

RECTANGULAR CAV



SPECIFICATIONS

Application

- Rectangular EXCONTROL CONSTANTFLOW CAV controllers of Type EN for supply air / extract air volume flow control in constant air volume systems
- Mechanical self-powered volume flow control without external power supply
- Simplified project handling with orders based on nominal size

Special characteristics

- Volume flow rate set point can be set from outside by rotary Cam plate
- High control accuracy of the set volume flow
- Any installation orientation
- Correct operation even under un-favourable up stream conditions
- Visual display of damper blade position for operating point optimisation

Nominal sizes

- 19 nominal sizes from 200 × 100 – 600 × 600 mm

Construction

- Galvanised sheet steel
- Powder-coated.

Parts and characteristics

- Ready-to-commission controller
- Damper blade with low-friction bearings
- Bellows that acts as an oscillation damper
- Cam plate with leaf spring

- Rotary knob with pointer and scale for setting the volume flow setpoint value
- Aerodynamic functional testing of each unit on a special test rig prior to shipping
- Visual display of damper blade position for operating point optimisation

Galvanised sheet steel construction

- Casing and damper blade made of galvanised sheet steel
- Leaf spring made of stainless steel
- Polyurethane bellows
- Cam plate and adjusting unit made of galvanised sheet steel

Standards and guidelines

- Casing air leakage tested to EN 1751, class C

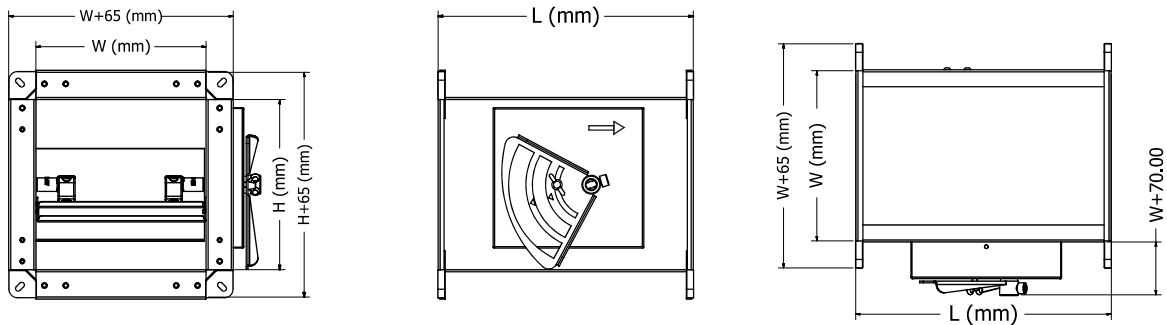
Maintenance

- Maintenance-free as construction and materials are not subject to wear

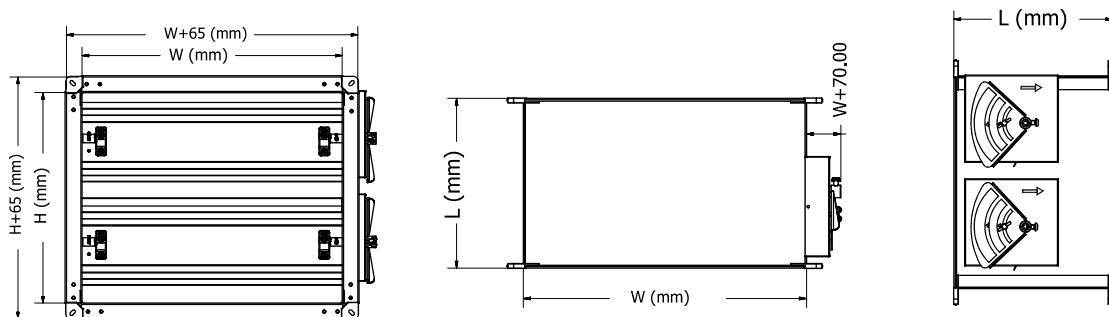
Technical data

Nominal sizes	200 × 100 – 600 × 600 mm
Volume flow rate range	39 – 3500 l/s or 140 – 12600 m ³ /h
Volume flow rate control range	Approx. 25 to 100 % of the nominal volume flow rate
Scale accuracy	± 4 %
Minimum differential pressure	50 Pa
Maximum differential pressure	1000 Pa
Operating temperature	10 to 50 °C

