



ERVC-N

Circular variable air flow regulator with
servomotor LMV-D3MP



Technical sheet

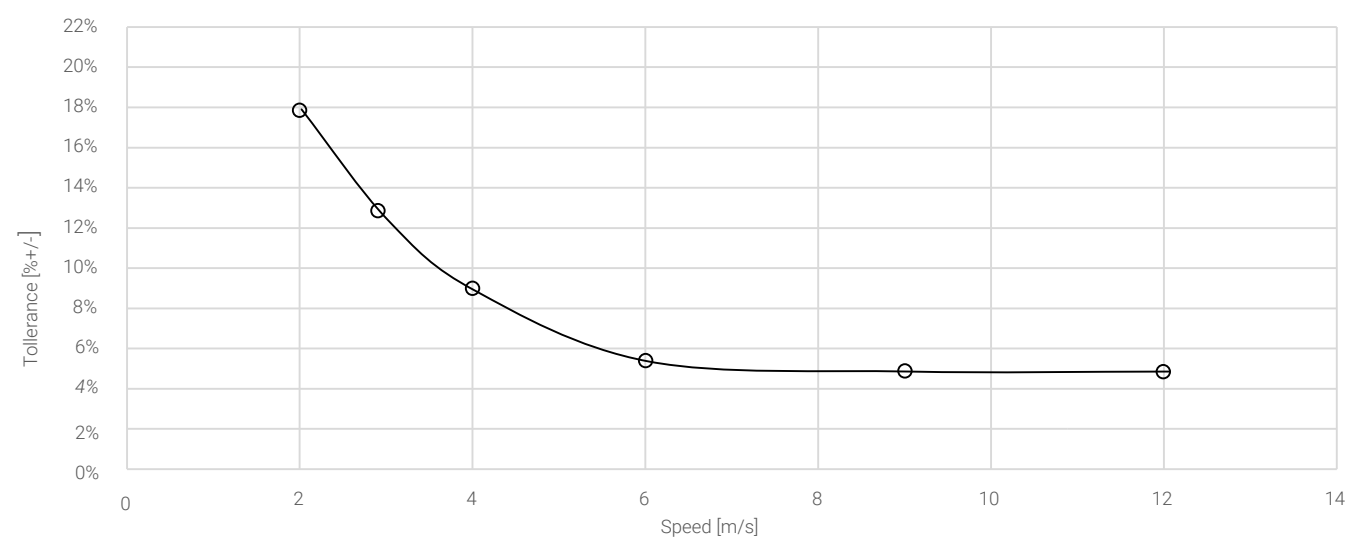
Rev.01



To prevent noise propagation that could reduce the comfort inside the building, it is recommend to consider maximum flow rate with a VAV internal air speed of 10 m/s. Pressure range from 20 to 1000 Pa.

Model	Minimum air flow (v=2 m/s)	Nominal air flow (v=10 m/s)	Maximum air flow(v=12 m/s)
mm	m³/h	m³/h	mm
125	53	445	530
160	87	725	870
200	138	1130	1380
250	212	1770	2120
315	337	2810	3370
355	428	3570	4280
400	543	4525	5430

When ordering, indicate the minimum ad maximum air flow rates to be programmed.
The uncertainty of the probe reading at various air flow rates is shown below. We recommend use in the range 6-8 m/s:



N.B. Please note that the values shown in the following table are indicative data obtain through mathematical extrapolation and not experimental values.

