



RECTANGULAR CONSTANT AIR FLOW REGULATORS

AT-RPR SERIES

OVERVIEW

Overview:

the AT-RPR series of constant air flow regulators are used to automatically regulate the flow in rectangular ducts at a fixed capacity.

The scope is to maintain the nominal value of the constant air capacity, continuously and independently from the pressure variations in the duct.

Working principle:

The constant air flow regulator works by means of a slidable asymmetric and angled plate that guaranties a sensitive response even at low air flows.

Pressure, precision and purpose:

The regulator efficiently operates from a minimum pressure different, which depends on the air speed (see diagram 1), up to a maximum pressure difference of 1,000 Pa.

The general variation in the air flow is included within a $\pm 10\%$ tolerance. If the air speed is less than 4 m/s or if the regulator is installed horizontally, the variations can be higher than those indicated.

This also occurs when the air speed profile is not uniform or is distorted by curves, edges, bottle necks or dirt.

Temperature:

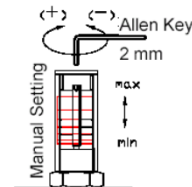
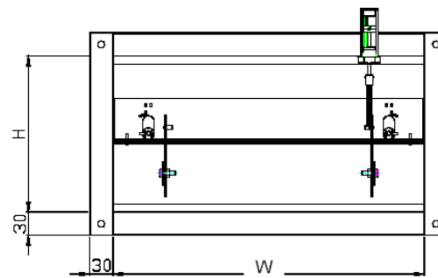
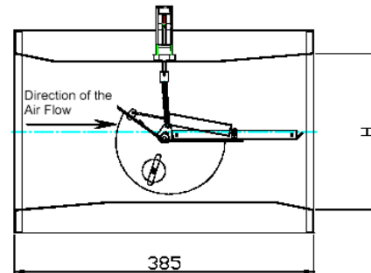
The control system operated within a temperature range of between $-30\text{ }^{\circ}\text{C}$ and $+100\text{ }^{\circ}\text{C}$.

A special heat resistant version can withstand temperatures up to $250\text{ }^{\circ}\text{C}$ ($300\text{ }^{\circ}\text{C}$ for short periods) and is available on request.

Construction:

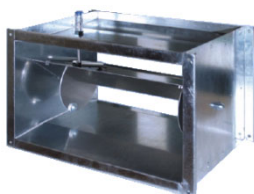
The control plate is supported by two slidable buffers made in PTFE that do not require maintenance. The pneumatic dampers avoid vibrations and oscillations of the control plate and guaranty a sensible response behaviour and precise control.

AT-RPR : dimensions and



Specifications:

- Self regulating, constant air flow regulator.
- Factory presetting to customer requested value
- Manual setting of the air flow through the calibration device.
- Variable base and height, length constant at 385 mm
- Base value between 150 mm and 600 mm
- Heights between 150 mm and 300 mm
- The base must be between the value of the height and its double ($H \leq W \leq 2H$)
- Fixing through 4 30 mm holes on flanges



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TECHNICAL SPECIFICATIONS

Installation:

The precise balancing of the control plate by means of a counter-weight, guaranties an exact control in any installation. It is recommended that the front air speed profile be as much as possible undisturbed because possible distortions (asymmetric to the flow of air on entry, bottle necks and edges) can have negative effects on the response and control.

Calibration:

The air flow regulators can be supplied either with setting made by the customer or precalibrated in the factory using customer requested values. By means of a 2mm special key, the air flow can easily be set or reset within the range of the corresponding scale by the customer directly.

Sizing:

Before sizing a duct system and choosing a certain air flow regulator, it is necessary to consider that the air speed inside the ducts should be between 3 and 10 m/s.

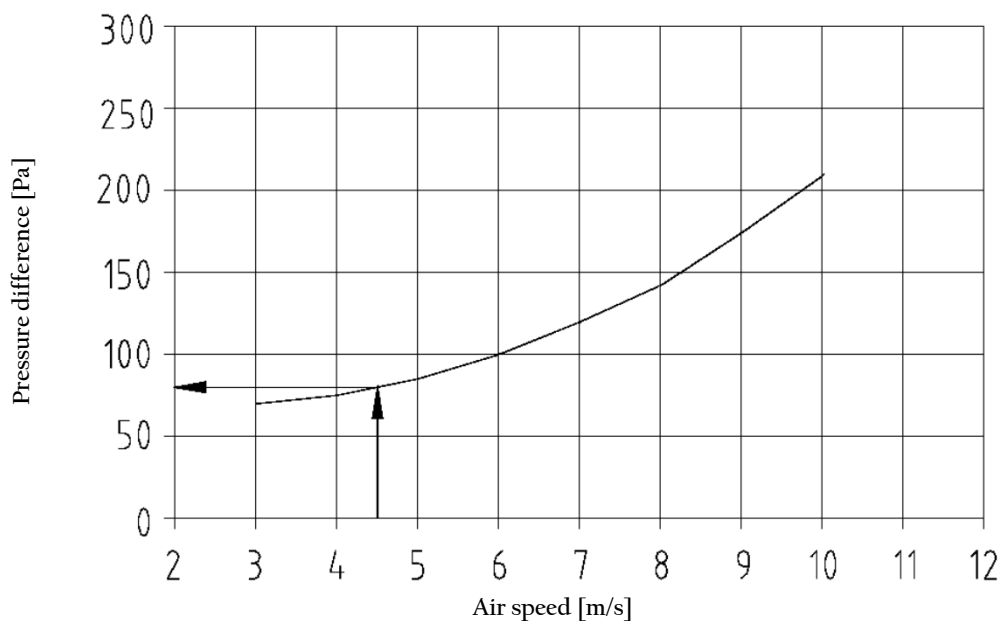
The ducts directly before and after of the air flow regulator should have the same dimensions (base and height) of the regulator itself. As a nominal or reference value, it is recommended an average air speed of about 6.5 m/s.