CAV H < 300 - Single Section



H > 300 - Multiple Section



Size W x H (mm)	L (mm)	H (mm)	Ø (mm) Circular cross section equivalent	Size W x H (mm)	L (mm)	H (mm)	Ø (mm) Circular cross section equivalent
200 x 100	300	100	133	600 x 250	300	250	353
300 x 100	300	100	150	500 x 300	300	300	375
200 x 150	300	150	172	600 x 300	300	300	400
300 x 150	300	150	200	400 x 400	300	400	400
200 x 200	300	200	200	500 x 400	300	400	444
300 x 200	300	200	240	600 x 400	300	400	480
500 x 200	300	200	286	500 x 500	300	500	500
400 x 250	300	250	308	600 x 500	300	500	546
500 x 250	300	250	333	600 x 600	300	600	600


CAV Operating Range

SPECIFICATION

Vk min @ 2.0 m/s - Vk max @ 12 m/s
P@ 50 - 1000 Pa. Temp. @ 10-80° C

Air Flow Recommendation

Size W x H (mm)	Q Flow [m3/h]		Δp min [Pa]	Size W x H (mm)	Q Flow [m3/h]		Δp min [Pa]
200x100	Min	200	70<P<1000	600x250	Min	1300	91<P<1000
	Max	525	158<P<1000		Max	4000	186<P<1000
300x100	Min	300	90<P<1000	500x300	Min	1350	91<P<1000
	Max	1000	200<P<1000		Max	4000	175<P<1000
200x150	Min	300	84<P<1000	600x300	Min	1620	145<P<1000
	Max	1050	199<P<1000		Max	4800	130<P<1000
300x150	Min	425	80<P<1000	400x400	Min	1440	104<P<1000
	Max	1350	186<P<1000		Max	5800	130<P<1000
200x200	Min	375	75<P<1000	500x400	Min	2100	112<P<1000
	Max	1100	175<P<1000		Max	6575	130<P<1000
300x200	Min	580	37<P<1000	600x400	Min	2100	85<P<1000
	Max	1600	130<P<1000		Max	6400	130<P<1000
500x200	Min	900	79<P<1000	500x500	Min	2050	87<P<1000
	Max	2700	158<P<1000		Max	6500	130<P<1000
400x250	Min	900	86<P<1000	600x500	Min	2700	76<P<1000
	Max	2800	200<P<1000		Max	8400	130<P<1000
500x250	Min	725	77<P<1000	600x600	Min	2775	82<P<1000
	Max	3400	199<P<1000		Max	9050	130<P<1000

