ADRIATIC VF b

for suspended installation.
Active chilled beam with cooling, heating and ventilation

www.eurovent-certification.com
www.certiflash.com

ADRIATIC VF chilled beam

- The ADRIATIC VF is a chilled beam with integrated recirculated air opening in the face plate.
- Air is discharged into the room along the ceiling.
- Integrated VariFlow airflow distribution for simple adjustment at the site.
- An attractive chilled beam designed for suspended installation.

Table 1. Cooling capacity

Btuh/ft	CFM/ft	inWG	$\Delta T_{mk}F$	ΔT_lF
520	6.5	0.24	18	18
614	9.7	0.22	18	18
708	12.9	0.22	18	18

Primary airflow:	Up to 125 CFM
Pressure range:	.12 to .28 inWG
Total cooling capacity:	Up to 9563 BTU/hr
Heating capacity:	Up to 11612 BTU/hr
Size - Length:	From 48 to 142 in. (nominal) increments of 24 in.
Width:	14.3 in.
Height:	6.8 in.

Operation

- Cooling
- Heating (optional)
- Ventilation
- ADC air deflectors
- VariFlow airflow distribution

Application

The ADRIATIC VF is well-suited for use in all types of rooms with waterborne climate cooling:

- Offices and conference rooms
- Hotels
- Classrooms
- Data processing rooms
- Bank premises
- Restaurants

Advantages of the ADRIATIC VF

- The ADRIATIC VF has an attractive design and extremely low installation height that fits in well in all types of room decor.
- Since the ADRIATIC VF is a closed climate beam with integrated recirculating air opening in the face plate, it can be mounted directly against the ceiling without regard to circulation air slots.
- The ADRIATIC VF combines the superior air discharge properties of ceiling units with the stringent design requirements of suspended climate beams. The discharge of air along the ceiling provides the optimal coanda effect that is always the objective when it is desirable to maintain low air velocities in the occupied zone.
- The connection components, valves and dampers are concealed in a simple manner by an attractive connection casing. The casing is installed after the climate beam has been suspended and connected.
- Swegon's ADC air diffusers, which are standard, provide for the adjustment of the air throw performance of the climate beam.
- Integrated VariFlow airflow distribution for simple volume adjustment at the site. The airflow can be varied to suit the application by means of nozzle strips. The fixed nozzles guarantee that the airflow will be correct and all in all offers a flexible and simple solution.

ADRIATIC VF

The ADRIATIC VF is a closed, active climate beam with two-way air discharge. Cooling and ventilation or cooling, heating and ventilation.

Installation

The ADRIATIC VF is designed for suspended installation from hangers or mounting directly against the ceiling.

Connection dimensions:

Cooling (water):	plain pipe end with available 1/2-inch NPT connector.
Heating (water):	plain pipe end with available 1/2-inch NPT connector.
Air:	5 inch nominal duct connection

Suspension:

The units are delivered without mounting accessories. If mounting accessories are required, they can be ordered separately.

The SYST MS assembly piece is required for suspended installation from hangers.

The SYST MD4S is required for mounting the beam directly against the ceiling

Operation

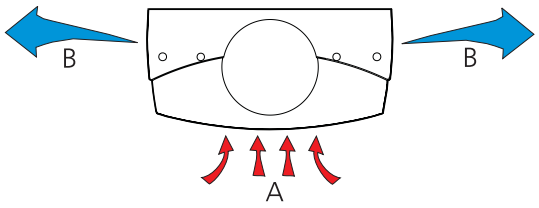


Figure 1. Cooling and ventilation.

A = Room air

B = Primary air and chilled room air

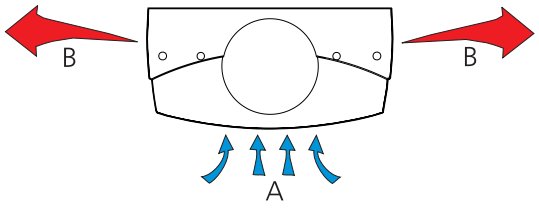


Figure 2. Heating and ventilation.

A = Room air

B = Primary air and heated room air

Installation

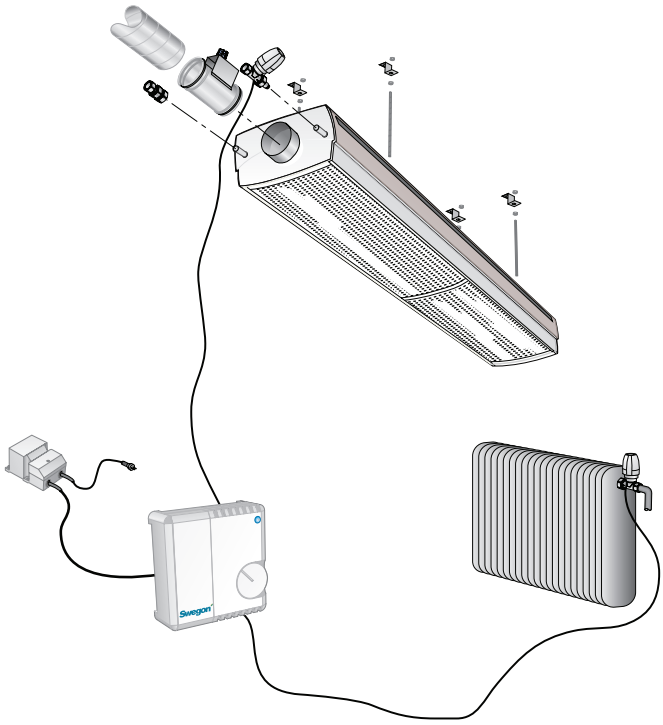


Figure 3. Typical installation, showing optional water valves and actuators, air balancing damper, installation kit and controls.

