ERVC-N

Circular variable air flow regulator with servomotor LMV-D3MP

MADE IN ITALY

Modbus

NFC

KNX

BACnet

Technical sheet

Rev.00

ecoclima

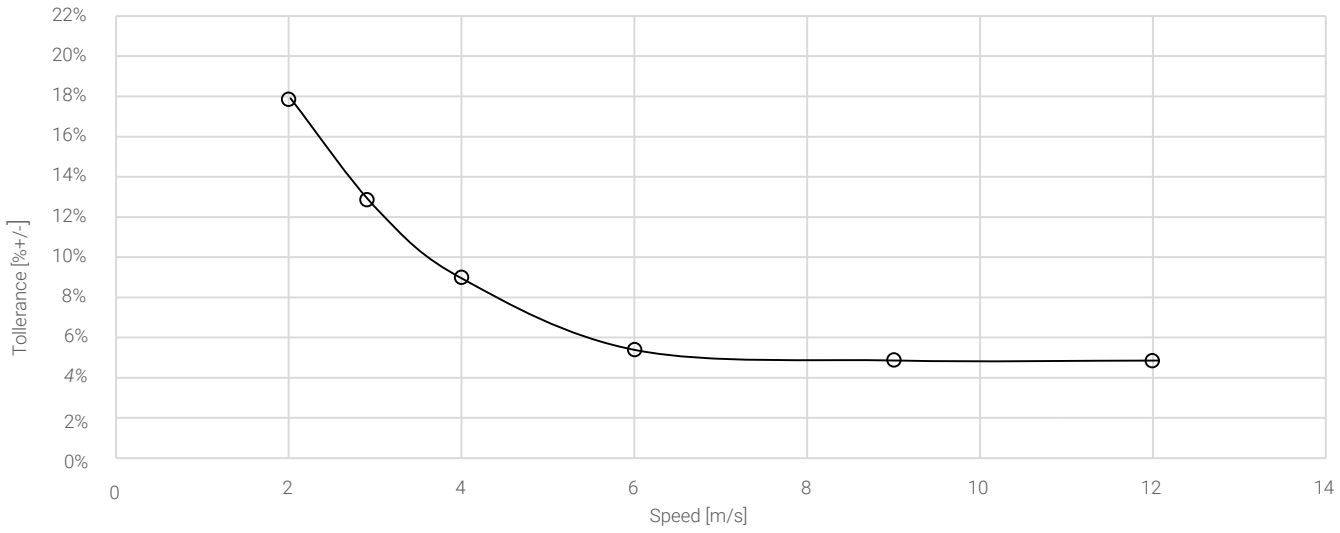
AIR EVOLUTION

ERVC-N / ERVC-N-I

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	52	**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**

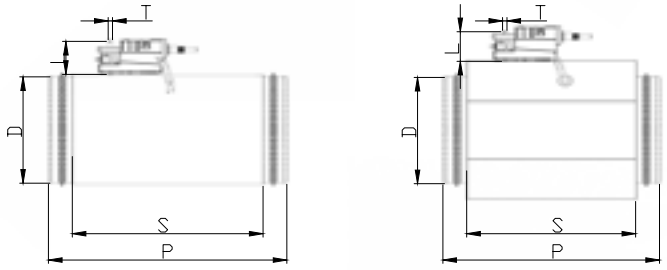
N.B. Please note that the values shown in the following table are indicative data obtain through mathematical extrapolation and not experimental values.

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**

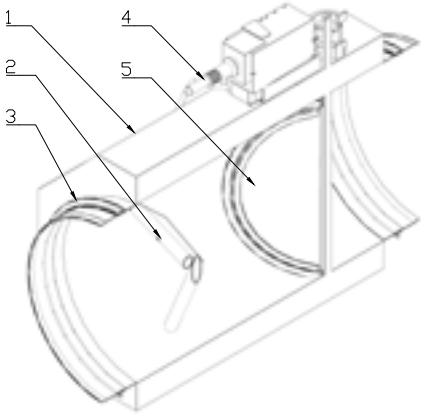
N.B. Please note that the values shown in the following table are indicative data obtain through mathematical extrapolation and not experimental values.

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.

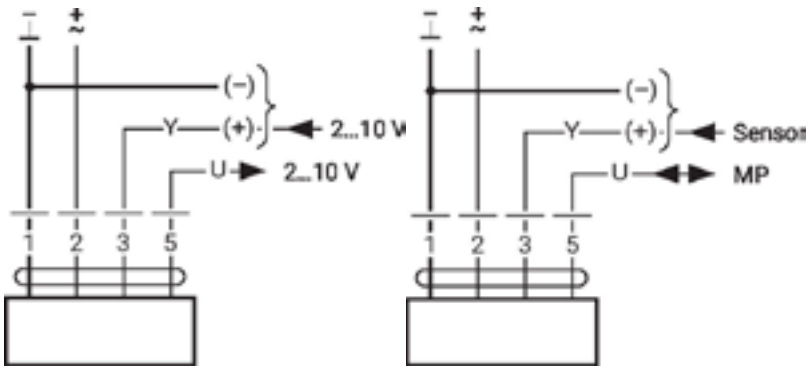
The flow must pass first through the measuring orifice and then through the damper; this is to prevent turbulence at the measuring element, which could affect the regulation.

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:

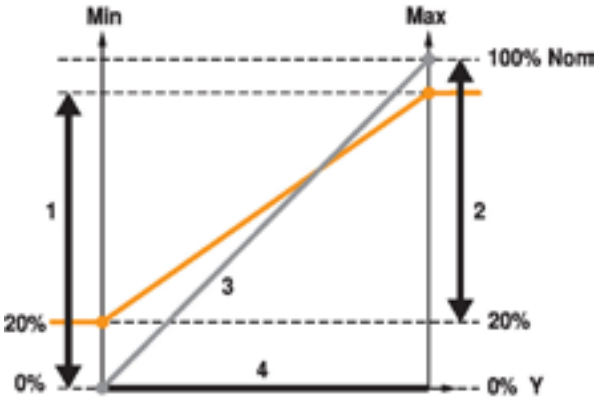
MP-Bus

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;
5- 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, iti 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

ecoclima
AIR EVOLUTION

Head quarter

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