



CIRCULAR AIR FLOW REGULATORS

AT-RPC
SERIES

OVERVIEW

Overview:

The AT-RPC series air flow regulators are independent control units that work without absorbing any external power. These regulators can be considered as self regulating duct dampers able to supply a flow of air requested independently from the variations of pressures in the system. As a result, the control system guarantees the balancing requirements of the system and ensures a constant air flow.

Variable airflow models are available with electric or pneumatic actuators.

Working principle :

The air flow control system works by means of a free control plate, supported by two buffers in PTFE and connected to a calibrated spring. The aerodynamic forces contrast the force of the spring e push on the plate to the point of moving it into a position that in the end controls the flow of air.

Pressure, precision and purpose:

The control system work reliably starting from a minimum pressure difference which depends on the air speed (see diagram 1) up to a maximum pressure difference of 1000 Pa.

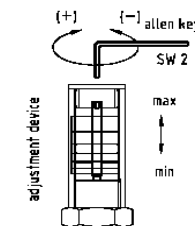
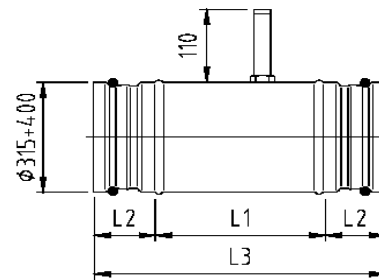
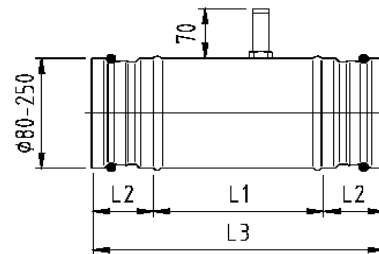
Generally, the variation in air flow is within a $\pm 10\%$ tolerance (up to 100 m³/h : ± 10 m³/h). IF the air speed is below 4 m/s or the control system is installed horizontally, the variations may be greater that those indicated. This occurs even when the profile of the air speed is not uniform or is distorted by curves, edges or bottle necks. Furthermore, the recommended air speed is around 4.5 m/s and should not be below 2.7 m/s.

Temperature:

The control system operated within a temperature range of between -30 °C and +100 °C.

A special heat resistant version can withstand temperatures up to 250 °C (300 °C for short periods) and is available on request.

AT-RPC : dimensions and construction



Diameter [mm]	L1 [mm]	L2 [mm]	Air flow ranges [m ³ /h]
100	170	40	[70 - 200]
125	170	40	[100 - 280]
160	240	40	[180 - 500]
200	240	40	[250 - 900]
250	240	40	[500 - 1.500]
315	220	60	[600 - 2.000]
400	295	60	[1.000 - 2.700]



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TECHNICAL SPECIFICATIONS

Construction:

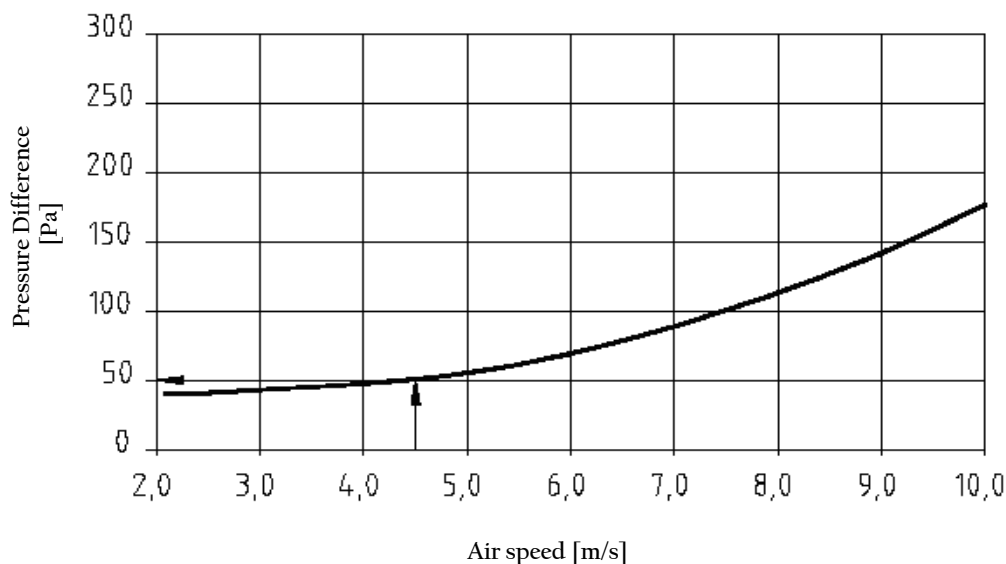
The shell of the control system is in galvanized steel and plate laser welded without deformations. The smooth surface of the casing allows the insertion of calibrated and shaped terminal connections with a rubber circular gasket. The air tight system is patented and offers various advantages, such as rigidity, easy fitting and removing, resulting in reduced installation costs. The control plate is supported by buffers in PTFE and equipped with an actuator to avoid any possible oscillation of the plate. The control system is also available on request in stainless steel or with a PUR coating or in different RAL colours.