Range of products held in stock:
Inquire with your nearest Swegon office for current stock levels.

Available to order:
With horizontal connection: 48 to 144 inches nominal. Inquire about special sizes.

With vertical connection: 60 to 168 in. nominal. Inquire about special sizes.

Standard lengths above are available with 24 in. increments.

Flexible nozzle configuration by means of VariFlow
Nozzle configuration, i.e. the number of nozzle openings in the air duct for discharging air to the room. For further particulars, refer to ProSelect software. The number of nozzle configurations that are possible to set is enormous, however the basic concept is based on three different fixed nozzles:
L = Low flow for low airflows, M= Medium Flow for medium-sized airflows, H= High Flow for high airflows and combinations of these. You can also combine the nozzle settings for the airflows if a one-way version is used (70/30%).

Waterborne heating, Variant -B
See the section on heating.

Internal connection (-I):
With 12 in. empty section and end panel without openings for pipes and an air duct. Designed for vertical connection to the climate beam. For particulars of the capacity, calculate the active length as follows: $L_{active} = L_{rated} - 12$ in.

ADRIATIC VF with ADC
The Swegon ADRIATIC VF climate beam contains ADC as standard. ADC stands for Anti Draft Control, which enables you to set the diffusion pattern of the air being distributed to avoid risk of draft.

A number of ADC sections with four air deflectors per section are arranged on each side of the unit. Each section is adjustable from a straight setting to 40° air deflection to the right or left in increments of 10°. This provides enormous flexibility and can be easily adjusted without having to affect the system as a whole. The static pressure is not affected by ADC. The sound level increases slightly when the air deflectors are set for "V-shape" air discharge. For more information, see Swegon's ProSelect sizing program.

The ADRIATIC VF with ADC, among others, offers the following benefits:

- Shorter distance between contra-discharging climate beams.
- Simple correction of the direction of air discharge to compensate for obstructions.
- Simple to adjust at the site.
- Enables the user to adjust the comfort setting in the room.
- Offers great flexibility for future conversion of the rooms.

Special Types
The ADRIATIC VF can, on enquiry, be supplied painted in an optional color or relief finish paint.

For further particulars about special types, get in touch with your nearest Swegon representative.

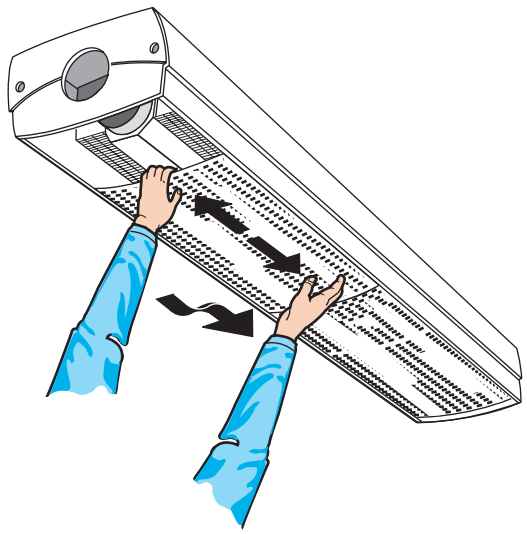


Figure 4. Access from below.

ADRIATIC VF with VariFlow

Swegon's built-in airflow diffuser can be set to three different positions and makes it possible to field-adjust the airflow. The ADRIATIC VF with VariFlow, among others, offers the following benefits:

- Shorter delivery time because the stocked products have a substantial working range.
- It is simple to change the airflow if changes are made in the installation.
- Asymmetrical airflow (for example 70/30 %) can be set directly on the stocked product.
- Interacts very well with our ADC air deflectors. Combined, there is enormous potential to control air distribution patterns and air motion.

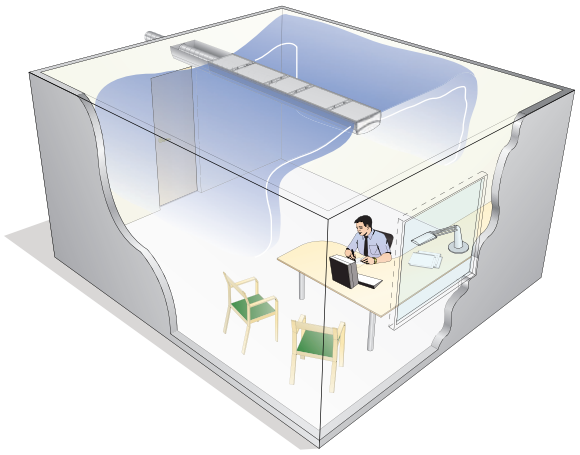


Figure 5. Example of symmetrical air distribution with VariFlow.

