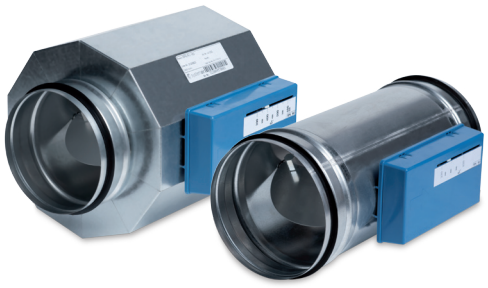
RPK-R & RPK-R-I

Constant air flow controller



Accessories for RPK-R:

- Attenuators Optima-ASA

Silencers are available to reduce the discharge sound power levels when required. Multi-outlet insulated terminal units are available when multi-zone application is required.

Ordering codes

		RPK -
Manufacture	standard insulated	R R-I
Size (DN; mm)		80 - 400

Ordering code example:

RPK-R-100

Round shaped constant air flow controller with 100 mm nominal diameter without insulation.

Description

RPK-R is a round constant air flow controller which is used for exact mechanical setting of required air volume in ventilation systems without need of any other energy.

RPK-R is available in two versions:

- RPK-R without outside insulation.
- RPK-R-I with outside 50 mm thick heat and sound insulation.

The RPK-R enables control of individually required volume flow of air in separate ventilation system zones. RPK-R operates in temperature from -20 to 80°C and relative humidity up to 80%. Recommended air flow velocity is 3 to 8 m/s at pressure difference up to Δp 500 Pa. Accuracy is ±5 %(±10% at the adjustment range limits).

RPK-R is characterized by:

- control accuracy
- easy mounting
- maintenance-free
- tight connection with the duct

Design

The RPK-R is manufactured from galvanized sheet metal, the blade is from aluminium. All steel parts are zinc plated, spring is made from high quality steel. Sliding bearing is suitable for high temperatures and doesn´t require any lubrication. The cover of adjusting mechanism is made from ABS plastic and the functional parts are from PA plastic. For the isolated version the outside insulation is made from 50 mm thick glass fiber material with outside steel casing. On demand it is possible to deliver the product with powder paint coating.