Model			Frequency(Hz)								Lw	Frequency (Hz)								Lw
Φ	Speed	Air flow	125	250	500	1000	2000	4000	8000	dB(A)		125	250	500	1000	2000	4000	8000	dB(A)	
mm	m/s	m³/h	NOISE GENERATED AT 200 Pa									NOISE GENERATED AT 500 Pa								
125	2	70	38	39	39	39	36	29	23	43		42	44	47	48	45	40	37	52	
	6	250	50	52	51	48	44	38	31	53		54	57	58	57	53	49	44	61	
	10	450	56	58	56	51	47	42	34	57		60	63	64	61	57	53	47	66	
	12	530	59	60	59	53	49	43	35	59		63	66	66	63	58	55	48	68	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa SINGLE CASE									NOISE RADIATED AT 500 Pa SINGLE CASE								
125	2	70	22	24	27	30	28	21	16	34		26	29	35	39	37	32	30	43	
	6	250	34	37	39	39	36	30	24	43		38	42	46	48	45	41	37	52	
	10	450	40	43	44	42	39	34	27	47		44	48	52	52	49	45	40	56	
	12	530	43	45	47	44	41	35	28	49		47	51	54	54	50	47	41	58	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa DOUBLE CASE									NOISE RADIATED AT 500 Pa DOUBLE CASE								
125	2	70	19	22	23	21	18	11	3	25		23	27	31	30	27	22	17	34	
	6	250	31	35	35	30	26	20	11	36		35	40	42	39	35	31	24	44	
	10	450	37	41	40	33	29	24	14	40		41	46	48	43	39	35	27	48	
	12	530	40	43	42	35	31	25	15	42		44	49	50	45	40	37	28	50	
mm	m/s	m³/h	NOISE GENERATED AT 200 Pa									NOISE GENERATED AT 500 Pa								
160	2	110	40	40	40	40	37	31	35	44		45	45	48	49	47	42	38	53	
	6	400	52	53	52	49	45	40	33	54		57	58	59	58	54	51	45	62	
	10	730	58	59	58	53	49	44	37	59		63	65	65	62	58	55	49	67	
	12	869	61	62	60	55	50	45	38	61		65	68	68	64	59	57	50	69	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa SINGLE CASE									NOISE RADIATED AT 500 Pa SINGLE CASE								
160	2	110	24	25	28	31	29	23	18	35		29	30	36	40	39	34	31	44	
	6	400	36	38	40	40	37	32	26	44		41	43	47	49	46	43	38	53	
	10	730	42	44	46	44	41	36	30	49		47	50	53	53	50	47	42	57	
	12	869	45	47	48	46	42	37	31	50		49	53	56	55	51	49	43	59	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa DOUBLE CASE									NOISE RADIATED AT 500 Pa DOUBLE CASE								
160	2	110	21	23	24	22	19	13	5	27		26	28	32	31	29	24	18	35	
	6	400	33	36	36	31	27	22	13	37		38	41	43	40	36	33	25	45	
	10	730	39	42	42	35	31	26	17	42		44	48	49	44	40	37	29	50	
	12	869	42	45	44	37	32	27	18	44		46	51	51	46	41	39	30	52	

N.B. Please note that the values shown in the following table are indicative data obtain through mathematical extrapolation and not experimental values.

Model			Frequency(Hz)								Lw	Frequency (Hz)								Lw
Φ	Speed	Air flow	125	250	500	1000	2000	4000	8000	dB(A)		125	250	500	1000	2000	4000	8000	dB(A)	
mm	m/s	m³/h	NOISE GENERATED AT 200 Pa									NOISE GENERATED AT 500 Pa								
200	2	160	35	38	38	41	38	34	27	45		41	44	45	49	48	44	39	53	
	6	625	54	52	50	51	47	42	35	55		59	58	57	59	57	52	47	63	
	10	1150	62	59	56	55	51	46	38	59		57	65	63	63	62	56	50	68	
	12	1357	65	62	58	57	53	47	39	62		71	68	65	65	63	58	52	70	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa SINGLE CASE									NOISE RADIATED AT 500 Pa SINGLE CASE								
200	2	160	19	23	26	32	30	26	20	36		25	29	33	40	40	36	32	45	
	6	625	38	37	38	42	39	34	28	45		43	43	45	50	49	44	40	54	
	10	1150	46	44	44	46	43	38	31	50		51	50	51	54	54	48	43	59	
	12	1357	49	47	46	48	45	39	32	52		55	53	53	56	55	50	45	61	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa DOUBLE CASE									NOISE RADIATED AT 500 Pa DOUBLE CASE								
200	2	160	16	21	22	23	20	16	7	27		22	27	29	31	30	26	19	36	
	6	625	35	35	34	33	29	24	15	37		40	41	41	41	39	34	27	45	
	10	1150	43	42	40	37	33	30	21	44		48	48	47	45	44	38	30	50	
	12	1357	47	45	42	39	35	29	19	44		52	51	49	47	45	41	33	54	
mm	m/s	m³/h	NOISE GENERATED AT 200 Pa									NOISE GENERATED AT 500 Pa								
250	2	250	46	44	42	44	38	30	29	47		52	51	50	53	48	40	40	56	
	6	970	58	55	54	51	47	42	37	56		64	62	62	61	57	52	48	65	
	10	1800	64	61	59	55	51	48	41	61		69	68	67	64	61	57	51	69	
	12	2121	66	63	61	56	53	50	42	63		72	70	69	65	63	60	53	71	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa SINGLE CASE									NOISE RADIATED AT 500 Pa SINGLE CASE								
250	2	250	30	29	30	35	30	22	22	37		36	36	38	44	40	32	33	47	
	6	970	42	40	42	42	39	34	30	46		48	47	50	52	49	44	41	56	
	10	1800	48	46	47	46	43	40	34	51		53	53	55	55	53	49	44	60	
	12	2121	50	48	49	47	45	42	35	52		56	55	57	56	55	52	46	61	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa DOUBLE CASE									NOISE RADIATED AT 500 Pa DOUBLE CASE								
250	2	250	27	27	26	26	20	12	9	29		32	30	33	33	32	27	23	38	
	6	970	39	38	38	33	29	24	17	39		45	45	46	43	39	34	28	48	
	10	1800	45	44	43	37	33	30	21	44		50	51	51	46	43	39	31	52	
	12	2121	47	46	45	38	35	32	22	45		53	53	53	47	45	41	33	54	