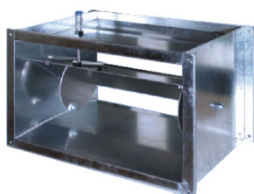
Insulation:

The air flow regulator can be supplied with a thermal and acoustic insulation of 30 mm. For insulations made by the customer, these must be extended to the regulation device or to the electric or pneumatic actuator. In this case it will be the client themselves to specify the thickness of the insulation.

Note on the installation:

IN conformity to DIN 1946T2, it is necessary to foresee the accessibility to the constant air flow regulator and to the duct systems to allow maintenance and calibration.

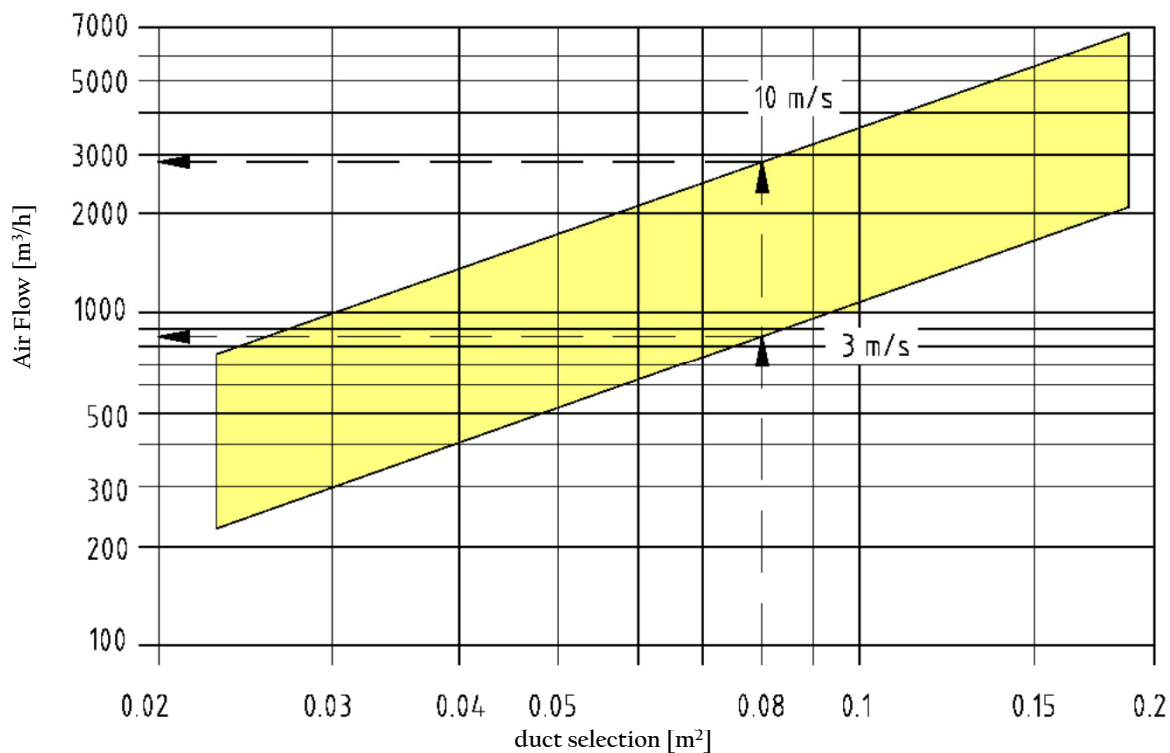




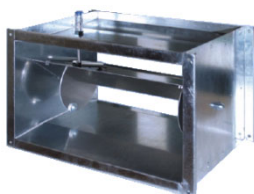
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PERFORMANCE



