PARAGON Wall

Compact comfort module for offices



QUICK FACTS

- Constant airflow – Combines ventilation, cooling, and heating in a compact comfort module for CAV systems
- Optimised for offices and care rooms – Creates a quiet and comfortable indoor climate without a fan in the room
- Flexible air distribution – Adjustable airflow direction with ADC and adjustable grille lamellas ensures a high level of comfort
- Easy installation – Flexible connection options and optional factory-fitted control equipment simplify installation
- High capacity and low maintenance – Efficient cooling and heating even at low pressures and airflows, with no fan or filter requiring maintenance

KEY TECHNICAL DATA				
Airflow range		Pressure range	Total cooling capacity	Heating capacity(W)
l/s	m³/h	Pa	W	Water
0-46	0-165	20-200	≤ 1100	≤ 850

SIZE		
Length (mm)	Depth (mm)	Height (mm)
800, 1100, 1400	722 (+0-20)	205

Cooling, air: ΔTl = 6K / water: ΔT_{mk} = 8,5K, t_{water} = 14/17°C, water flow 0,06 l/s.

Heating, air: ΔTl = -1K / water: ΔT_{mk}= 19,8K, t_{water} = 45/38°C, water flow 0,032 l/s.

Commissioning pressure: 70 Pa.

30 dB with 5 dB room attenuation.

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Swegon reserves the right to alter specifications.

Technical description

Design

PARAGON Wall is a 1-way air distribution comfort module designed primarily for offices and care rooms, where high demands are placed on comfort, low sound levels and discreet installation.

Thanks to an optimised cooling/heating coil, PARAGON Wall delivers high cooling and heating capacity even at low airflows and pressure drops. The compact design minimizes space requirements and is ideal for installation at the rear edge of the room.

On the rear of the product, the supply airflow is set using the Flow Control nozzles. A simple control is used to select the required k-factor to achieve the correct airflow to the room at the current commissioning pressure.



Figure 1. PARAGON Wall, front.

Adjustable supply and return air grille

The adjustable supply and return air grille ensures a clean, well-fitted transition to the wall. The grille has an adjustment range of ±20 mm and is easily secured with screws for stable and safe installation.

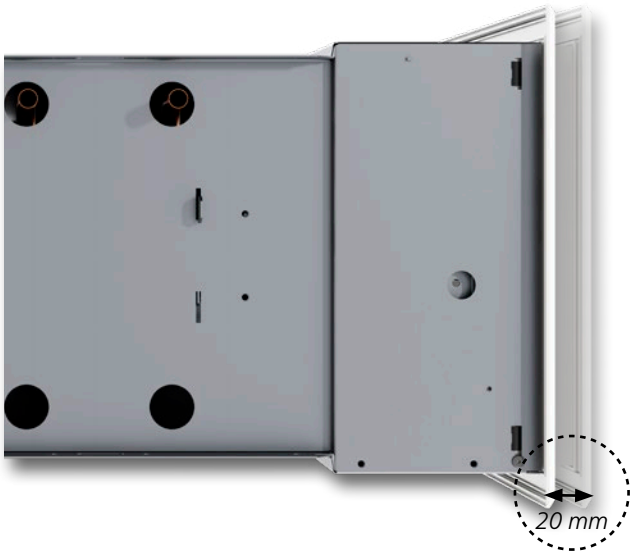


Figure 2. Adjustment of supply and return air grille.

Lightweight and service-friendly

PARAGON Wall has all control components and service points located on the rear of the product. This enables easy access, for example from a corridor, so that service can be carried out without entering the room.

Quiet and efficient

- High induction ensures excellent air quality and comfort.
- Low pressure drop reduces fan energy.
- Quiet operation suitable for noise-sensitive environments.

Sustainable by default

- The product contains steel with at least 75% recycled material.

Sizes and variants

The product is available in three lengths: 800, 1100 and 1400 mm.

All sizes can be ordered with the water connection on the left or right short side, providing high installation flexibility.



Figure 3. Water connection right.

Water connections

Optional water connections on the right or left side provide great flexibility in both planning and installation. The connection position can be adapted to pipe routing, available installation space and room layout.



Figure 4. Water connection left.

Optional electric heating

Available with built-in electric heating of 350 W or 700 W for the 800 mm width, and 500 W or 1000 W for the 1100 and 1400 mm widths, with simple connection and control via a 24 V auxiliary relay.

Functionality

PARAGON Wall features an integrated actuator for airflow adjustment.

