

RCP-P

RECTANGULAR CONSTANT FLOW REGULATOR CAV

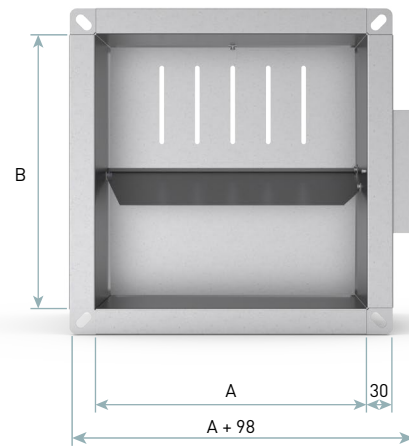


Characteristics:

Rectangular constant air flow regulator CAV, with a mechanical regulator without external power supply.

| Key parameters | |
|-----------------------------|--|
| Function | CAV |
| Operating range | 2-10 m/s |
| Material | Galvanised or stainless steel 1.4301 |
| Operating pressure range | 50–500 Pa (up to 5 m/s), 100–500 Pa (above 5 m/s) |
| Air tightness class | CX |
| Regulation accuracy | 10% [20% up to 3 m/s] |
| Operating temperature range | 0-50°C |

Dimensions



Intended use

The RCP-P CAV regulators are used for automatic constant air flow control in ventilation systems without external power supply. They maintain constant air volumes regardless of the changes of static pressure in the ventilation duct. A special version of the regulator made of AISI304 stainless steel can be ordered. The regulator can be used in both intake and exhaust ventilation ducts.

Design

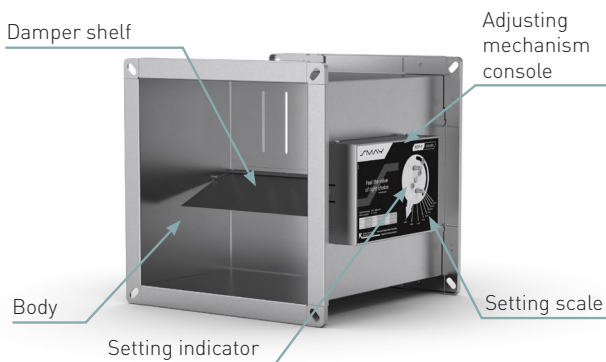


Figure 2. Dimensions of the RCP-P regulator.

Figure 1. RCP-P design.



Table 1. Specific data of the RCP-P regulator.

| RCP-P operating range [m³/h] | Width A [mm] | | | | | | |
|------------------------------------|--------------|----------|----------|----------|----------|-----------|-----------|
| | 150 | 200 | 300 | 400 | 500 | 600 | |
| Height B [mm] | 100 | 108-540 | 144-720 | | | | |
| | 150 | 162-810 | 216-1080 | | | | |
| | 200 | 216-1080 | 288-1440 | 432-2160 | 576-2880 | 720-3600 | 865-4320 |
| | 250 | | | 540-2700 | 720-3600 | 900-4500 | 1080-5400 |
| | 300 | | | 648-3240 | 864-4320 | 1080-5400 | 1296-6480 |

Table 2. Minimum operating pressure and regulation accuracy.

| RCP-P operating range | | |
|-----------------------|-----------------------|-----------------|
| Flow rate | Δp_{min} [Pa] | ΔV [±%] |
| v [m/s] | | |
| 2 | 50 | 20 |
| 3 | 50 | 10 |
| 4 | 50 | 10 |
| 5 | 50 | 10 |
| 6 | 100 | 10 |
| 7 | 100 | 10 |
| 8 | 100 | 10 |
| 9 | 100 | 10 |
| 10 | 100 | 10 |

Installation Recommendations

The RCP-P regulators should be installed in accordance with the air flow direction which is marked with an arrow on the device's housing.

To ensure the proper operation of the device, please observe the following rules during the installation:

- straight section length before the regulator $2D_n$,
- straight section length after the regulator $1D_n$,

where D_n means the large side of the regulator.

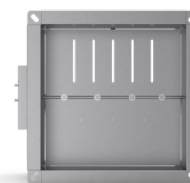


Figure 3. Recommended way of the RCP-P installation.

The regulator can operate in any position, both in the air supply and air extraction systems. However, it is recommended to install the regulator with the setting console front surface directed to the side, which makes it possible to minimize the adjustment error.