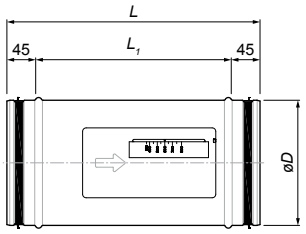


Fig. 1: RPK-R main dimensions

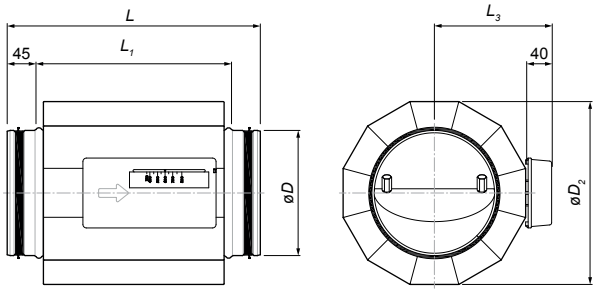


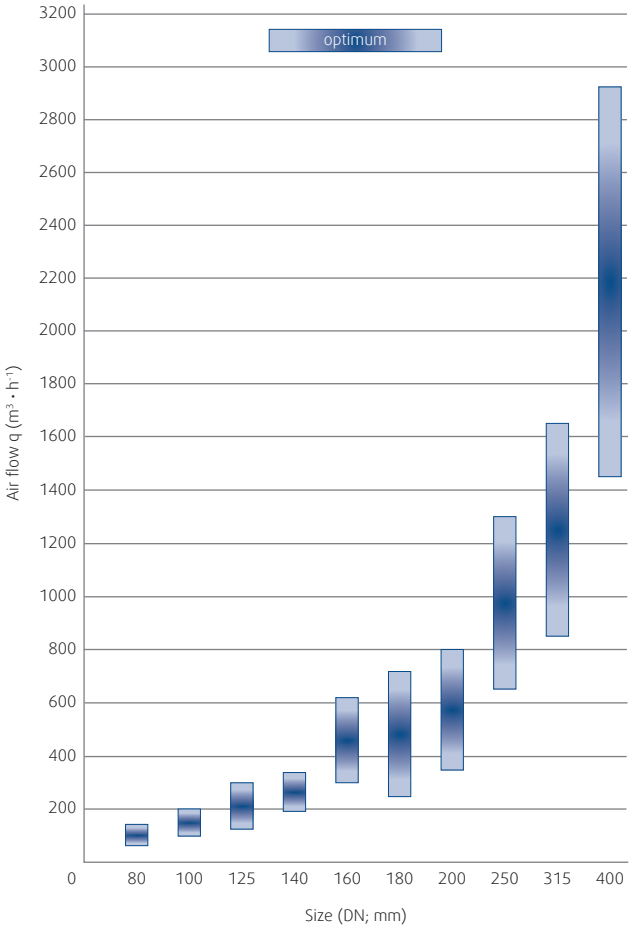
Fig. 2: RPK-R-I main dimensions

Dimensions

Size	v	q	øD	$øD_2$	L	L_1	L_2	L_3	m	m(i)
	(m • s^{-1})	(m^3 • h^{-1})	(mm)						(kg)	
80	4,3-8,4	75-140	78	170	350	260	76	123	0,8	1,7
100	3,7-7,5	100-200	97	190	350	260	86	136	1	2,1
125	3,2-7,1	125-300	122	215	360	270	100	148	1,2	2,4
140	3,6-6,4	190-340	137	230	370	280	107	156	1,4	2,8
160	4,3-8,9	300-620	157	250	380	290	117	166	1,6	3,2
180	2,8-8,1	250-720	177	270	390	300	128	176	1,9	3,6
200	3,2-7,3	350-800	197	290	400	310	138	186	2,1	4
250	3,8-7,5	650-1300	247	340	425	335	164	208	3,3	5,8
315	3,1-6,0	850-1650	312	405	500	410	196	243	5	8,3
400	3,2-6,4	1450-2900	397	490	500	410	239	286	6,3	10,3

Tab. 1: Dimensions, weights, air flow control parameters and adjustments

Quick selection



Quick selection 1: Optimal accuracy in the middle of the control range (dark blue colour fill).

Technical parameters

Size	q ($m^3 \cdot h^{-1}$)	q ($l \cdot s^{-1}$)	Accuracy (%)	P_{min} (Pa)
80	75	20,8	15	100
	100	27,8	15	100
	120	33,3	10	100
	140	38,9	10	100
100	100	27,8	15	100
	150	41,7	10	70
	175	48,6	10	50
	200	55,6	10	50
125	125	34,7	12	100
	200	55,6	8	50
	250	69,4	6	50
	300	83,3	10	50
140	190	52,8	10	100
	250	69,4	7	50
	300	83,3	6	50
	340	94,4	7	60
160	300	83,3	10	70
	400	111,1	6	50
	500	138,9	7	50
	620	172,2	10	50
180	250	69,4	10	70
	400	111,1	6	50
	600	166,7	7	50
	720	200,0	10	70
200	350	97,2	10	50
	500	138,9	5	50
	700	194,4	5	50
	800	222,2	10	70
250	650	180,6	10	50
	900	250,0	5	50
	1100	305,6	5	50
	1300	361,1	10	60
315	850	236,1	10	50
	1200	333,3	5	50
	1500	416,7	5	50
	1650	458,3	10	70
400	1450	402,8	12	100
	2000	555,6	6	50
	2450	680,6	6	50
	2900	805,6	10	100

Tab. 2: Accuracy on different parts of the control adjustment range with minimal required static air pressure.

Mounting

The controller can be mounted to horizontal, diagonal or vertical duct. The blade spindle must be always horizontal. It is necessary to pay attention to correct direction of mounting, so that the air is entering the controller according to the direction of the arrow, located on controller casing. Connecting the controller to the duct is done according to its size with grub screws ø 3,2 × 13 to ø 3,9 × 16, or with rivets of the same diameters and the connection is sealed with sealing tape. After mounting, set the required air volume by turning the working screw on the controller box.

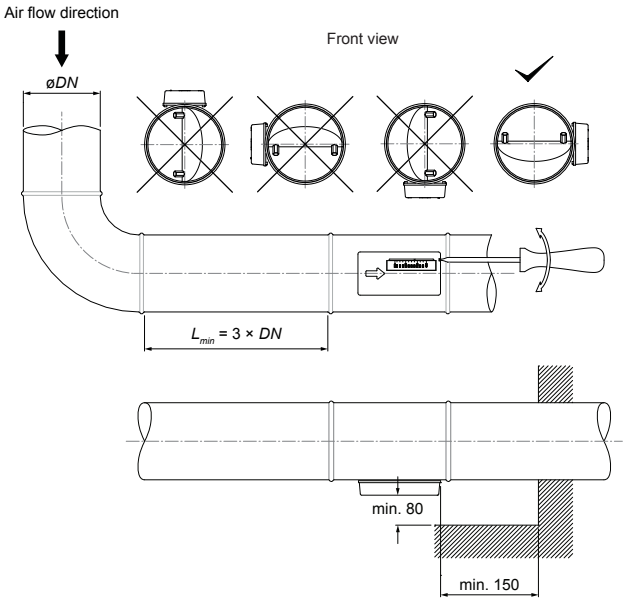


Fig. 3: Way of mounting RPK-R and RPK-R-I

RPK-S and RPK-S-I

Constant air flow controller

Ordering codes

		RPK -
Manufacture	standard insulated	S S-I
Size (DN; mm)		W × H

Ordering code example:

RPK-S-600×400

Constant air flow controller, non-isolated, 600 mm wide, 400 mm high.

