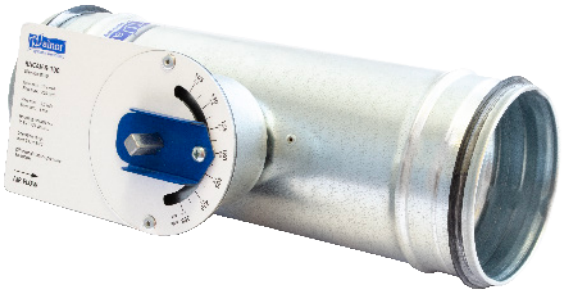
CAV Constant air flow regulator

RACAV-R



Description

The RACAV constant air flow regulator keeps the air output steady in ventilation systems. The device works without any electric power supply. It operates between 50 and 1,000 Pa. Beyond this range, the accuracy of sustained air flow control can be reduced. The regulator can be used in comfort or industrial air supply and air exhaust systems. The RACAV-R regulators meet the EN 1751:2014-03 airtightness rating C.

The RACAV-R regulator can be equipped with a Belimo CM-230-F-L actuator.

Available materials:

RACAV-R-...	- galvanised steel (standard version)
RACAV-R-K-...	- 1.4301/304 stainless steel
RACAV-R-K-...-316L	- 1.4404/316L stainless steel
RACAV-R-I-...	- galvanized steel with 50 mm thick insulation in cladding
RACAV-R-I-K-...	- 1.4301/304 stainless steel with 50 mm thick insulation in cladding
RACAV-R-I-K-...- 316L	- 1.4404/316L stainless steel with 50 mm thick insulation in cladding

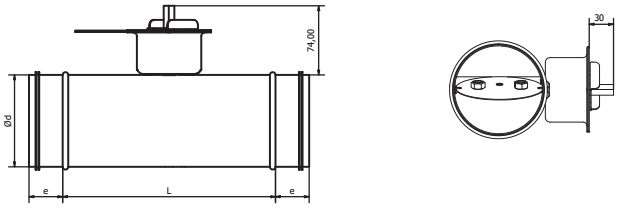
Product code example

Product code: **RACAV-R - I - aaa**

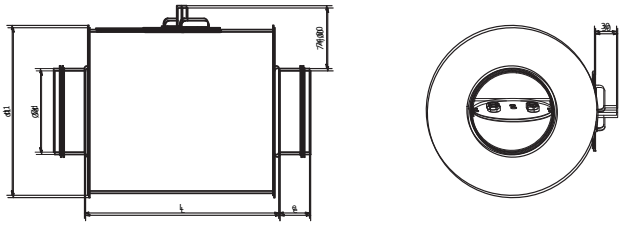
type
insulation
diameter

Dimensions

RACAV-R



RACAV-R-I



Dimensions of RACAV-R regulators

Product code	*Ød [mm]*	*L [mm]*	*e [mm]*
RACAV-R-100	99	228	36
RACAV-R-125	124	228	36
RACAV-R-160	159	228	36

Dimensions of RACAV-R-I insulated regulators

Product code	*Ød [mm]*	*$Ød_1$ [mm]*	*L [mm]*	*e [mm]*
RACAV-R-I-100	99	200	228	36
RACAV-R-I-125	124	224	228	36
RACAV-R-I-160	159	250	228	36

CAV Constant air flow regulator

RACAV-R

Design and principle of operation

The housing and most components of the regulator control gear are made from galvanized steel sheet. The housing can be fabricated from 1.4301/304 or 1.4404/316L stainless steel sheet on request. The standard gaskets are made from EPDM which resists temperatures up to 100˚C. The bearings are made from plastic. An additional component of the entire gear is a damping adjustment bellows made of plastic. The controller can also be fabricated in a 50mm thick mineral wool insulated version with a metal sheet cladding. On special request, a version with FLS flanged connections is available. The operating principle of a CAV regulator is to equalize the damper closing torque caused by the air flow with the damper opening torque generated by the control gear. For example, when the CAV regulator senses an increase in pressure differential (caused e.g. by closing a ventilation damper, an increased air output from an AHU, etc.), the CAV regulator damper begins to close automatically to keep the air output constant.

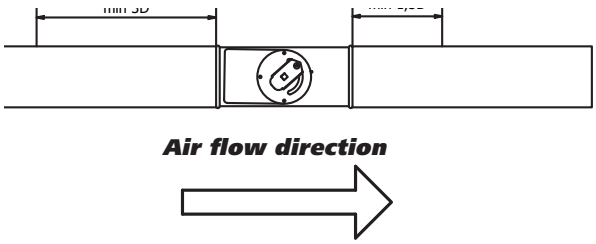
Regulator operating accuracy

	Flow rate [m³/h]	*Air flow [m/s]*	*Minimum pressure differential [Pa]*	*Regulator operating accuracy [%]*
RACAV-R-100	105	3,7	110	30
	130	4,6	50	20
	155	5,5	50	12
	180	6,4	50	11
	205	7,3	50	9
	230	8,1	50	10
	255	9,0	50	12

Table 1 – Air flow vs. regulator operating accuracy

Recommended installation method

CAV regulators work with the declared control accuracy if its installation position is at least at the minimum recommended distance from units generating air flow turbulence, e.g. ventilation dampers, bends, T-pieces, reducers, silencers, etc.



Operation conditions

CAV regulators work properly in a temperature range from +5°C to +80˚C. CAV regulators are not intended for use with aggressive airborne chemicals and airborne particulates.

Minimum pressure differential

For proper performance of RACAV-R air flow regulators, the minimum static pressure differential between both sides of the device must be maintained (see Table 1). The actual pressure differential depends on the designed air flow rate in the duct in which the CAV regulator is installed.
The accuracy of the scale on the air flow regulator control gear housing is ± 5%.