This ensures:

- Optimal comfort in every room or zone.
- Lower energy use.
- Future-proof and flexible operation.

Flow Control

PARAGON features integrated Flow Control nozzles for easy adjustment of a constant supply airflow. A manual control on the rear of the product is used to select the required k-factor to achieve the correct airflow at the current commissioning pressure.

The airflow is adjusted by adapting the nozzle opening, allowing the available operating pressure to be utilised for efficient air mixing and high cooling and heating capacity.



Figure 5. Flow Control for quick and easy commissioning during start-up and when the room layout changes.

Anti-Draught Control (ADC)

Anti-Draught Control (ADC) makes it possible to direct and distribute the supply air to reduce the risk of draughts in the occupied zone.

PARAGON Wall is equipped with both horizontal and vertical ADC fins, providing great flexibility to adapt the air distribution pattern to the room layout and current conditions.

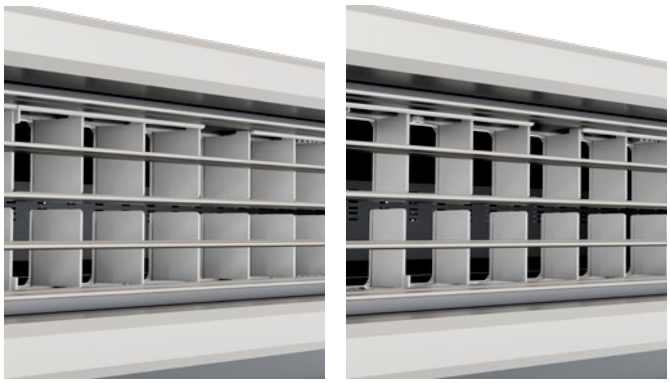


Figure 6. ADC.

Material and surface treatment

- PARAGON Wall is manufactured from recycled and renewably produced galvanized sheet steel (zinc plated).
- The grille can be ordered in several colours.
- Standard colour:
  - RAL 9003 Signal white, gloss 30
- Alternative standard colours:
  - RAL 7037 Dusty grey, gloss 30
  - RAL 9010 Pure white, gloss 30
  - RAL 9005 Jet black, gloss 30
  - RAL 9006 White aluminium, gloss 70
  - RAL 9007 Grey aluminium, gloss 70

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Operating principle

Primary air is supplied through the duct connection at the rear and creates positive pressure inside the product. The positive pressure distributes the primary air at relatively high velocity through the slot openings. The high primary-air velocity creates negative pressure that induces room air.

Recirculated room air is drawn in through the same grille used to distribute air to the room.

The recirculated air then passes through the coil where, depending on demand, it is cooled, heated or passes untreated before mixing with the primary air and being supplied to the room.

For offices, the air is preferably distributed in a fan-shaped pattern, using as much of the ceiling and any partition walls as possible to avoid draughts in the occupied zone.

Horizontal air distribution is achieved using ADC (Anti-Draught Control). Where vertical distribution is required, this is achieved by adjusting the return-air grille louvres upwards or downwards.

PARAGON Wall has stepless k-factor adjustment and a wide airflow range.

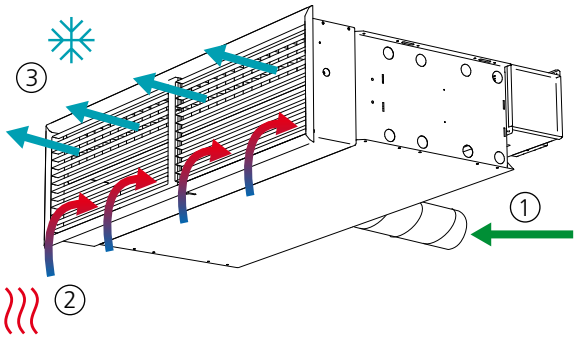


Figure 7. Cooling function PARAGON Wall.
1. *Primary air.*
2. *Induced room air.*
3. *Primary air mixed with cooled room air.*

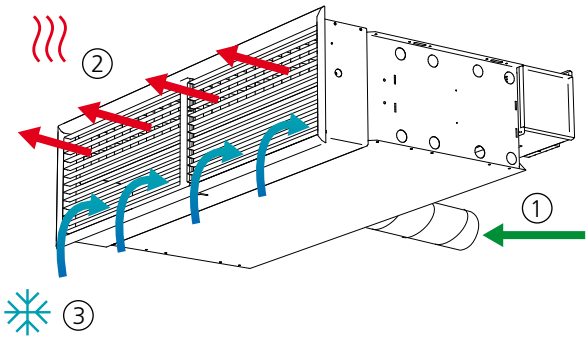


Figure 8. Heating function, also includes cooling capacity.
1. *Primary air.*
2. *Primary air mixed with heated room air.*
3. *Induced room air.*