Installation and calibration:

The control system can be used in supply or extraction ducts, in high or low pressure ventilation systems. Both vertical and horizontal installations are possible as a result of the exact balancing of the control plate. All controls can be calibrated for the air flow requested, directly in the factory. The manually calibrated control system can be easily set and reset directly by the customer. Any working value can be chosen as long as it is within the operating range of the control system.

Insulation:

On request, the control may be supplied with insulation of 25 or 50 mm thickness to reduce the noise or heat dispersion.





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diameter mm	air flow m ³ /h	100 Pa Lw dB								LwA dBa
		63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
80	40	37	37	35	33	33	33	28	27	38
	82	49	47	44	41	39	39	33	32	45
	125	52	51	48	45	44	44	38	37	49
100	70	40	39	38	36	35	36	30	29	41
	135	50	48	45	42	41	40	34	33	46
	200	54	52	49	47	45	45	39	38	51
125	100	41	40	38	36	35	36	30	29	41
	190	51	49	46	42	41	40	34	32	46
	280	54	53	50	47	45	45	39	37	50
160	180	44	43	41	39	38	38	32	31	43
	340	53	51	48	44	43	42	36	34	48
	500	57	55	52	49	47	47	40	39	52
200	250	45	43	41	39	38	37	31	30	43
	575	55	53	50	46	44	44	37	36	50
	900	-	-	-	-	-	-	-	-	-
250	500	48	47	45	43	41	41	35	34	47
	1000	57	55	52	49	47	46	39	38	52
	1500	-	-	-	-	-	-	-	-	-
315	600	48	46	44	41	39	39	32	31	44
	1400	57	55	52	48	46	45	39	37	51
	2200	-	-	-	-	-	-	-	-	-
400	1000	50	48	45	42	41	40	33	31	46
	2200	58	56	52	49	47	46	39	37	52
	3800	-	-	-	-	-	-	-	-	-

diameter mm	air flow m ³ /h	250 Pa Lw dB								LwA dBa
		63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
80	40	39	42	43	44	44	46	41	41	50
	82	51	51	50	49	48	49	44	44	54
	125	61	60	57	54	53	53	47	46	58
100	70	43	45	46	46	47	49	44	43	53
	135	59	57	54	51	50	49	43	42	55
	200	63	61	58	55	54	54	48	47	59
125	100	45	47	47	48	48	49	44	43	54
	190	55	54	53	51	51	51	46	45	56
	280	63	61	58	55	54	53	47	46	59
160	180	48	50	50	50	50	51	46	45	56
	340	62	60	56	53	51	51	44	43	57
	500	66	64	61	58	56	55	49	48	61
200	250	51	52	52	51	51	51	45	44	56
	575	64	62	58	55	53	53	46	45	59
	900	68	66	63	60	58	58	52	50	64
250	500	54	56	55	55	54	55	49	48	60
	1000	66	64	61	57	55	55	48	47	61
	1500	70	68	65	62	60	60	53	52	65
315	600	55	56	55	54	53	53	46	44	58
	1400	66	64	60	57	55	54	47	46	60
	2200	71	69	65	62	60	59	53	51	65
400	1000	58	59	57	56	55	54	47	45	59
	2200	67	65	61	57	55	54	48	46	61
	3800	73	71	67	64	62	61	55	53	67



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diameter mm	air flow m ³ /h	500 Pa Lw dB								LwA dBa
		63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
80	40	46	49	49	50	51	53	48	48	57
	82	58	58	56	55	55	56	51	51	61
	125	68	66	63	61	59	59	53	52	65
100	70	49	52	52	53	54	55	50	50	60
	135	60	60	58	57	57	58	53	52	63
	200	70	68	65	62	61	60	54	53	66
125	100	52	54	54	54	55	56	50	49	60
	190	61	61	59	58	57	58	52	52	63
	280	64	64	62	61	61	62	57	56	67
160	180	55	57	57	57	57	58	53	51	63
	340	64	64	62	60	60	60	55	54	65
	500	72	70	67	64	62	62	56	54	68
200	250	57	59	58	58	57	58	52	50	63
	575	66	66	64	62	62	62	56	56	67
	900	75	73	70	67	65	65	58	57	70
250	500	61	62	62	61	61	62	56	54	66
	1000	69	68	67	65	64	64	59	58	69
	1500	77	75	72	68	67	66	60	58	72
315	600	62	63	62	61	60	59	53	51	65
	1400	70	69	67	65	64	64	58	57	69
	2200	77	75	72	69	67	66	60	58	72
400	1000	65	65	64	62	61	61	54	51	66
	2200	72	71	68	66	65	65	59	57	70
	3800	79	77	74	70	68	68	61	60	74

