 50 Pa. Interpolation of intermediate values is acceptable.

Authority

To ensure accuracy of the unit, the pressure drop across the damper should be at least equal to the total pressure drop behind the unit (duct plus grilles, diffusers).

Commissioning

The advantage over conventional dampers is that repeated measurements and adjustments by a qualified commissioning engineer are no longer required.

If the system pressure changes, e.g. due to the opening or closing of duct sections, the volume flows in the entire system change; this is not the case when CAV constant flow regulators are used. The controllers respond immediately and adjust the damper positions directly so that the set volume flow is held constant over the entire differential pressure range. The CAV regulators can be supplied with an electric actuator for changing the set value.

Installation instructions

- CAV constant flow regulators are adjusted for the entire scaled application area.
 - To install the regulator, a straight inlet section which is at least three times as long as the nominal width and a straight outlet section which is at least 1.5 times as long as nominal width is required. Installation directly downstream or upstream of flow disruption points (bends, branches, etc.) reduces the control accuracy.
 - The volume flow set point is adjusted during installation. This does not affect the control accuracy.
 - The basic version is adjusted manually by setting the pointer to the required set point on the scale and fixing this setting.
 - Dual controller: If the duct cross section is larger than the available controller size, two or more CAV can be installed in parallel. The volume flow must be distributed in such a way that the same flow velocity is configured for each controller.
- Suitable metal plates for connecting the flanges and compensating for differences in length must be provided on site. Sound power levels must be added up.
- CAV constant flow regulators and sound attenuators are supplied individually. Assembly on site!



Accessories

Silencer

For reduction of internal flow noise. Sound attenuator length 500-750-1000-1500 mm. For performance details check model K100 and R01 silencer catalogue.



K100



R01

Quick Selection		Model:		K100		
Maximum possible reduction of flow noise in [dB]						
width [mm]		200	300	400	500	600
No. Of splitters		1	1	2	2	3
height [mm]	100	-	-	-	-	-
	150	-16	-10			
	200	-16	-10	-16	-12	-15
	250		-10	-16	-12	-16
	300		-10	-16	-12	-15
Total Length L: 1000 mm						

Quick Selection		Model:		R01	
Maximum possible reduction of flow noise in [dB] with a					
Size	Outer diameter	L [mm]			
DN	Ø [mm]	750	1000		
100	200	-22	-	db	
125	225	-22	-25		
140	240	-22	-25		
160	260	-22	-24		
200	300	-19	-24		
250	355	-18	-22		
315	415	-17	-20		
400	500	-15	-20		

Reheat Coil

- Separately deliverable for reheat of air volume
- Casing made of galvanised sheet steel
- Flanged on both ends
- Copper tubes and aluminium fins
- Generally two rows
- Maximum operating pressure 16 bar
- For warm water up to 100 °C
- Water connections horizontal, air venting by customer





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