ROUND VOLUME FLOW CONTROLER

RVC

Application

The round mechanical constant volume controller, type RVC, is suitable for both supply and exhaust of air in both high and low pressure systems.
The controller keeps the air quantity constant (CAV) without auxiliary power and independent of the static initial pressure.
The air flow is set at the factory, with adjustment possible within the whole control range by means of graduation.

Technical information

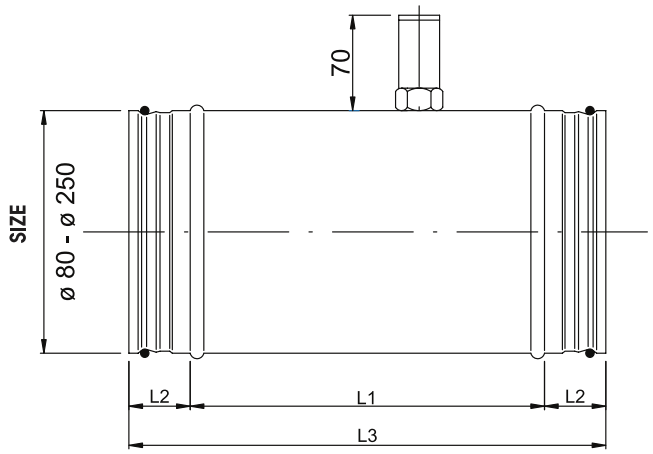
Characteristics:

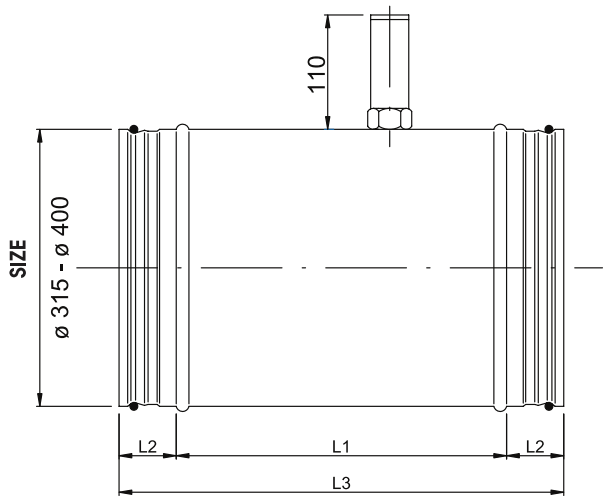
- suitable for air quantities of 40 to 4,500 m³/h
- available in 9 sizes
- operating temperature: -0°C to +100°C
- differential pressure range: minimum differential pressure (see diagram 1) to maximum 1000 PA
- air quantity-control precision: +/- 10 % (if <100 m³/h, variation to 10 m³/h)
- recommended air speed: 4.5 m/s (minimum 2.7 m/s)
- low resistance
- can be assembled in any position
- short fitting length
- control mechanism is maintenance free

Construction:

- T-housing: smooth round tube made of galvanized steel sheet, laser-welded. With a plug and socket connection with rolled rubber sealing ring on both ends.

Installation dimensions





L_1 = installation length

Selection table

Size (mm)	Airflow m³/h		Dimensions in mm		
	min.	max.	L_1	L_2	L_3
80	40	125	120	40	200
100	70	220	170	40	250
125	100	280	170	40	250
140	140	400	170	40	250
160	180	500	240	40	320
200	250	900	240	40	320
250	500	1500	240	40	320
315	800	3000	220	60	340
400	1000	4500	295	60	415

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- valve face, valve spindle and spring made of stainless steel materials
- synthetic bearings
- provided with 25 or 50 mm of insulation upon request
- volume control provided with servo motor: upon request

Specifications description

Circular air volume controller for constant volume systems, mechanically independent operation without auxiliary power, suitable for inlets and outlets, differential pressure range to 1000 PA. Excellent air quantity accuracy, maintenance-free and can be fitted in any position.
Made of galvanized steel sheet with plug and socket connections and rubber seals. The air volume is set at the factory, with the possibility of manually changing this setting after assembly over the whole control range by means of graduation.

Type: RVC
size... mm

Fixing

The special plug and socket connections do not require screws or rivets with horizontal assembly. Can also be fitted in vertical ducts. The functioning of the controller is not influenced by the construction and suspension system.
Regarding the assembly position, any disruption of the approaching flow due to bends or branches in ducts must be taken into account.
A straight supply flow of at least three times the control diameter is recommended. If this is not maintained, a slight variation in the set volume is possible.