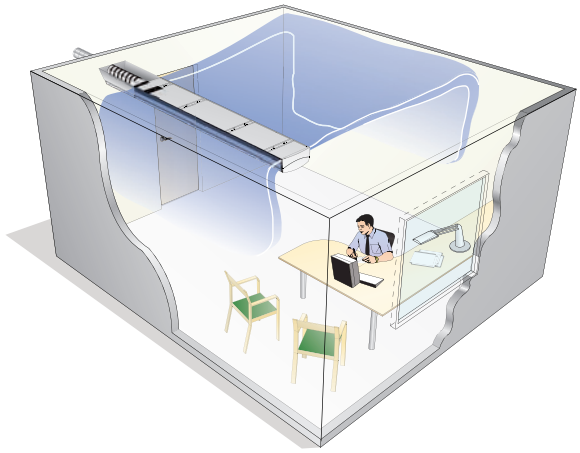


Figure 6. Example of asymmetrical air distribution with VariFlow.

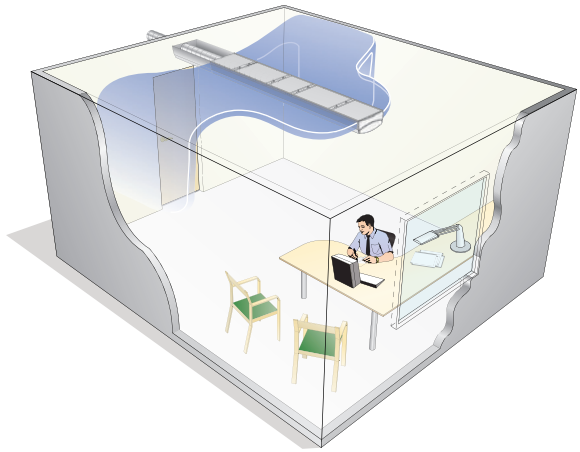


Figure 7. Example of displaced air distribution with VariFlow.

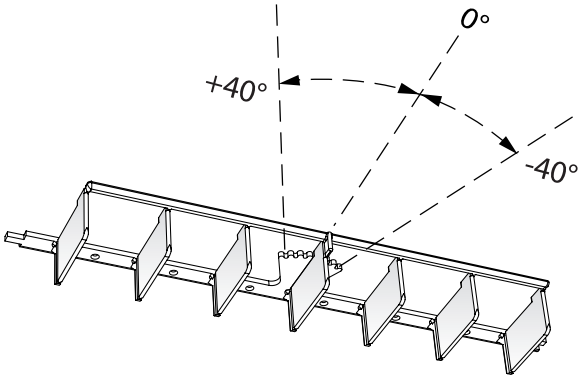


Figure 8. Swegon's ADC air deflectors.

Available to order

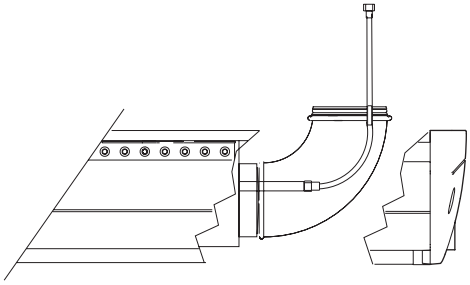


Figure 10. Installed connections for vertical connection. The duct bend and hose must be ordered separately.

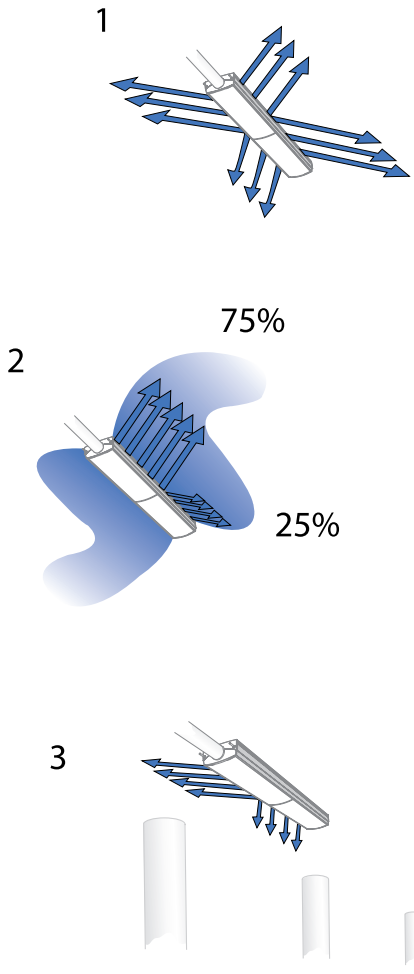


Figure 9. Flexible air discharge with ADC.
1. Climate beam with ADC set to V-shape.
2. Climate beam with ADC set to L-shape.
3. Climate beam with ADC set for avoiding obstacles.