Description

RPK-S is a square constant air flow controller which is used for exact mechanical setting of required air volume in ventilation systems without need of any other energy.

RPK-S is available in two versions:

- RPK-S without outside insulation.
- RPK-S-I with outside 50 mm thick heat and sound insulation.

RPK-S is characterized by:

- regulation accuracy
- easy mounting
- maintenance-free

The RPK-S enables regulation of individually required amounts of air in separate ventilation system zones. RPK-S works in temperature from -20 to 80°C and relative humidity up to 80%. Recommended air flow velocity is from 3 to 8 meters per second at pressure difference to Δp 500 Pa. Accuracy is ±5 %(±10% for outer settings).

Accessories for RPK-S:

- Attenuators Optima-ASB

Silencers are available to reduce the discharge sound power levels when required.

Design

The RPK-S is manufactured from galvanized sheet metal, the blade is from aluminium. All steel parts are zinc plated, spring is made from high quality steel. Sliding bearing is suitable for high temperatures and doesn´t require any lubrication. The cover of adjusting mechanism is made from ABS plastic and the functional parts are from PA plastic. For the isolated version the outside insulation is made from 50 mm thick glass fiber material with outside steel casing. On demand it is possible to deliver the product with powder paint coating.

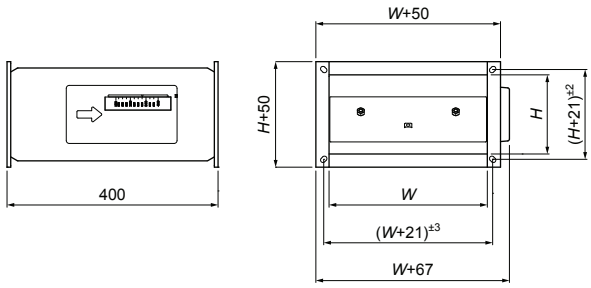


Fig. 4: Main dimension of RPK-S

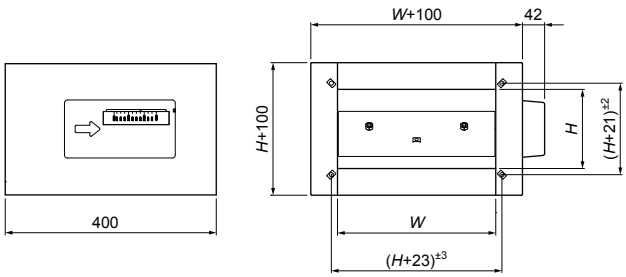


Fig. 5: Main dimension of RPK-S-I

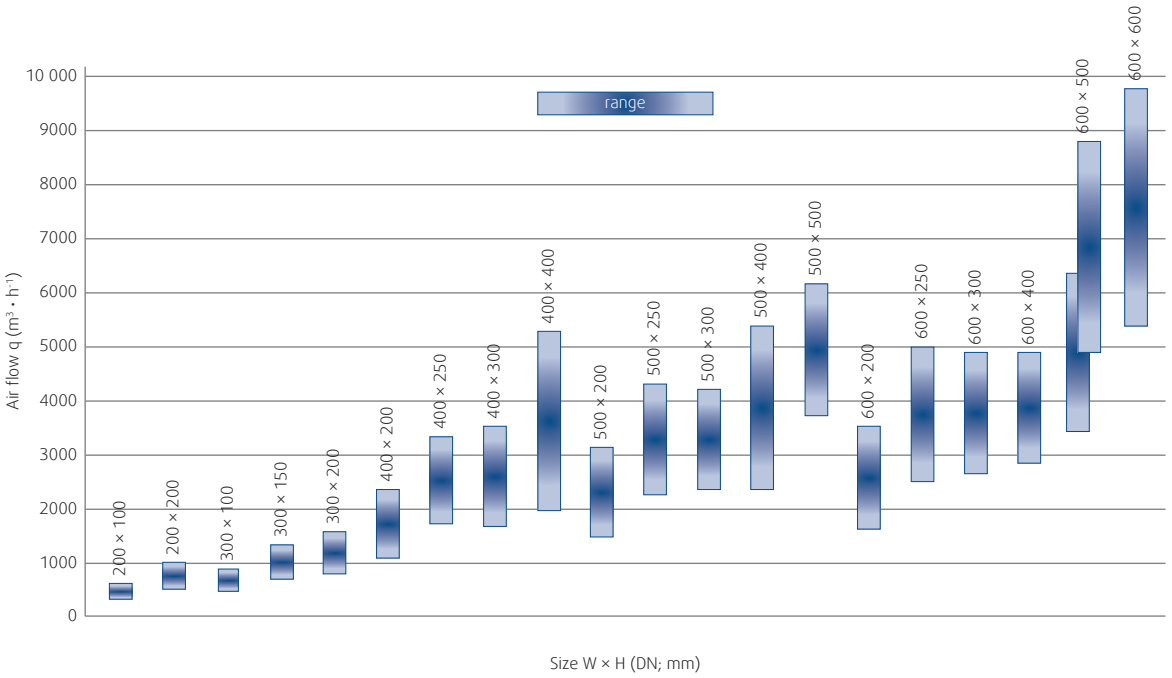
Dimensions

Size	q	W	H	m	m(i)