Options

Possible dimensions: ø 80 mm up to ø 400 mm

How to order

Round Volume flow Controller diameter 200 mm, for an airflow of 500 m^3/h

R	V	C	-	-	-	-	0	2	0	0	0	5	0	0
							size				airflow			

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Graphic nr. 1: Minimum static pressure difference at the controller

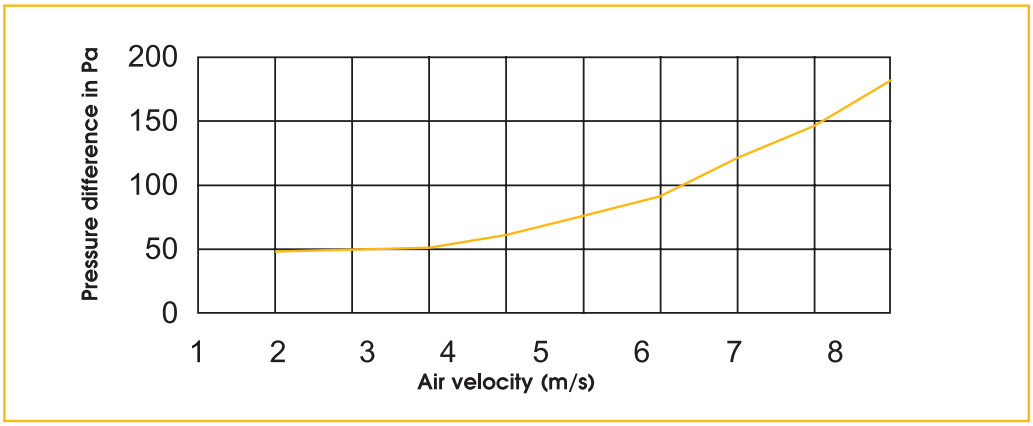

Table nr. 1: Air flow noise, generated by the controller

Size (mm)	Airflow m³/h	Static Pressure difference (Pa)																											
		100 Pa									250 Pa									500 Pa									
		Lw (dB)								Lp	Lw (dB)								Lp	Lw (dB)								Lp
		63	125	250	500	1000	2000	4000	8000		63	125	250	500	1000	2000	4000	8000		63	125	250	500	1000	2000	4000	8000	
80	40	37	37	35	33	33	33	28	27	38	39	42	43	44	44	46	41	41	50	46	49	49	50	51	53	48	48	57
	82	49	47	44	41	39	39	33	32	45	51	51	50	49	48	49	44	44	54	58	58	56	55	55	56	51	51	61
	125	52	51	48	45	44	44	38	37	49	61	60	57	54	53	53	47	46	58	68	66	63	61	59	59	53	52	65
100	70	40	39	38	36	35	36	30	29	41	43	45	46	46	47	49	44	43	53	49	52	52	53	54	55	50	50	60
	135	50	48	45	42	41	40	34	33	46	59	57	54	51	50	49	43	42	55	60	60	58	57	57	58	53	52	63
	200	54	52	49	47	45	45	39	38	51	63	61	58	55	54	54	48	47	59	70	68	65	62	61	60	54	53	66
125	100	41	40	38	36	35	36	30	29	41	45	47	47	48	48	49	44	43	54	52	54	54	54	55	56	50	49	60
	190	51	49	46	42	41	40	34	32	46	55	54	53	51	51	51	46	45	56	61	61	59	58	57	58	52	52	63
	280	54	53	50	47	45	45	39	37	50	63	61	58	55	54	53	47	46	59	64	64	62	61	61	62	57	56	67
140	140	43	42	40	38	37	37	31	30	42	47	49	49	49	50	51	46	45	55	53	56	56	56	56	58	52	51	62
	270	53	51	47	44	43	42	36	34	48	61	59	56	53	51	51	44	43	57	63	63	61	60	59	60	54	54	65
	400	56	55	52	49	47	47	41	39	52	65	63	60	57	56	55	49	48	61	72	70	67	64	62	62	56	55	68
160	180	44	43	41	39	38	38	32	31	43	48	50	50	50	50	51	46	45	56	55	57	57	57	57	58	53	51	63
	340	53	51	48	44	43	42	36	34	48	62	60	56	53	51	51	44	43	57	64	64	62	60	60	60	55	54	65
	500	57	55	52	49	47	47	40	39	52	66	64	61	58	56	55	49	48	61	72	70	67	64	62	62	56	54	68
200	250	45	43	41	39	38	37	31	30	43	51	52	52	51	51	51	45	44	56	57	59	58	58	57	58	52	50	63
	575	55	53	50	46	44	44	37	36	50	64	62	58	55	53	53	46	45	59	66	66	64	62	62	62	56	56	67
	900	-	-	-	-	-	-	-	-	-	68	66	63	60	58	58	52	50	64	75	73	70	67	65	65	58	57	70
250	500	48	47	45	43	41	41	35	34	47	54	56	55	55	54	55	49	48	60	61	62	62	61	61	62	56	54	66
	1000	57	55	52	49	47	46	39	38	52	66	64	61	57	55	55	48	47	61	69	68	67	65	64	64	59	58	69
	1500	-	-	-	-	-	-	-	-	-	70	68	65	62	60	60	53	52	65	77	75	72	68	67	66	60	58	72
315	600	48	46	44	41	39	39	32	31	44	55	56	55	54	53	53	46	44	58	62	63	62	61	60	59	53	51	65
	1400	57	55	52	48	46	45	39	37	51	66	64	60	57	55	54	47	46	60	70	69	67	65	64	64	58	57	69
	2200	-	-	-	-	-	-	-	-	-	71	69	65	62	60	59	53	51	65	77	75	72	69	67	66	60	58	72
400	1000	50	48	45	42	41	40	33	31	46	58	59	57	56	55	54	47	45	59	65	65	64	62	61	61	54	51	66
	2200	58	56	52	49	47	46	39	37	52	67	65	61	57	55	54	48	46	61	72	71	68	66	65	65	59	57	70
	3800	-	-	-	-	-	-	-	-	-	73	71	67	64	62	61	55	53	67	79	77	74	70	68	68	61	60	74