Accessories

CRP Commissioning damper
Circular commissioning damper with perforated damper blade designed for climate beam installations and a manual actuator with knob.

FH Flexible connection hose
Flexible hose with stainless steel braided jacket. Choice of lengths and threaded or push-fit connection to building chilled water supply.

SYST CA Angled duct connection
Connection piece for vertical connection, 90°.

T-KA Connection casing, connection against a wall
Connection casing to be mounted in the extended section of the climate beam and beyond to a wall designed for concealing pipe and duct connections.

MD4S assembly piece
Special assembly piece for installation directly against the ceiling.

MS assembly piece
Assembly piece for suspended installation containing threaded rods of various lengths (7.9, 19.7 and 39.4 in.). Specify the length required as needed. The set also contains plastic caps designed for concealing the threaded rods and giving the beam a more attractive appearance. Ceiling mounting brackets, nuts and washers are included in the set.

Recommended limit values – water

Max. recommended operating pressure:	230 PSI
Max. recommended test pressure for testing a completed installation:	350 PSI
Recommended min. cooling water flow:	0.5 GPM
Increase in temperature, cooling water:	3.6 - 9° F
Min. permissible inlet flow temperature:	Should always be sized so that the system operates without condensation
Decrease in temperature, heating water:	3.6 - 18° F
Max. permissible inlet flow temperature:	140° F
Recommended min. hot water flow:	0.21 GPM

The min. recommended water flow per circuit ensures evacuation of any air pockets in the circuit.

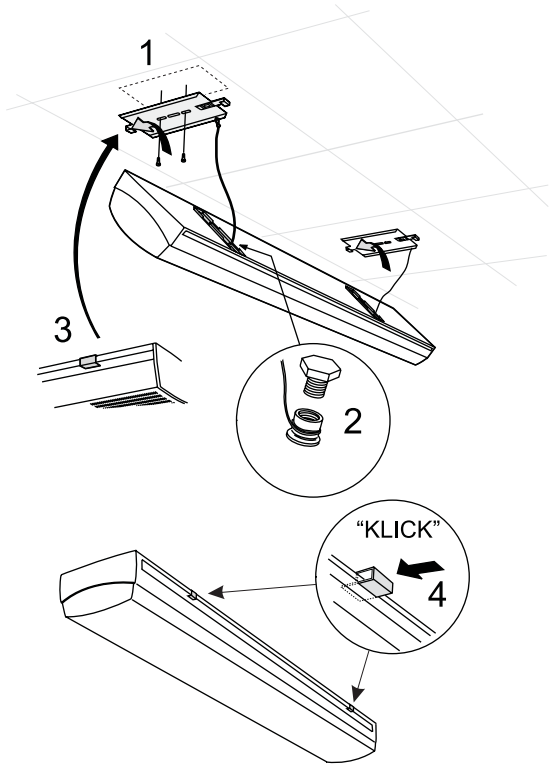


Figure 11. Installation directly against the ceiling, MD4.

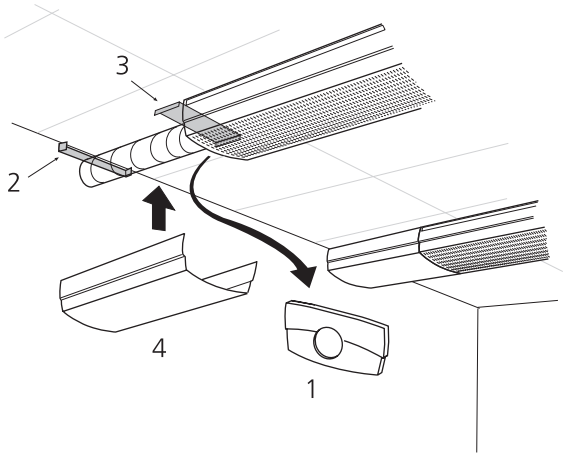


Figure 12. Casing for connection against a wall.

1. *Remove the plastic end panel of the climate beam.*
2. *Attach the wall mounting bracket on the wall.*
3. *Push the mounting plate to fit over and rest on the top of the climate beam.*
4. *Fit the casing in the wall mounting bracket and against the beam. Lock the casing in position by pushing it up to engage in the mounting plate.*

Flexible nozzle configuration by means of VariFlow (see Figure 13)

A large number of variants can be configured by adjusting the nozzle strips. Each nozzle strip is 24 in. long and can easily be adjusted with a supplied tool to the required position. There are three different settings (different sized fixed nozzles) on each nozzle strip:

L= Low for low airflows

M= Medium for medium large airflows

H= High for high airflows

There are different numbers of nozzle strips depending on the nominal length:

48 in. 4 nozzle strips (2 + 2 strips)

72 in. 6 nozzle strips (3 + 3 strips)

96 in. 8 nozzle strips (4 + 4 strips)

120 in. 10 nozzle strips (5 + 5 strips)

144 in. 12 nozzle strips (6 + 6 strips)