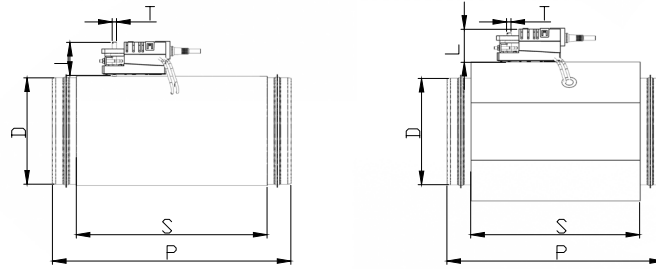
N.B. Please note that the values shown in the following table are indicative data obtain through mathematical extrapolation and not experimental values.

Model			Frequency(Hz)								Lw	Frequency (Hz)								Lw
Φ	Speed	Air flow	125	250	500	1000	2000	4000	8000	dB(A)		125	250	500	1000	2000	4000	8000	dB(A)	
mm	m/s	m³/h	NOISE GENERATED AT 200 Pa									NOISE GENERATED AT 500 Pa								
315	2	400	46	42	43	44	41	37	32	48		51	47	49	51	50	45	43	56	
	6	1550	59	56	55	53	49	46	40	58		64	61	62	61	58	55	50	66	
	10	2850	65	62	61	57	53	50	43	63		70	68	67	65	62	59	54	70	
	12	3367	67	65	63	58	54	51	44	64		71	70	68	66	6	60	57	71	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa SINGLE CASE									NOISE RADIATED AT 500 Pa SINGLE CASE								
315	2	400	30	27	31	35	33	29	25	39		35	32	37	42	42	37	36	47	
	6	1550	43	41	43	44	41	38	33	48		48	46	50	52	50	47	43	56	
	10	2850	49	47	49	48	45	42	36	52		54	53	55	56	54	51	47	61	
	12	3367	51	50	51	49	46	43	37	54		55	55	56	57	54	52	50	61	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa DOUBLE CASE									NOISE RADIATED AT 500 Pa DOUBLE CASE								
315	2	400	27	25	27	26	23	19	12	30		32	30	33	33	32	27	23	38	
	6	1550	40	39	39	35	31	28	20	40		45	44	46	43	40	37	30	48	
	10	2850	46	45	45	39	35	32	23	45		51	51	51	47	44	41	34	53	
	12	3367	48	48	47	40	36	33	24	47		53	53	52	48	44	41	36	54	
mm	m/s	m³/h	NOISE GENERATED AT 200 Pa									NOISE GENERATED AT 500 Pa								
355	2	500	45	44	42	45	42	39	33	49		53	46	51	52	53	44	44	57	
	6	2000	62	56	58	57	48	48	42	60		64	61	62	61	58	55	50	66	
	10	3700	65	62	61	57	53	60	43	63		74	67	70	66	66	57	56	72	
	12	4276	67	65	63	58	54	51	44	64		74	70	71	67	65	60	56	73	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa SINGLE CASE									NOISE RADIATED AT 500 Pa SINGLE CASE								
355	2	500	29	29	30	36	34	31	26	40		37	31	39	43	45	36	37	49	
	6	2000	46	41	46	48	40	40	35	51		48	46	50	52	50	47	43	56	
	10	3700	49	47	49	48	45	42	36	52		58	52	58	57	58	49	49	63	
	12	4276	51	50	51	49	46	43	37	54		58	55	59	58	57	52	49	63	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa DOUBLE CASE									NOISE RADIATED AT 500 Pa DOUBLE CASE								
355	2	500	26	27	26	27	24	21	13	31		34	29	35	34	35	26	24	40	
	6	2000	43	39	42	39	30	30	22	43		45	44	46	43	40	37	30	48	
	10	3700	46	45	45	39	35	32	23	45		55	50	54	48	48	39	36	55	
	12	4276	48	48	47	40	36	33	24	47		55	54	54	49	47	42	36	55	