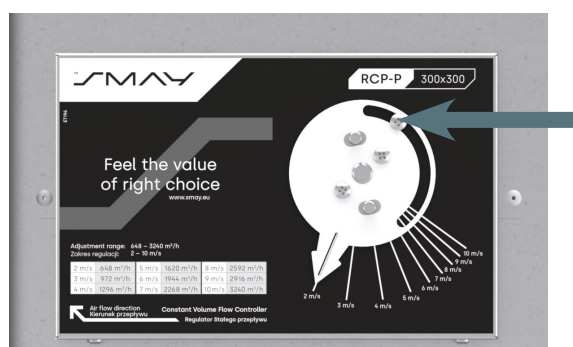
| RCP-P | | | dP= 100 Pa | | | | | | | | | | dP= 300 Pa | | | | | | | | | | dP= 500 Pa | | | | | | | | | | | | | | | |
|-----------|-----------|-----------|---|--------|--------|--------|-------|-------|-------|-------|-------|--------|-------------------------------|---|---|--------|-------|-------|-------|-------|-------|--------|------------|--------|-------------------------------|---|---|-------|-------|-------|----|----|----|--|--|--|-------------------------------|---|
| | | | Noise emitted by the flow into the duct | | | | | | | | | | Through the housing | | Noise emitted by the flow into the duct | | | | | | | | | | Through the housing | | Noise emitted by the flow into the duct | | | | | | | | | | Through the housing | |
| Ax:B [mm] | Flow | rate | In frequency bands, L _w [dB] | | | | | | | | | | Total L _{pA} [dB(A)] | Through the housing L _{pA} [dB(A)] | In frequency bands, L _w [dB] | | | | | | | | | | Total L _{pA} [dB(A)] | Through the housing L _{pA} [dB(A)] | In frequency bands, L _w [dB] | | | | | | | | | | Total L _{pA} [dB(A)] | Through the housing L _{pA} [dB(A)] |
| | | | 63 Hz | 125 Hz | 250 Hz | 500 Hz | 1 kHz | 2 kHz | 4 kHz | 8 kHz | 63 Hz | 125 Hz | | | 250 Hz | 500 Hz | 1 kHz | 2 kHz | 4 kHz | 8 kHz | 63 Hz | 125 Hz | 250 Hz | 500 Hz | | | 1 kHz | 2 kHz | 4 kHz | 8 kHz | | | | | | | | |
| 600 x 200 | 2 | 864 240 | 46 | 42 | 43 | 45 | 48 | 48 | 41 | 32 | 45 | 32 | 52 | 51 | 50 | 51 | 57 | 60 | 56 | 49 | 56 | 42 | 55 | 55 | 53 | 54 | 61 | 65 | 63 | 56 | 61 | 48 | | | | | | |
| | 3 | 1296 360 | 49 | 46 | 46 | 46 | 49 | 51 | 45 | 36 | 47 | 34 | 57 | 55 | 53 | 52 | 58 | 61 | 58 | 51 | 57 | 44 | 60 | 60 | 56 | 56 | 61 | 66 | 64 | 58 | 62 | 48 | | | | | | |
| | 4 | 1728 480 | 52 | 49 | 47 | 47 | 50 | 53 | 48 | 39 | 49 | 36 | 60 | 59 | 55 | 54 | 58 | 62 | 59 | 52 | 58 | 45 | 64 | 64 | 59 | 57 | 62 | 66 | 65 | 58 | 63 | 50 | | | | | | |
| | 5 | 2160 600 | 54 | 51 | 49 | 48 | 51 | 54 | 50 | 41 | 50 | 38 | 63 | 62 | 57 | 54 | 59 | 63 | 60 | 53 | 59 | 46 | 67 | 66 | 60 | 58 | 62 | 67 | 66 | 59 | 63 | 51 | | | | | | |
| | 6 | 2592 720 | 55 | 53 | 50 | 48 | 52 | 55 | 51 | 43 | 51 | 39 | 65 | 64 | 58 | 55 | 59 | 63 | 61 | 54 | 60 | 47 | 69 | 69 | 62 | 58 | 62 | 67 | 66 | 60 | 64 | 52 | | | | | | |
| | 7 | 3024 840 | 57 | 55 | 51 | 49 | 52 | 56 | 53 | 44 | 52 | 40 | 66 | 66 | 59 | 56 | 59 | 64 | 62 | 55 | 60 | 48 | 71 | 71 | 63 | 59 | 63 | 67 | 67 | 60 | 64 | 53 | | | | | | |