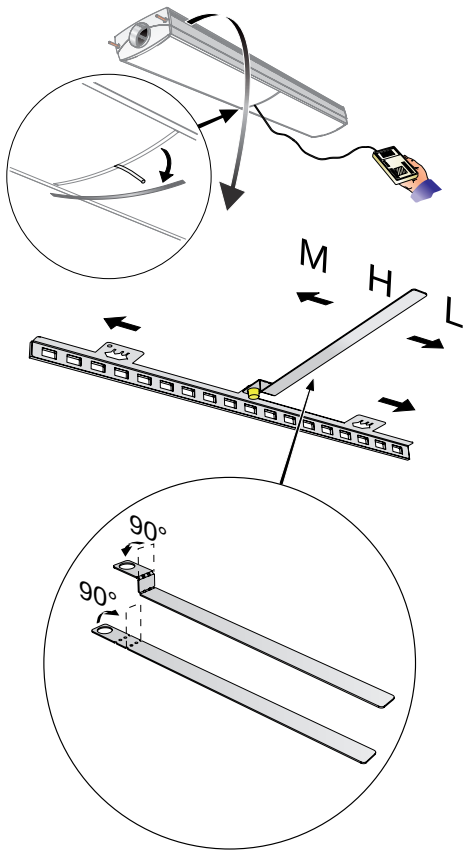


Figure 13. Change of nozzle configuration by means of an adjustment tool.

Each side can also be freely configured for asymmetrical airflows. The number of nozzle strips for a certain length of beam is always the same.

For specifying asymmetrical distribution, see Figure 14 which describes the mutual relation between the sides viewed from above (Top view) based on the arrangement of the water pipes.

For more detailed information, refer to the Swegon Pro-Select sizing program available at the website: www.swegon.com

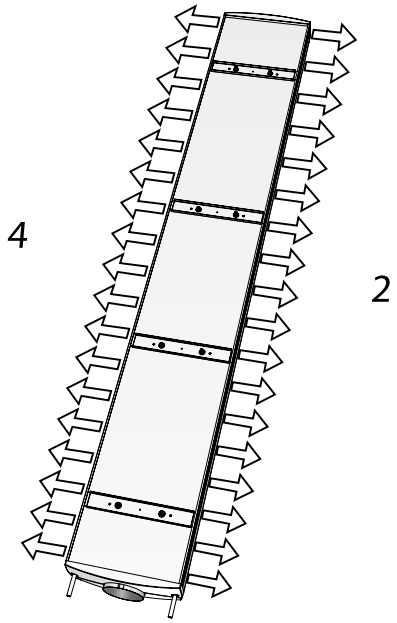


Figure 14. air flow, pages 1-4.

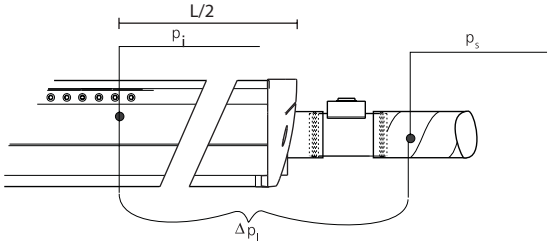


Figure 15. Pressure relationship, air.

p_i = nozzle pressure (measured in the measurement hose or in the center of the nozzle).

p_s = pressure upstream of the unit and damper.

Δp_i = throttling range, mounted damper.

Technical Data

Cooling

The cooling capacities have been measured in conformance with EN 15116 Standard. Detailed performance data is available online selection software ProSelect, available at www.swegon.com.

The following can be read in the Proselect:

- The length of the climate beam (inches)
- The primary airflow (CFM)
- The noise level for an open damper, with ADC
- Nozzle pressure (inWG)
- Airborne cooling capacity (BTU)
- Waterborne cooling capacity (BTU)

N.B. The total cooling capacity is the sum of the airborne and waterborne cooling capacities.

Table 2. Capacity, natural convection, cooling (BTU/hr)

Length	Temperature, room – water, F							
	ΔT_{mk}	10.8	12.6	14.4	16.2	18	19.8	21.6
48 in.		168	205	243	287	328	376	420
72 in.		263	321	386	451	519	591	662
96 in.		359	441	526	615	710	806	905
120 in.		454	557	666	782	898	1021	1147
144 in.		550	676	809	946	1089	1239	1393
For a water flow of 1 GPM								

Heating

Additional heat – Heating coil

The heating function is intended for use only as a supplement if surplus heat is available, however during shorter periods a smaller amount of surplus heat will be needed, for example in the evening and at night.

The supply air fan must then be in operation in order for the additional heat to reach the room. The supply air is used for mixing the warm air with chilled air, which is why the temperature distribution in the room is completely dependent on the ratio between supply air and the capacity taken from the climate beam.

The heat is conducted along the ceiling which, in order to work properly, requires low supply flow temperature and a certain impulse. A temperature gradient of 9.7° F is normally obtained between floor and ceiling.

Recommendations for heating operation

Max. permissible inlet flow temperature: 140° F
Min. permissible heating water flow: .21 GPM
Nozzle pressure, p_i: >.12 inWG
For perimeter walls with large glazed surfaces, it is recommended that radiant heating in the ceiling or radiators along the perimeter wall be used for compensating the radiant cooling energy of the glazed surfaces. For advice concerning other conditions, contact Swegon.