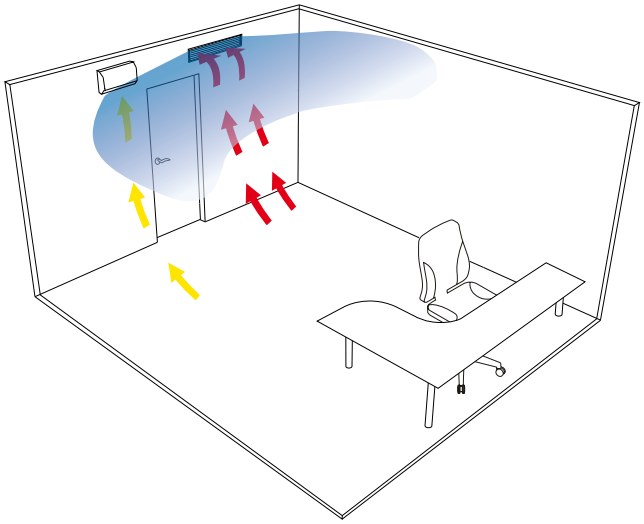


Figure 9. Air distribution with PARAGON Wall in an individual office.

Installation, commissioning and maintenance

PARAGON Wall is supplied with four mounting brackets and self-tapping screws packaged separately with each product. The pre-punched holes in the brackets simplify fastening.

The mounting brackets are designed so they can be turned in any direction depending on the selected suspension system. Turned inward, they enable simple installation using mounting strips. Turned outward, they are optimised for suspension using M8 threaded rods.

Mounting strips and threaded rods are not supplied. Threaded rod/assembly fitting SYST MS M8 is ordered separately.

Connecting water

The water pipes are always located on the product's short side.

Connect the water pipes using push-on or compression ring couplings when the product is ordered without valves.

Note that compression-ring couplings require support sleeves inside the pipes.

Do not use solder couplings to connect the water pipes.

High temperatures can damage the product's existing soldered joints.

Flexible connecting hoses for water are available for both plain pipe ends and valves and can be ordered separately.

Recommended limit values, water

Max. recommended operating pressure (across coil only):	1600 kPa*
Max. recommended test pressure (across coil only):	2400 kPa*
Max. recommended pressure drop across CCO-valve:	20 kPa
Max. recommended pressure drop across standard valve:	20 kPa
Min. heating water flow:	0.013 l/s
Max. permissible inlet flow temperature:	60 °C
Min. cooling water flow:	0.04 l/s
Min. permissible inlet flow temperature:	Should always be sized to ensure the system operates without condensation.

* Applies without fitted control equipment.

Connection dimensions

Cooling (water):	Cu Ø 12 x 1.0 mm plain pipe end
Heating (water)	Cu Ø 12 x 1.0 mm plain pipe end
Air:	Ø125

Electrical data

Power supply	24V AC +-15 % 50-60Hz 24V DC +-25 %	
Power consumption	VA / unit	W / unit
Inrush current 10ms/20ms	72.0	36.0
Operation	4.5	3.0

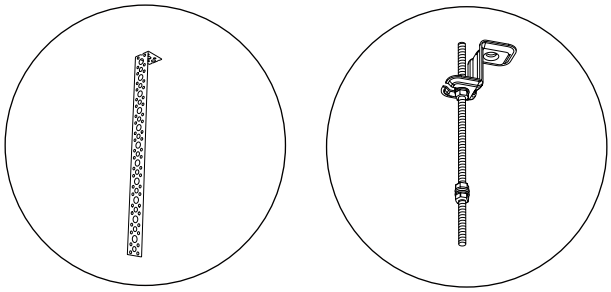


Figure 10. Suspension options with mounting strips and threaded rods respectively.

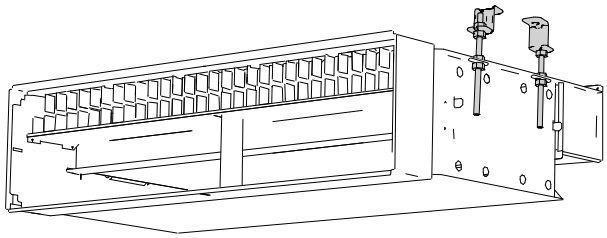


Figure 11. Installation of PARAGON Wall, here suspended using threaded rods.