 On request other sizes available

Sound Power Level

Size W x H (mm)	Q Flow [m3/h]		Lw [dB]				Size W x H (mm)	Q Flow [m3/h]		Lw [dB]			
			150 Pa	300 Pa	450 Pa	600 Pa				150 Pa	300 Pa	450 Pa	600 Pa
200x100	Min	200	50	57	61	64	600x250	Min	1300	54	61	65	68
	Max	525	55	61	65	68		Max	4000	58	64	68	71
300x100	Min	300	49	57	60	64	500x300	Min	1350	54	61	65	68
	Max	1000	57	63	66	69		Max	4000	58	64	68	71
200x150	Min	300	50	57	61	64	600x300	Min	1620	55	62	66	69
	Max	1050	58	64	67	70		Max	4800	59	65	69	72
300x150	Min	425	50	57	61	64	400x400	Min	1440	54	61	65	68
	Max	1350	56	63	66	69		Max	5800	62	68	71	74
200x200	Min	375	49	57	61	64	500x400	Min	2100	55	65	66	69
	Max	1100	55	62	65	68		Max	6575	62	68	72	74
300x200	Min	580	50	57	61	64	600x400	Min	2100	58	65	69	72
	Max	1600	55	61	65	67		Max	6400	61	68	71	74
500x200	Min	900	52	59	63	66	500x500	Min	2050	57	65	68	71
	Max	2700	56	62	66	69		Max	6500	61	68	71	74
400x250	Min	900	52	59	63	66	600x500	Min	2700	59	66	70	73
	Max	2800	57	64	67	70		Max	8400	64	70	74	77
500x250	Min	725	53	60	64	67	600x600	Min	2775	60	67	71	74
	Max	3400	58	64	68	70		Max	9050	64	70	74	77

Installation and commissioning

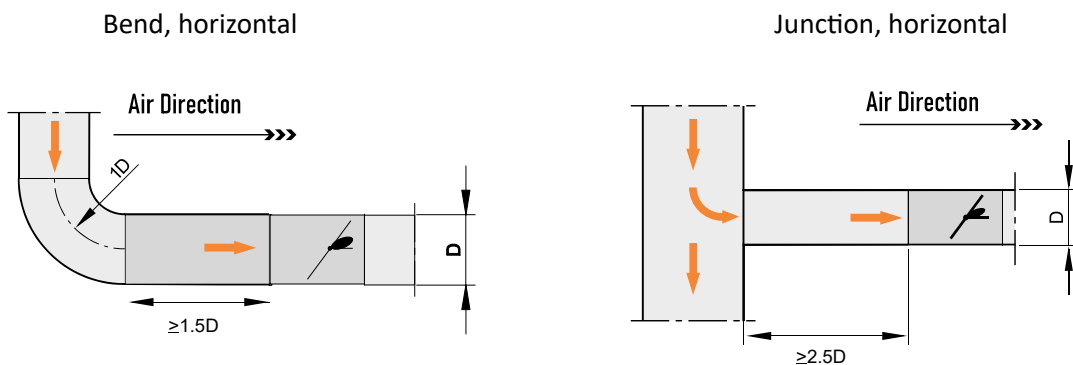
- Any installation orientation (from $H = 500$ mm, the horizontal air duct must be installed so that the operating side is positioned to the side (right / left) or below)
- Equipotential bonding to be provided by others
- Volume flow rate setpoint can be set from outside by rotary knob
- Loosen and lock the rotary knob with hexagonal socket screw
- No repeat measurements or adjustments required during commissioning
- For constructions with acoustic cladding, ducts on the room side should have cladding up to the acoustic cladding of the controller

Upstream conditions

The volume flow rate accuracy Δq_v applies to straight upstream. Bends, junctions or a narrowing or widening of the duct cause turbulence that may affect measurement. Duct connections, e.g. branches off the main duct, must comply with EN 1505. Free air intake only with a straight duct section of $1.5B$ or $1.5H$ upstream.

Space required for commissioning and maintenance

Sufficient space must be clear near to allow for commissioning and maintenance. If necessary, inspection openings of sufficient size are required.



The stated volume flow rate accuracy Δq_v can only be achieved with a straight duct section of at least $1.5D$ upstream between any bend and the controller.

A junction causes strong turbulence. The stated volume flow rate accuracy Δq_v can only be achieved with a straight duct section of at least $2.5D$ upstream. If there is no straight upstream section at all, the control will not be stable, even with a perforated plate.

■ ORDERING CODE : S-CAV(R) / S-CAV(RS) - (W mm x H mm)

- S-CAV(R) : Rectangular CAV, without insulation cladding
- S-CAV (RS) : Rectangular CAV, with insulation cladding
- W/H : Dimension step min at 50mm