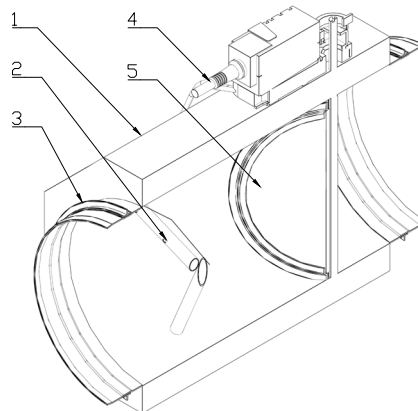
N.B. Please note that the values shown in the following table are indicative data obtain through mathematical extrapolation and not experimental values.

Model			Frequency(Hz)								Lw	Frequency (Hz)								Lw
Φ	Speed	Air flow	125	250	500	1000	2000	4000	8000	dB(A)		125	250	500	1000	2000	4000	8000	dB(A)	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa DOUBLE CASE									NOISE RADIATED AT 500 Pa DOUBLE CASE								
400	2	648	48	43	44	44	43	38	34	49		53	49	50	52	52	46	44	57	
	6	2500	63	55	59	58	52	50	44	62		66	62	62	62	59	56	53	66	
	10	4550	66	62	61	58	54	52	47	63		71	68	67	66	63	61	57	71	
	12	5429	68	65	64	60	55	54	49	66		74	70	70	68	64	62	59	73	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa SINGLE CASE									NOISE RADIATED AT 500 Pa SINGLE CASE								
400	2	648	32	28	32	35	35	30	27	40		37	34	38	43	44	38	37	57	
	6	2500	47	40	47	49	44	42	37	52		50	47	50	53	51	48	46	66	
	10	4550	50	47	49	49	46	44	40	53		55	53	55	57	55	53	50	71	
	12	5429	52	50	52	51	47	46	42	55		58	55	58	59	56	54	52	73	
mm	m/s	m³/h	NOISE RADIATED AT 200 Pa DOUBLE CASE									NOISE RADIATED AT 500 Pa DOUBLE CASE								
400	2	648	29	26	28	26	25	20	14	31		34	32	34	34	34	28	24	39	
	6	2500	44	38	43	40	34	32	24	44		47	45	46	44	41	38	33	49	
	10	4550	47	45	45	40	36	34	24	46		52	51	51	48	45	43	37	53	
	12	5429	49	48	47	42	37	36	29	48		55	53	53	50	46	44	39	55	

DIMENSIONS



Model	H	L	P	S	T
mm	mm	mm	mm	mm	mm
125	185	60	310	220	8
160	220	60	400	220	8
200	260	60	400	220	8
250	310	60	400	310	8
315	375	100	500	310	12
355	415	100	500	410	12
400	460	100	500	410	12

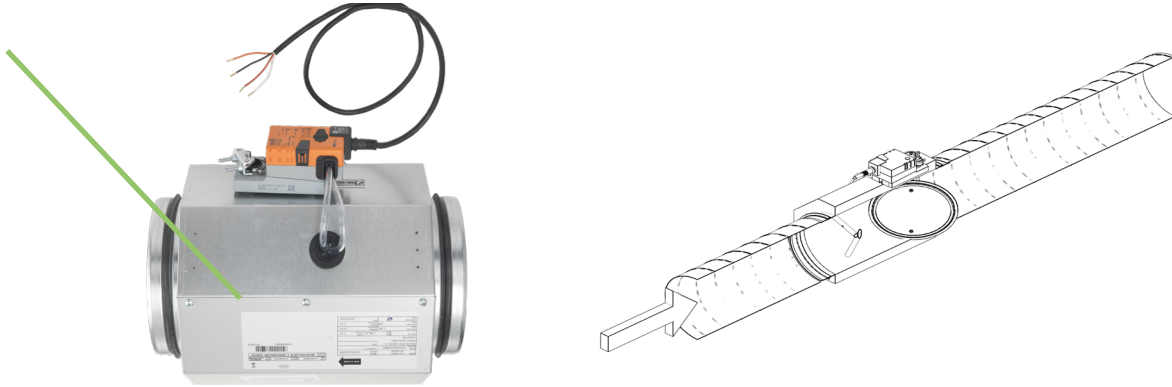


- 1- Galvanized steel sheet casing, 0.8 mm thick for diameters from 125 mm to 250 mm and 1 mm thick for diameters from 315 mm to 400 mm; version with double casing made of polyester fiber with a density of 15 kg/m³ and fire reaction class Bs2 in accordance with UNI EN 13510-1
- 2- Dynamic dp probe with nylon pressure taps, operating range from 20 to 1000 Pa;
- 3- Silicone gasket;
- 4- Servomotor with cable configurable via NFC and Belimo Assistant App2 application;
- 5- Galvanized steel control damper with a thickness of 0.8 mm for diameters from 125 mm to 200 mm, 1 mm for diameters from 200 mm to 250 mm, and 1.5 mm for diameters from 315 mm to 400 mm, with silicone sealing gaskets (leak tests performed in accordance with EN 1751);