For detailed information about installation, commissioning and maintenance, see the PARAGON Wall IOM Manual.

Swegon reserves the right to alter specifications.

Water connection

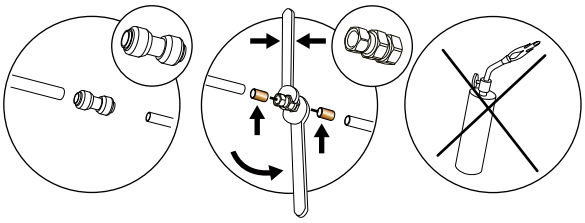
Connection dimensions

Standard version with factory-fitted valves:

Length (mm)	Cooling, return	Heating, return
800, 1100, 1400	DN15 external thread	DN15 external thread

Standard version without factory-fitted valves:

Length (mm)	Cooling, supply and return	Heating, supply and return
800, 1100, 1400	Plain pipe end	Plain pipe end
	(Cu) Ø 12 x 1.0 mm	(Cu) Ø 12 x 1.0 mm



Note that compression-ring couplings require support sleeves inside the pipes.

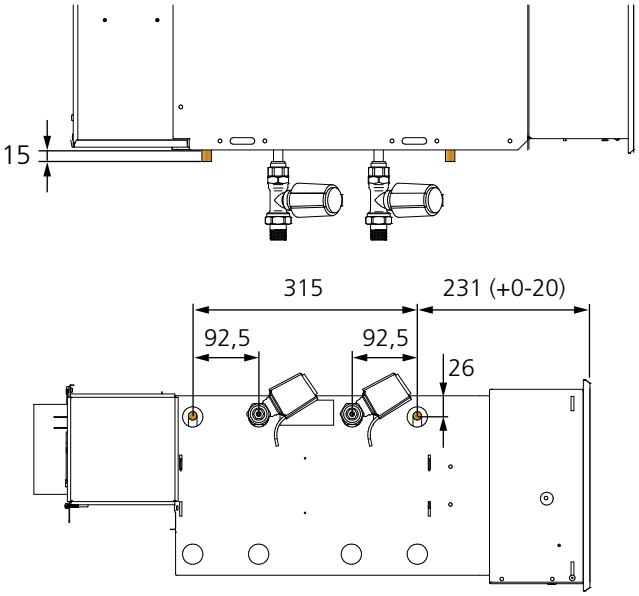
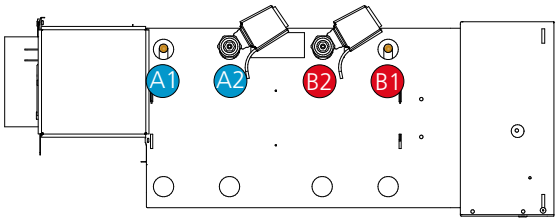


Figure 13. Dimensions, suspension.

Water connection on right side (R)

Cooling and heating R, all sizes.



Cooling R, all sizes.

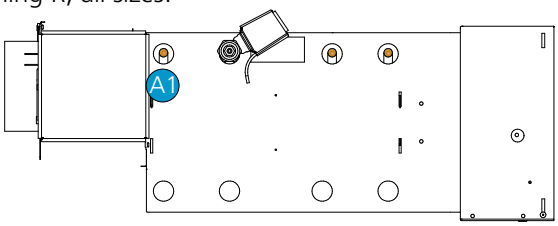
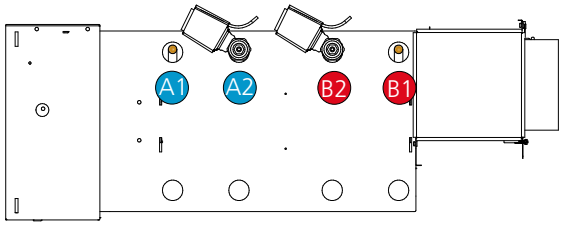


Figure 12. Water connection on right side.

A1 = Cooling water, supply *B1 = Heating water, supply*
A2 = Cooling water, return *B2 = Heating water, return*

Water connection on left side (L)

Cooling and heating L, all sizes.



Cooling L, all sizes.

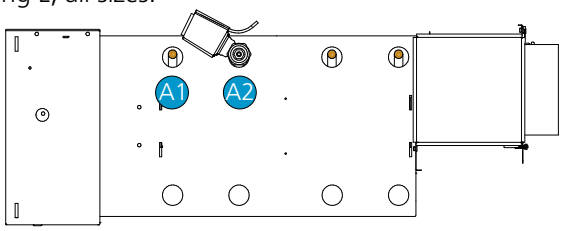


Figure 14. Water connection on left side.