Acoustics

Diagram 1 shows the total generated sound power (L_{Wtot} dB), as a function of the airflow and pressure drop across the damper. By correcting LWtot with the correction factors from Table 2, the sound power levels for the corresponding octave bands can be obtained ($L_W = L_{wtot} + K_{ok}$). Refer to ProSelect Web at www.swegon, for detailed acoustical analysis.

Diagram 1. Throttling range of SYST CRPc 9-125 damper.

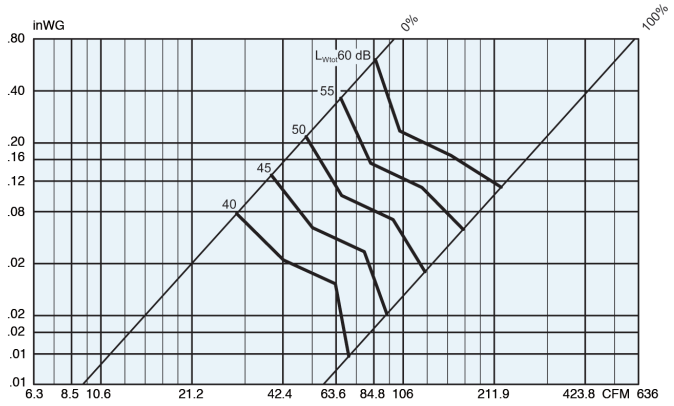


Table 3. Sound power level for CRPc 9-125 damper, Correction factor, K_{ok}

Size	Mid-frequency (Octave band) Hz							
CRPc	63	125	250	500	1000	2000	4000	8000
125	0	-2	-9	-15	-20	-25	-29	-35
Tol. +	2	2	2	2	2	2	2	2

Dimensions

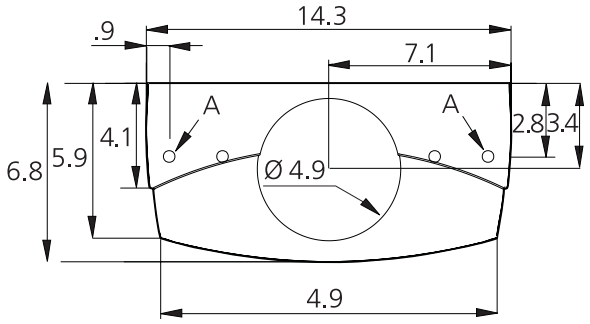


Figure 16. 4.9 in. duct connection, end view.

A = Cooling, 1/2" NPT threaded connection or stub out for flexible hose.

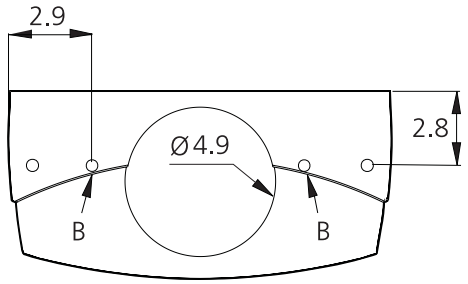


Figure 17. 4.9 in. duct connection, end view.

B = Heating, 1/2" NPT threaded connection or stub out for flexible hose.

Length, ADRIATIC VF

Nominal dimensions:	48, 72, 96, 120, 144 in.
Length:	Nominal – .6 in (+ .2 to –.1 in.)

Length to the division of the face plate, Lu = L / 2

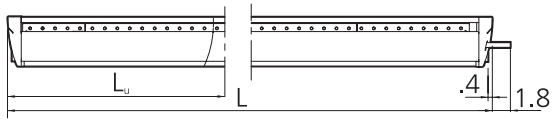


Figure 18. Horizontal connections in end panel, long side view.

L = Length, ADRIATIC VF
Lu = length to the division of the face plate.

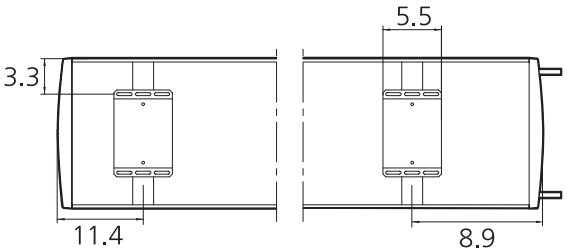


Figure 19. Horizontal connections in end panel (-OH), top view.

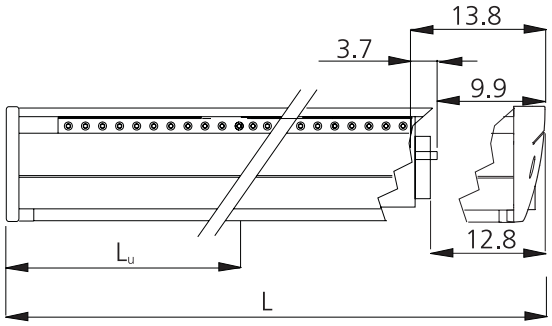


Figure 20. Internal connections (-I), long side view.

L = Length, ADRIATIC VF
Lu = length to the division of the face plate.