	(m³ • h⁻¹)	(mm)		(kg)	
200 × 100	320 – 620	200	100	2,9	5,3
200 × 200	510 – 1020		200	3,7	6,6
300 × 100	470 - 850	300	100	3,7	6,6
300 × 150	700 – 1350		150	4,1	7,2
300 × 200	800 - 1600		200	4,6	8,0
400 × 200	1100 – 2400	400	200	5,4	9,3
400 × 250	1750 - 3400		250	6,1	10,1
400 × 300	1700 – 3600		300	6,5	10,8
400 × 400	2000 – 5400		400	9,0	13,7

Size	q	W	H	m	m(i)
	(m³ • h⁻¹)	(mm)		(kg)	
500 × 200	1500 - 3200	500	200	6,2	10,5
500 × 250	2300 - 4400		250	6,7	11,0
500 × 300	2400 – 4300		300	7,0	11,7
500 × 400	2400 – 5500		400	10,1	15,1
500 × 500	3800 - 6300		500	13,0	18,6
600 × 200	1650 - 3600	600	200	7,0	12,3
600 × 250	2550 - 5100		250	7,4	12,8
600 × 300	2700 – 5000		300	10,2	15,3
600 × 400	2900 – 5000		400	11,4	17,0
600 × 500	3500 – 6500		500	14,6	20,7
600 × 500	5000 - 9000		500	14,6	20,7
600 × 600	5500 – 10000		600	15,8	22,6

Tab. 3: Dimensions, weights, air flow control parameters and adjustments

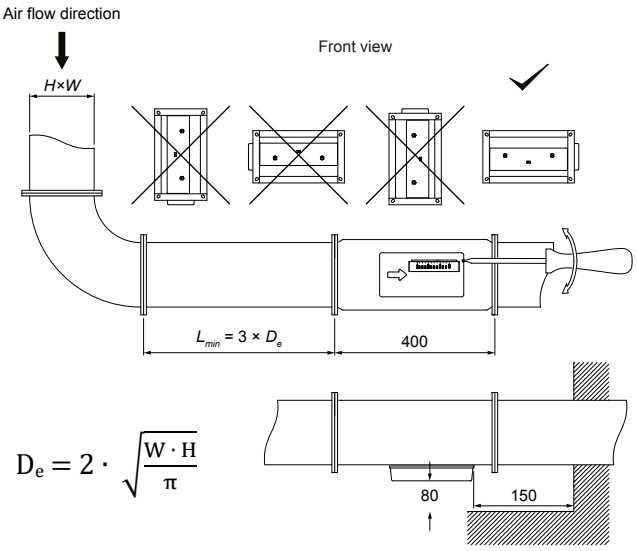
Quick selection



Quick selection 2: Optimal accuracy in the middle of the control range (dark blue colour fill).

Mounting

Controller can be mounted to horizontal, diagonal or vertical duct. The blade spindle must be always horizontal. It is necessary to pay attention to correct direction of mounting, so that the air is entering the controller according to the direction of the arrow direction, which is located on controller casing. Connecting the duct and the controller is with flanges. After mounting, set the required air volume by turning the adjustment screw on the controller box.



$$D_e = 2 \cdot \sqrt{\frac{W \cdot H}{\pi}}$$

Fig. 6: Way of mounting RPK-S and RPK-S-I