A1 = Cooling water, supply *B1 = Heating water, supply*
A2 = Cooling water, return *B2 = Heating water, return*

Certificates and standards

- EPD Declaration.
- CE Declaration.
- Eurovent.

Certifications and standards are available at www.swegon.com.

Technical data

Dimensions and weights

PARAGON Wall 800

Length (mm)	Type	Dim. (Ø)	Dry weight* (kg)		Water volume (l)	
			Without grille	With grille	Cooling	Heating
800 R	A	125	17.7	19.8	1.4	
800 L	A	125	17.7	19.8	1.4	
800 R	B	125	17.7	19.8	1.4	0.4
800 L	B	125	17.7	19.8	1.4	0.4
800 R	X	125	17.7	19.8	1.4	
800 L	X	125	17.7	19.8	1.4	

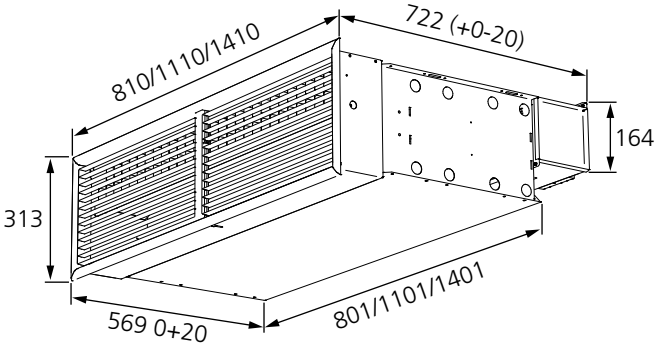


Figure 15. Dimensions with grille.

PARAGON Wall 1100

Length (mm)	Type	Dim. (Ø)	Dry weight* (kg)		Water volume (l)	
			Without grille	With grille	Cooling	Heating
1100 R	A	125	23.7	26.6	1.9	
1100 L	A	125	23.7	26.6	1.9	
1100 R	B	125	23.7	26.6	1.9	0.5
1100 L	B	125	23.7	26.6	1.9	0.5
1100 R	X	125	23.7	26.6	1.9	
1100 L	X	125	23.7	26.6	1.9	

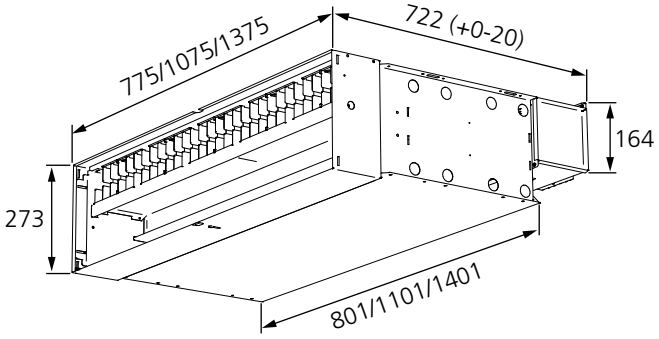


Figure 16. Dimensions without grille.

PARAGON Wall 1400

Length (mm)	Type	Dim. (Ø)	Dry weight* (kg)		Water volume (l)	
			Without grille	With grille	Cooling	Heating
1400 R	A	125	29.1	32.6	2.5	
1400 L	A	125	29.1	32.6	2.5	
1400 R	B	125	29.1	32.6	2.5	0.7
1400 L	B	125	29.1	32.6	2.5	0.6
1400 R	X	125	29.1	32.6	2.5	
1400 L	X	125	29.1	32.6	2.5	

*Add 0.7 kg for control equipment.

Swegon reserves the right to alter specifications.

Performance

Designations

P: Power (W, kW)

v: Velocity (m/s)

q: Flow (l/s)

p: Pressure (Pa, kPa)

t_r: Room temperature (°C)

t_m: Mean water temperature (°C)

ΔT_m: Temperature differential [t_r–t_m] (K)

ΔT: Temperature differential, between inlet and return (K)

ΔT_i: Temperature differential between room and supply air (K)

Δp: Pressure drop (Pa, kPa)

k_p: Pressure drop constant

Supplementary index:

k = cooling, l = air, v = heating, i = commissioning

Cooling

Tables 1–2 show the achieved cooling capacity from both primary air and water for different lengths and airflows.

The total cooling capacity of the product is the sum of the primary air and water cooling capacities.