Lw = Noise level in dB (ref: 10-12 W)
Lp = Sound pressure level in dB (A) at 8 dB (A) local soundproofing

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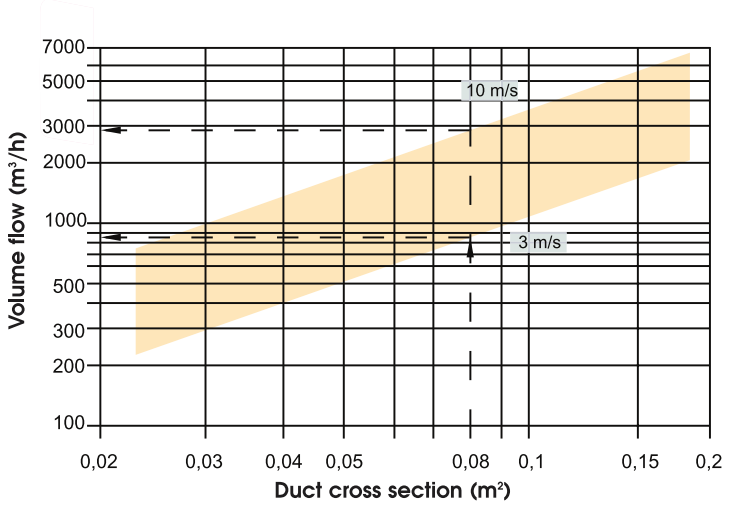
Table nr. 2: Correction data for calculation of the radiating noise of a pipe 6 m length with built-in volume flow controller

Size (mm)	Standard exection Correction values in dB/octave								Execution with 25 mm insulation Correction values in dB/octave								Execution with 50 mm insulation Correction values in 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	36	33	32	23	17	12	11	11	39	35	39	35	32	33	34	29	42	37	45	46	47	54	56	47
100	34	32	30	22	16	12	11	10	38	35	38	34	31	33	34	28	41	38	46	45	47	54	57	47
125	29	29	31	24	21	19	15	11	35	33	37	36	32	33	36	27	35	36	42	48	51	60	58	45
140	27	28	27	21	18	14	12	10	29	29	32	32	32	33	33	26	31	30	37	42	45	52	54	44
160	23	23	20	18	11	10	9	8	27	26	28	29	27	31	31	25	29	28	35	40	44	51	54	44
200	22	19	16	16	15	11	9	8	23	18	23	26	29	29	29	24	26	22	29	37	42	51	53	43
250	19	16	13	12	12	10	9	8	23	18	20	24	26	30	28	24	25	20	26	35	41	50	52	42
315	18	14	12	13	11	11	8	8	22	17	19	23	27	29	28	24	26	18	26	38	42	51	53	45
400	17	11	10	10	10	9	7	6	19	14	17	22	25	28	27	23	20	16	23	33	39	48	50	40

Volume flow against duct cross-section



Example:

Given: width 400 mm
height 200 mm
duct cross section 0.08 m²

Which volume flow is possible?

Solution:
V at 3 m/s = 865 m³/h
V at 10 m/s = 2880 m³/h

Air velocity between 3 m/s and 10 m/s