| | 8 | 3456 960 | 58 | 56 | 52 | 49 | 53 | 57 | 54 | 46 | 53 | 41 | 68 | 67 | 60 | 56 | 60 | 64 | 63 | 56 | 61 | 49 | 72 | 73 | 64 | 59 | 63 | 67 | 67 | 60 | 64 | 53 | | | | | | |
| | 9 | 3888 1080 | 59 | 57 | 52 | 49 | 53 | 58 | 55 | 47 | 54 | 42 | 69 | 69 | 61 | 57 | 60 | 64 | 63 | 56 | 61 | 50 | 74 | 74 | 65 | 60 | 63 | 67 | 67 | 61 | 65 | 54 | | | | | | |
| | 10 | 4320 1200 | 60 | 58 | 53 | 50 | 53 | 58 | 56 | 48 | 54 | 43 | 70 | 70 | 62 | 57 | 60 | 65 | 64 | 57 | 61 | 51 | 75 | 75 | 66 | 60 | 63 | 68 | 68 | 61 | 65 | 55 | | | | | | |
| | 600 x 250 | 2 | 1080 300 | 46 | 43 | 44 | 45 | 49 | 50 | 42 | 33 | 46 | 33 | 53 | 52 | 51 | 52 | 58 | 61 | 57 | 50 | 57 | 44 | 57 | 57 | 54 | 55 | 62 | 66 | 63 | 57 | 62 | 50 | | | | | |
| 3 | | 1620 450 | 51 | 47 | 47 | 47 | 50 | 52 | 46 | 37 | 48 | 35 | 59 | 57 | 54 | 54 | 59 | 62 | 59 | 52 | 58 | 45 | 62 | 62 | 58 | 57 | 62 | 66 | 64 | 58 | 63 | 50 | | | | | | |
| 4 | | 2160 600 | 53 | 50 | 48 | 48 | 51 | 54 | 49 | 40 | 50 | 37 | 62 | 61 | 56 | 55 | 59 | 63 | 60 | 53 | 59 | 47 | 66 | 66 | 60 | 58 | 63 | 67 | 65 | 59 | 63 | 52 | | | | | | |
| 5 | | 2700 750 | 56 | 53 | 50 | 49 | 52 | 55 | 51 | 43 | 51 | 39 | 65 | 64 | 58 | 56 | 60 | 63 | 61 | 54 | 60 | 48 | 69 | 69 | 62 | 59 | 63 | 67 | 66 | 60 | 64 | 53 | | | | | | |
| 6 | | 3240 900 | 58 | 55 | 51 | 50 | 53 | 56 | 53 | 45 | 52 | 40 | 67 | 66 | 59 | 56 | 60 | 64 | 62 | 55 | 60 | 49 | 72 | 71 | 63 | 59 | 63 | 67 | 66 | 60 | 64 | 54 | | | | | | |
| 7 | | 3780 1050 | 59 | 57 | 52 | 50 | 53 | 57 | 54 | 46 | 53 | 42 | 69 | 68 | 61 | 57 | 60 | 64 | 63 | 56 | 61 | 50 | 74 | 73 | 64 | 60 | 63 | 67 | 67 | 60 | 64 | 55 | | | | | | |
| 8 | | 4320 1200 | 61 | 58 | 53 | 51 | 54 | 58 | 55 | 48 | 54 | 43 | 71 | 70 | 62 | 57 | 61 | 65 | 64 | 57 | 61 | 51 | 76 | 75 | 66 | 61 | 64 | 68 | 67 | 61 | 65 | 55 | | | | | | |
| 9 | | 4860 1350 | 62 | 60 | 54 | 51 | 54 | 59 | 57 | 49 | 55 | 44 | 73 | 71 | 62 | 58 | 61 | 65 | 64 | 57 | 62 | 52 | 78 | 77 | 66 | 61 | 64 | 68 | 68 | 61 | 65 | 56 | | | | | | |
| 10 | | 5400 1500 | 63 | 61 | 55 | 51 | 55 | 60 | 58 | 50 | 56 | 45 | 74 | 73 | 63 | 58 | 61 | 65 | 65 | 58 | 62 | 52 | 79 | 78 | 67 | 61 | 64 | 68 | 68 | 61 | 65 | 57 | | | | | | |
| 600 x 300 | | 2 | 1296 360 | 47 | 43 | 44 | 46 | 50 | 51 | 43 | 34 | 47 | 34 | 54 | 54 | 52 | 53 | 59 | 62 | 57 | 50 | 57 | 45 | 58 | 58 | 56 | 56 | 63 | 67 | 64 | 58 | 63 | 51 | | | | | |
| | 3 | 1944 540 | 52 | 48 | 47 | 48 | 51 | 53 | 47 | 38 | 49 | 36 | 60 | 59 | 55 | 55 | 59 | 63 | 59 | 52 | 59 | 46 | 64 | 64 | 59 | 58 | 63 | 67 | 65 | 59 | 63 | 52 | | | | | | |