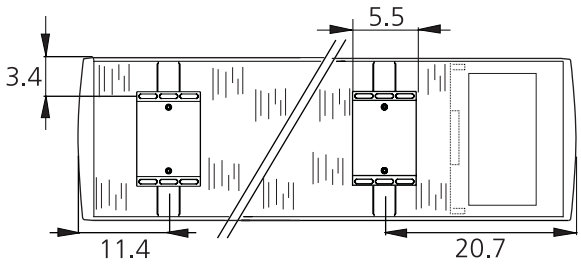


Figure 21. Internal connections (-I), top view.

Installation space

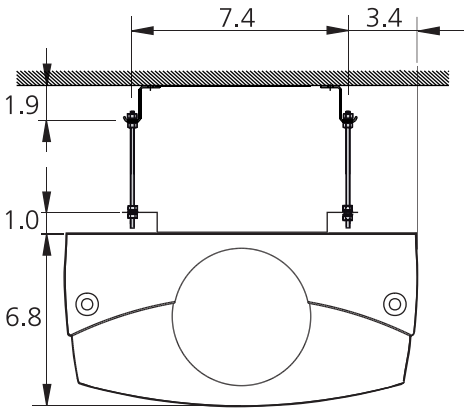


Figure 22. SYST MS assembly piece.

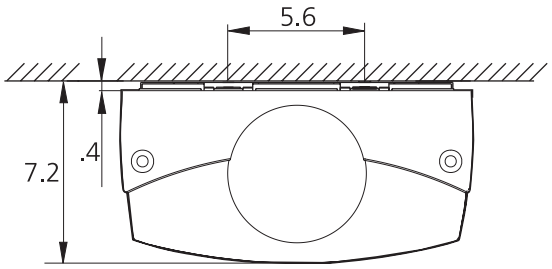


Figure 23. MD4S assembly piece.

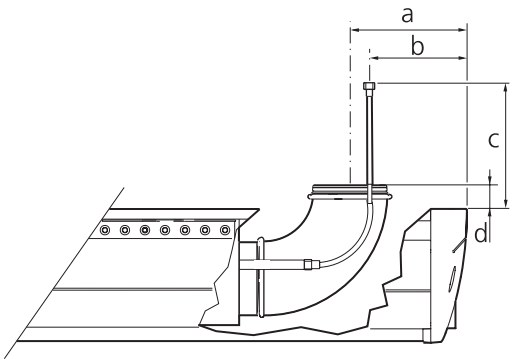


Figure 24. Internal connections (-I), vertical connections.

Table 4. Dimensions, vertical connection to the climate beam.

a	b	c	d
6.8 in.	4.7 in.	7.1 in. (length of hose)	2.8 in.

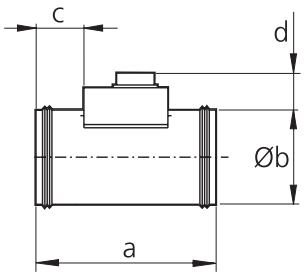


Figure 25. CRPc 9-125 Commissioning damper.

Table 5. Dimensions, SYST CRPc 9-125

a	b	c	d
7.2 in.	4.9 in.	1.6 in.	1.7 in.

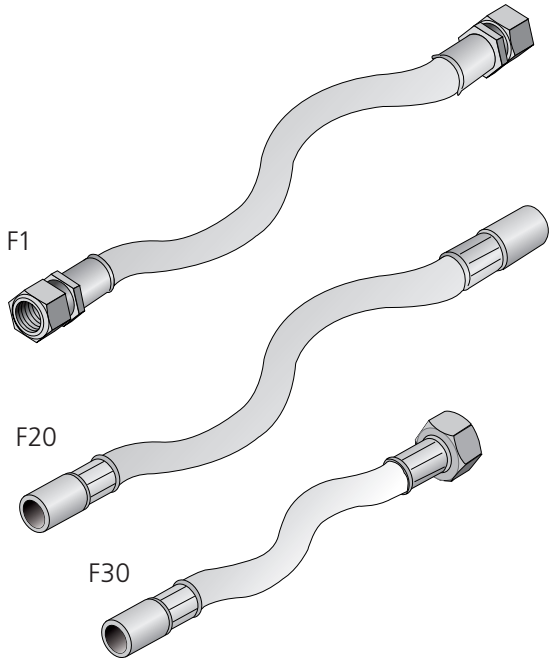


Figure 26. Flexible connection hose. SYST FH.

FI = compression fitting, specify length.
F20 = push-fit both ends, specify length.
F30 = push fit to chilled beam, 1/2" NPT connection to building chilled water supply. Specify length.

Contact nearest Swegon office for flexible hose options.

Contractor demarcation/Point of connection

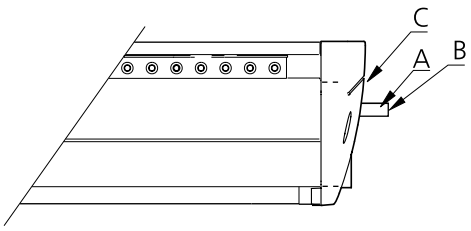


Figure 27. Points of connection.