Table 1 - Cooling capacity, 70 Pa

Length (mm)	Airflow		Sound level* (dB (A))	Cooling capacity, air (W) at ΔT				Cooling capacity, water (W) at ΔT_{mk}**							Air pressure drop constant (k)
	l/s	m³/h		6	8	10	12	6	7	8	9	10	11	12	
800	8	30	<20	60	80	100	120	182	213	243	274	302	332	363	1.0
800	17	60	<20	120	161	201	241	279	323	367	411	455	499	542	2.0
800	25	90	20	181	241	301	361	319	371	423	475	531	583	635	3.0
1100	8	30	<20	60	80	100	120	203	236	267	300	333	366	399	1.0
1100	25	90	<20	181	241	301	361	383	448	506	571	629	693	751	3.0
1100	37	133	26	266	355	444	533	429	500	565	635	704	768	838	4.4
1400	8	30	<20	60	80	100	120	241	278	314	347	383	419	455	1.0
1400	25	90	21	181	241	301	361	434	508	582	657	725	799	874	3.0
1400	48	172	29	344	459	574	688	548	638	728	825	915	1005	1095	5.7

Table 2 - Cooling capacity, 100 Pa

Length (mm)	Airflow		Sound level* (dB (A))	Cooling capacity, air (W) at ΔT				Cooling capacity, water (W) at ΔT_{mk}**							Air pressure drop constant (k)
	l/s	m³/h		6	8	10	12	6	7	8	9	10	11	12	
800	10	36	21	72	96	120	144	227	264	301	337	374	410	447	1.0
800	20	72	21	144	192	240	288	330	382	433	489	540	591	641	2.0
800	30	108	24	216	288	360	432	370	429	493	551	615	674	732	3.0
1100	10	36	21	72	96	120	144	250	291	332	373	413	454	494	1.0
1100	30	108	25	216	288	360	432	453	528	596	669	743	810	884	3.0
1100	44	158	31	317	422	528	634	501	581	661	740	819	891	970	4.4
1400	10	36	22	72	96	120	144	292	338	383	429	474	519	565	1.0
1400	30	108	24	216	288	360	432	512	597	681	766	851	935	1020	3.0
1400	57	205	34	410	547	684	821	632	741	842	952	1052	1162	1263	5.7

*Room attenuation = 4 dB.

**The stated capacities are based on the complete product including standard supply and return air grille.

Without grille, the water capacity increases by approx. 5%.

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

Water flow = 0.05 l/s, room temperature 20°C.

Heating

Table 3 - Heating capacity, 70 Pa

Length (mm)	Airflow		Sound level* (dB(A))	Heating capacity, water (W) at ΔT_{mk}							Air pressure drop constant (k)
	l/s	m³/h		5	10	15	20	25	30	35	
800	8	30	<20	80	168	260	353	451	547	637	1.0
800	17	60	<20	110	242	377	515	660	804	942	2.0
800	25	90	20	124	259	398	539	683	831	978	3.0
1100	8	30	<20	90	210	326	440	557	677	793	1.0
1100	25	90	<20	164	345	538	736	934	1139	1335	3.0
1100	37	133	26	180	374	573	775	979	1185	1396	4.4
1400	8	30	<20	120	252	389	531	673	820	955	1.0
1400	25	90	21	195	406	624	846	1075	1303	1512	3.0
1400	48	172	29	218	454	697	944	1199	1452	1712	5.7

Table 4 - Heating capacity, 100 Pa

Length (mm)	Airflow		Sound level* (dB(A))	Heating capacity, water (W) at ΔT_{mv}							Air pressure drop constant (k)
	l/s	m³/h		5	10	15	20	25	30	35	
800	10	30	21	138	189	292	397	504	613	725	1.0
800	20	60	21	127	267	414	568	725	882	1043	2.0
800	30	108	24	136	283	439	598	759	922	1084	3.0
1100	10	30	21	108	237	364	497	631	766	903	1.0
1100	30	90	25	179	386	597	814	1039	1268	1499	3.0
1100	44	158	31	200	414	643	872	1105	1339	1575	4.4
1400	10	30	22	135	284	441	603	767	934	1102	1.0
1400	30	90	24	218	452	693	939	1187	1442	1699	3.0
1400	57	205	34	239	503	773	1048	1333	1616	1906	5.7

*Room attenuation = 4 dB.

Water flow = 0.04 l/s, room temperature 20°C.

Swegon reserves the right to alter specifications.

Accessories

Factory-fitted accessories

Terminal block

Factory-fitted terminal block for connection of accessories.