base (mm)	height (mm)	speed m/s	air flow m³/h	100 Pa								LwA dBa
				Lw dB								
				63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
150	150	3	243	49	48	47	45	43	41	39	36	49
		6	486	54	54	52	51	49	48	45	43	55
		9	729	57	56	56	54	53	51	49	47	58
300	150	3	486	52	50	49	47	45	43	40	37	50
		6	972	56	56	54	53	51	49	47	44	57
		9	1458	59	59	58	56	55	53	51	48	60
200	200	3	432	52	50	49	47	45	43	40	37	50
		6	864	56	56	54	53	51	49	47	44	57
		9	1296	59	59	58	56	55	53	51	48	60
300	200	3	648	53	52	50	48	46	44	41	38	51
		6	1296	58	57	56	54	52	50	48	45	58
		9	1944	61	60	59	57	56	54	52	49	61
400	200	3	864	54	52	51	49	47	44	41	38	52
		6	1728	59	58	56	55	53	51	48	45	58
		9	2592	61	61	60	58	56	54	52	49	62
300	300	3	972	54	53	51	49	47	45	42	39	53
		6	1944	60	58	57	56	54	51	49	46	59
		9	2916	62	62	60	59	57	55	53	50	63
450	300	3	1458	56	54	53	50	48	46	43	39	54
		6	2916	61	60	58	57	55	52	50	47	60
		9	4374	64	63	62	60	58	56	54	51	64
600	300	3	1944	56	55	53	51	49	46	43	40	54
		6	3888	62	60	59	57	55	53	50	47	61
		9	5832	65	64	62	61	59	57	54	51	64



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PERFORMANCE

base (mm)	height (mm)	speed m/s	air flow m ³ /h	250 Pa								LwA dBa
				Lw dB								
				63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
150	150	3	243	57	56	55	53	51	49	47	44	57
		6	486	62	61	60	59	57	55	53	51	63
		9	729	65	64	63	62	61	59	57	55	66
300	150	3	486	60	58	57	55	53	51	48	45	58
		6	972	64	64	62	61	59	57	55	52	65
		9	1458	67	66	66	64	63	61	59	56	68
200	200	3	432	60	58	57	55	53	51	48	45	58
		6	864	64	64	62	61	59	57	55	52	65
		9	1296	67	66	66	64	63	61	59	56	68
300	200	3	648	61	60	58	56	54	52	49	46	59
		6	1296	66	65	64	62	60	58	56	53	66
		9	1944	69	68	67	65	64	62	59	57	69
400	200	3	864	62	60	59	57	55	52	49	46	60
		6	1728	67	66	64	63	61	59	56	53	66
		9	2592	69	69	68	66	64	62	60	57	70
300	300	3	972	62	61	59	57	55	53	50	47	61
		6	1944	67	66	65	63	62	59	57	54	67
		9	2916	70	69	68	67	65	63	61	58	71
450	300	3	1458	64	62	60	58	56	53	51	47	62
		6	2916	69	68	66	65	63	60	58	55	68
		9	4374	72	71	70	68	66	64	62	59	72
600	300	3	1944	64	63	61	59	57	54	51	48	62
		6	3888	70	68	67	65	63	61	58	55	69
		9	5832	73	72	70	69	67	65	62	59	72

base (mm)	height (mm)	speed m/s	air flow m ³ /h	500 Pa								LwA dBa
				Lw dB								
				63 Hz	125 Hz	250 Hz	500 Hz	1000 Hz	2000 Hz	4000 Hz	8000 Hz	
150	150	3	243	63	62	61	59	57	55	53	50	63
		6	486	68	67	66	65	63	62	59	57	69
		9	729	71	70	69	68	67	65	63	61	72
300	150	3	486	66	64	63	61	59	57	54	51	64
		6	972	70	70	68	67	65	63	61	58	71
		9	1458	73	73	72	70	69	67	65	62	74
200	200	3	432	66	64	63	61	59	57	54	51	64
		6	864	70	70	68	67	65	63	61	58	71
		9	1296	73	73	72	70	69	67	65	62	74
300	200	3	648	67	66	64	62	60	58	55	52	65
		6	1296	72	71	70	68	66	64	62	59	72
		9	1944	75	74	73	71	70	68	65	63	75
400	200	3	864	68	66	65	63	61	58	55	52	66
		6	1728	73	72	70	69	67	65	62	59	72
		9	2592	75	75	74	72	70	68	66	63	76
300	300	3	972	68	67	64	63	61	59	56	53	67
		6	1944	74	72	71	69	68	65	63	60	73
		9	2916	76	75	74	73	71	69	67	64	77
450	300	3	1458	70	68	67	64	62	59	57	53	68
		6	2916	75	74	72	71	69	66	64	61	74
		9	4374	78	77	76	74	72	70	68	65	78
600	300	3	1944	70	69	67	65	63	60	57	54	68
		6	3888	76	74	73	71	69	67	64	61	75
		9	5832	79	78	76	75	73	71	68	65	78



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HOW TO ORDER