A = Cooling: The plumbing or mechanical contractor connects the beam to the building chilled water supply.

B = Heating: The plumbing or mechanical contractor connects the beam to the building chilled water supply.

C = Ventilation: The ventilation contractor connects the beam to the primary air supply.

Weight

Table 6. Weight

Weight per foot, ADRIATIC VF	length ≤ 96 in.	length ≥ 120 in.
Dry weight	7.4 lbs/ft.	7.7 lbs/ft.
Weight, filled with water	8.1 lbs/ft.	8.4 lbs/ft.

Ordering Key

Type ADRIATIC VF active climate beam including ADC air deflectors for cooling and ventilation or cooling, heating and ventilation.

The units are supplied painted in Swegon's standard shade of white, RAL 9010, gloss ratio 30 ±6%.

Contractor demarcation

Swegon's limits of supply are at the points of connection for water and air respectively. At these connection points, the pipework contractor connects to plain pipe ends, fills the system, bleeds it and tests the pressure in the circuits. The ventilation contractor connects to the duct connections with dimensions as specified on the basic size drawing under "Dimensions – Contractor Demarcation/Points of connection". If valves and actuators are installed in the connection section, this must take place before the damper and ventilation duct is connected. When mounting a casing, the end panel must be removed before the unit can be mounted in the ceiling. The units are delivered without mounting parts for suspended installation.

Specification

Table 7. Product

ADRIATIC VF b	aa-	b-	c-	dddd/dddd
Climate beams				
Incl. ADC air deflectors				
Length:				
-OH: 48, 72, 96, 120, 144 in.				
-I: 60, 84, 108, 132, 165 in.				
Operation:				
A = Cooling and supply air				
B = Cooling, heating and supply air				
Connection:				
-OH = Horizontal connection				
-I = Internal connection				
Nozzle configuration:				
See ProSelect for selections.				

Ordering examples

Active climate beam for suspended installation with cooling, ventilation and length 96 in.:
ADRIATIC VF b 96-A-OH (2L2M/2L2M).

Tables 8 – 16. Accessories

Connection casing	Adriatic VF b T-KA	aaa
Length: 4.7, 11.8, 19.7, 27.6 in.		

Loose end panel	Adriatic VF b T-GL aa
UH = Without openings MH = With openings	

Asssembly piece	SYST MD 4S
(For installation directly against the ceiling)	

Asssembly piece	SYST MS	aaaa-	b-	RAL9010
(For suspended installation)				
Length of threaded rod: 7.9, 19.7, 39.4 in.				
1 = Threaded rod only				
2 = Double threaded rods with thread locking device.				

Flexible connection hose (1)	SYST FH F1	aaa	0.5
Clamping ring coupling against pipe on both ends			
Length: 11.8, 19.7, 27.6 in.			
Dimension (Ø) 0.5 in.			

Flexible connection hose (1)	SYST FH F20	aaa	0.5
Quick-fit coupling (push-on) against pipe on both ends			
Length: 10.8, 18.7, 26.6 in.			
Dimension (Ø) 0.5 in.			

Flexible connection hose (1)	SYST FH F30	aaa	0.5
Quick-fit coupling (push-on) against pipe on one end, 1/2-inch NPT sleeve nut on the other end			
Length: 7.9, 15.7, 23.6 in.			
Dimension (Ø) 0.5 in.			

Connection piece	SYST CA-125-90
(90° duct bend)	

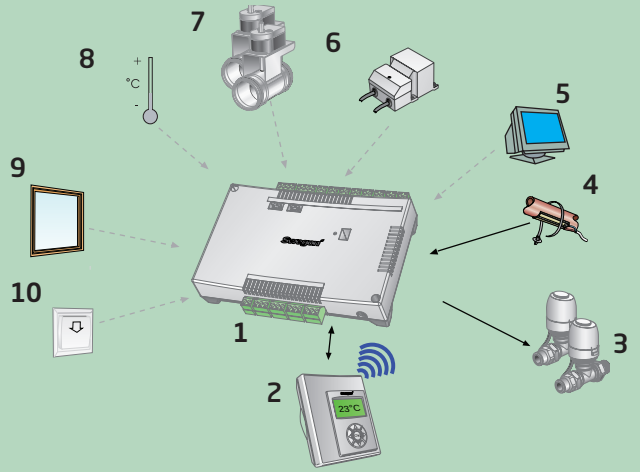
Commissioning damper	SYST CRPc 9-125

Temperature, airflows and communication

CONDUCTOR

The optimum solution for individual control of the temperature and airflow in each room. Can be easily modified for either demand-controlled or constant airflows.

Communication is possible with Swegon's WISE system and with external supervision systems via Modbus.



1 = Controller
2 = Room unit with wireless or wired communication
3 = Valve actuator for cooling and heating water
4 = Condensate sensor

As required:

5 = Communication via Modbus
6 = Transformer
7 = Motorized ventilation damper
8 = External temperature sensor
9 = Window contact
10 = Key card holder or presence sensor

Guide specifications

Contact Swegon for current guide specifications.