INSTALLATION

ERVC-N regulators can be installed in either a vertical or horizontal position without affecting the regulation; ensure that the air flow follows the specifications indicated on the label affixed to the regulator itself.

The flow must pass first through the measuring orifice and then through the damper; this is to prevent turbulence at the measuring element, which could affect the regulation.



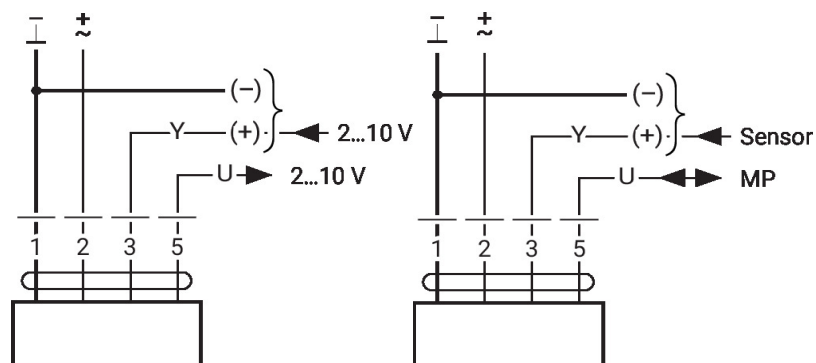
Particular attention must be paid to any constrictions, bends or deviations upstream of the ERVC-N controller, ensuring that the straight section, both upstream and downstream, is at least 2–3 times the diameter of the controller.

Air velocity also affects the quality of control; excessively low velocities result in greater uncertainty in the sensor's readings. It is therefore recommended that the VAV be sized to achieve a flow velocity of between 6 and 8 m/s.

The power supply is 24 V AC/DC via a safety transformer; the electrical connections required for correct installation are listed below:

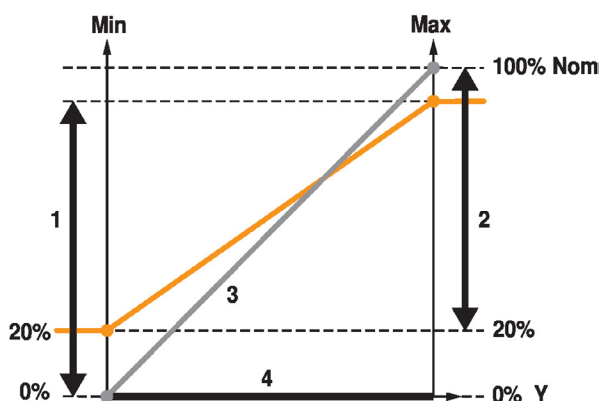
MP-Bus

AC/DC 24V



- 1- Black;
- 2- Red;
- 3- White;
- 5- Orange;

Below are the regulation graphs for the 0...10 V version and for the 2...10 V version:



- 1- Regolazione range Min;
- 2- Regolazione range Max
- 3- Feedback U 0...100% Nom;
- 4- Controllo Y Min...Max;

ACCESSORIES

The following accessories can be purchased for the managing of the controller:

- Display ZTH EU;
- Connection cable ZK1-GEN;

The display ZTH EU display is an assistance tool for parametrization and control of the regulator, allowing realtime check of air flow rate, damper opening percentage, and control ramp adjustment by varying the minimum and maximum flow rate parameter and the required set point:



The electrical connection is made using the ZK1-GEN accessory, which is equipped with RJ11 and LINK 1.0 connectors at both ends to enable the servomotor and display to be connected correctly.

The controllers are supplied as standard with MP-Bus communication. To enable the use of other communication protocols, it is necessary to purchase native servomotors with BACnet, Modbus RTU or KNX connections.

CODE

How to order

ERVC-N	0	I	125
			
Circular regulator ERVC-N	0 Signal 0...10 V 2 Signal 2...10V	[] Single case I Double case	Diameter 160 200 250 315 355 400



Head quarter

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ISO 9001
ISO 50001
ISO 45001
ISO 14001

Certified Management System