Valve cooling and heating – SYST VDN 215

Valve for cooling and heating.

Preset fully open.

Function	Type	Dim.	K_v(m³/h)
Cooling/heating	VDN215	DN15 (½")	0,07-0,89

For more information, see separate product data sheet on www.swegon.com.



Actuator, cooling and heating – ACTUATOR 24V NC

Valve actuators for cooling and heating.

24 V AC/DC, NC (Normally Closed).

For more information, see separate product data sheet on www.swegon.com.



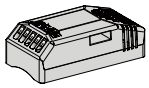
Condensation sensor – SYST PCS

The detector operates at the dew point temperature rather than a fixed relative humidity value.

The dew point is calculated from a temperature-compensated RH element and an extremely accurate sensor element thermally bonded to the detector's metal plate.

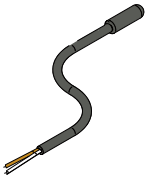
Compatible with LUNA.

For more information, see separate product data sheet on www.swegon.com.



Temperature sensor – T-TG-1

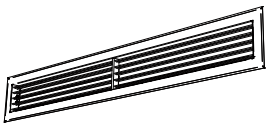
For temperature measurement.



Loose accessories

Supply air grille – PARAGON-SG

Supply air grille for PARAGON Wall, available for product lengths 800, 1100 and 1400 mm.



Grille lock – PARAGON Wall T- GL

Grille lock for securing the position of the supply air grille.



Transformer – Power ADAPT 20 VA (ARV)

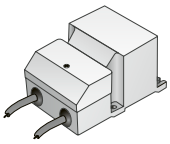
Input voltage 230 V 50-60 Hz, Output voltage 24 V AC.
Power 20 VA, Enclosure IP33.



Transformer – SYST TS-1

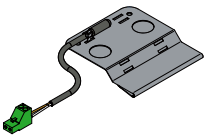
Double-insulated protective transformer 230V AC/24 V AC.
Input voltage 230 V 50-60 Hz, Output voltage 24 V AC,
Power 20 VA, Enclosure IP33

For more information, see separate product data sheet on www.swegon.com.



Temperature sensor – T-TG-1

External temperature sensor. Used, for example, if the room temperature is to be measured at a location other than the sensor module, or to measure the temperature on the main pipe in a change-over system.



Valve – SYST VDN 215

Straight valve for cooling and heating.

VDN 215 is preset fully open at K_v 0,89.

For more information, see separate product data sheet on www.swegon.com.

Function	Type	Dim.	K_v(m³/h)
Cooling/ heating	VDN215	DN15 (½")	0,07-0,89



Valve actuator, cooling and heating – ACTUATOR 24V NC

Valve actuators for cooling and heating.

24 V AC/DC, NC (Normally Closed).

For more information, see separate product data sheet on www.swegon.com.



Card switch – SYST SENSO II

Key card holder for hotel rooms.



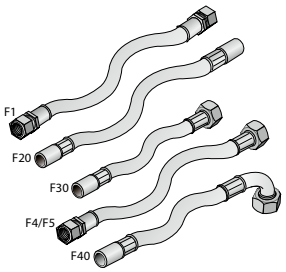
Assembly fitting – SYST MS M8

For installation use the assembly fitting containing threaded rods, ceiling brackets and nuts for all four mounting brackets.

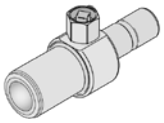
Threaded rod length from 200 mm. For large distances between ceiling and unit, double threaded rods with a thread lock are used.



Flexible hoses – SYST FH
Flexible hoses with couplings for chilled beams and comfort modules.
For more information, see separate product data sheet on www.swegon.com.



Venting nipple, push-on – SYST AR-12
A venting nipple is available as a complement to the flexible hoses with push-on couplings. The nipple fits directly in the push-on hose coupling for easy installation.



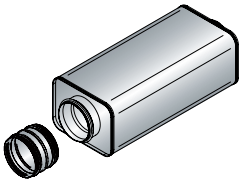
Air connection fitting, nipple – SYST AD1
SYST AD1 is used as a joint between PARAGON Wall and the duct system.
Available in two dimensions: Ø125 and Ø160 mm.



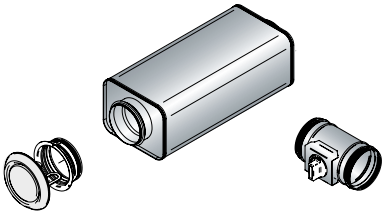
Air connection fitting – SYST CA
90° duct bend.
Available in 2 dimensions: Ø125 and Ø160 mm.