| | 4 | 2592 720 | 55 | 52 | 49 | 49 | 52 | 55 | 50 | 41 | 51 | 39 | 64 | 63 | 57 | 56 | 60 | 63 | 61 | 54 | 60 | 48 | 68 | 68 | 61 | 59 | 64 | 67 | 66 | 59 | 64 | 53 | | | | | | |
| | 5 | 3240 900 | 57 | 55 | 51 | 50 | 53 | 56 | 52 | 44 | 52 | 40 | 67 | 66 | 59 | 57 | 60 | 64 | 62 | 55 | 60 | 49 | 72 | 71 | 63 | 60 | 64 | 67 | 66 | 60 | 64 | 54 | | | | | | |
| | 6 | 3888 1080 | 59 | 57 | 52 | 51 | 54 | 58 | 54 | 46 | 53 | 42 | 70 | 68 | 61 | 57 | 61 | 64 | 63 | 56 | 61 | 50 | 75 | 73 | 64 | 60 | 64 | 68 | 67 | 60 | 65 | 55 | | | | | | |
| | 7 | 4536 1260 | 61 | 59 | 53 | 51 | 55 | 58 | 55 | 48 | 55 | 43 | 72 | 70 | 62 | 58 | 61 | 65 | 63 | 56 | 62 | 52 | 77 | 75 | 66 | 61 | 64 | 68 | 67 | 61 | 65 | 56 | | | | | | |
| | 8 | 5184 1440 | 63 | 60 | 54 | 52 | 55 | 59 | 57 | 49 | 55 | 44 | 74 | 72 | 63 | 58 | 61 | 65 | 64 | 57 | 62 | 52 | 79 | 77 | 67 | 61 | 64 | 68 | 68 | 61 | 65 | 57 | | | | | | |
| | 9 | 5832 1620 | 64 | 62 | 55 | 52 | 56 | 60 | 58 | 50 | 56 | 45 | 76 | 73 | 64 | 59 | 62 | 65 | 65 | 58 | 63 | 53 | 81 | 79 | 68 | 62 | 64 | 68 | 68 | 61 | 66 | 58 | | | | | | |
| | 10 | 6480 1800 | 65 | 63 | 56 | 53 | 56 | 61 | 59 | 52 | 57 | 47 | 77 | 75 | 65 | 59 | 62 | 66 | 65 | 58 | 63 | 54 | 83 | 80 | 68 | 62 | 64 | 68 | 68 | 61 | 66 | 59 | | | | | | |

The sound pressure level accounts for the room and ceiling attenuation for a reference room, which was assumed to be 8 dB. Actual parameters may vary, depending on the conditions.

For the sound performance data for other pressures and flow rates, including the sound power level in individual frequency bands, please contact the SMAY engineering department.

Regulator settings change

The user can change the set point settings. To change the regulator settings, loosen the locking screw, change the set point and tighten the screw again:



RCP-P – Rectangular Constant Flow Regulator CAV

When ordering, please provide information, according to the following pattern:

RCP-P <A> x - <V1> - <P>

Where:

| | |
|-----------|----------------------------------|
| A | Clear width (mm) |
| B | Clear height (mm) |
| V1 | Air flow value (factory setting) |
| P | Material* |

none - galvanised steel

SN - stainless steel

* Default value – if there is no information for the given parameter, default values are applied.

Order example:

RCP-P-300x200-570

(RCP-P regulator with dimensions of 300×200 mm, with the air flow set point of 570 m³/h set at the factory).