Supply air kit – Supply Air Kit-125
Supply air kit containing CLA sound attenuator, Ø125 mm and sleeve.

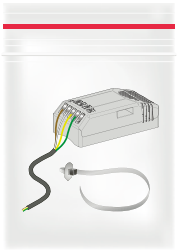


Extract air kit – Extract Air Kit CAV-CRP-125
Extract air kit for CAV containing CLA sound attenuator, Ø125, manual commissioning damper, EXC extract air diffuser.



Accessory kits

SYST PCS-KIT



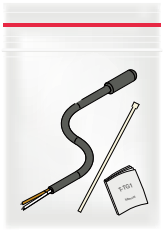
SYST PCS condensation sensor and fastening components for retrofitting.

The detector operates at the dew point temperature rather than a fixed relative humidity value.

The dew point is calculated from a temperature-compensated RH element and an extremely accurate sensor element thermally bonded to the detector's metal plate.

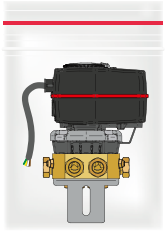
For more information, see separate product data sheet on www.swegon.com.

Temperature sensor – T-TG-1



Kit with temperature sensor and cable ties for fastening.

CCO-Kit (valve + damper)



Compact change-over valve for maximum utilization of the coil.

Specification

PARAGON Wall comfort module for cooling, heating, ventilation and control.

Scope of supply

Swegon's scope of supply ends at the water connection point.

At the connection points, the pipe contractor connects to the plain pipe end and/or external valve thread, fills the system, vents it and pressure-tests it.

The ventilation contractor connects to the duct connection with the dimension shown in the Dimensions and weight chapter *Dimensions and weight*.

The electrical contractor provides a 24 V AC power supply or an earthed 230 V socket for the transformer and, where required, a wall-mounted junction box for the room thermostat.

The building contractor makes openings in the corridor wall for the supply air duct, in internal walls and ceilings for supply and extract air grilles, and in the bathroom ceiling for the extract air duct.

The electrical contractor connects the power (24 V) and signal cables to the terminal block with spring-loaded push connections.

Maximum cable area is 2.5 mm^2. For reliable operation, ferruled cable ends are recommended.

Ordering specification

PARAGON Wall

PARAGON Wall	e	aaaa-	bb-	cc-	ddddd

Version:

Length (mm): 800, 1100 and 1400

Function:

A = Cooling (water)
B = Cooling and heating (water)

X1 = Cooling and electric heating
Length: 800 = 350W
Length: 1100/1400 = 500W

X2 = Cooling and electric heating
Length: 800 = 700W
Length: 1100/1400 = 1000W

Connection side for water (viewed from the rear of the product):

R = Right
L = Left

Air connection:

125 = Ø125 (standard)

Accessories

Grille	PARAGON W	e	SG/RG-	bbbb	ccccccc

Version:

Supply- and return grille

Product length (mm): 800, 1100, 1400

Colour: STD (RAL9003), RAL9010, RAL7037, RAL9005, RAL9006, RAL9007, COLOR (Special)

Assembly fitting	SYST MS M8	aaaa-	b

Threaded rod length (mm): 200; 500; 1000

Type:

1 = One threaded rod
2 = Two threaded rods and one thread lock

Specification text

Example specification text according to VVS AMA.

PCT.312 Duct-connected chilled beams.

PTD.4 Duct-connected room units for heating and cooling.

KB XX

PARAGON Wall comfort module with integrated supply air damper. Designed for rear-edge installation in ceiling/ wall with the following functions:

- Waterborne cooling.
- Waterborne heating or electric heating.
- Ventilation.
- ADC comfort function with adjustable setting ±30 degrees.
- Duct connection Ø125 mm.
- Integrated recirculation air opening in the lower section.
- Coil and any control equipment accessible from the rear of the product or via the return air grille.
- Cleanable.
- Fixed measuring point with tube.
- Eurovent certified.
- Grille in standard colour RAL 9003.

Contract boundary at the water and air connection points according to the schematic drawing.

- At the connection points, the pipe contractor connects to the 12 mm plain pipe end, after which the ventilation contractor connects to the Ø125 mm connection sleeve.
- The pipe contractor fills, vents and pressure-tests the system and is responsible for ensuring that the design water flows reach each system branch and unit.
- The ventilation contractor commissions the design airflows.

Swegon reserves the right to alter specifications.