PARAGON

Compact comfort module for hotels and hospital wards

QUICK FACTS

- Ventilation, cooling and heating (water or electricity)
- Constant flow product with adjuster knob for quick and easy regulation of a constant air flow from the slot openings
- The product can also be integrated in the WISE system as a constant flow module with control of water valves
- Straightforward installation with optional water connection side and centred air connection
- Also available with optional factory-fitted control equipment
- Adjustable air direction ADC and adjustable grille louvres
- Low installation height
- High capacity

KEY FIGURES					
Air flow range:		Pressure range:	Cooling capacity total:	Heating capacity: (W)	
l/s	m³/h	Pa	W	Water	Electricity
0 - 85	0 - 306	20 - 200	Up to 3180	Up to 5060	1000

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

Content

Technical description

Comfort module PARAGON

PARAGON is a constant flow product with adjuster knob for quick and easy control of a constant air flow from the slot openings.

New Paragon can also be integrated in the WISE system as a constant flow module with control of water valves.

The compact comfort module is primarily designed for hotels and hospitals but can also be installed in offices.

PARAGON provides high cooling/heating capacity through optimal utilisation of its cooling/heating coil already while the air pressure and airflows are low. At the same time, the installation height of the product is kept at an absolute minimum which enables maximum room height in e.g. the entrance to a hotel room.

Figure 1. PARAGON, front view

Figure 2. PARAGON, rear view

PARAGON in a nutshell

- Optional factory fitted control equipment
- Low flow-generated noise level
- Draught-free indoor climate
- Straightforward installation with two optional water connection sides and centred air connection
- No fan in the room
- Dry system without condensation
- No need for any drainage system
- No filter
- Requires minimal maintenance
- Low energy consumption
- Guaranteed comfort through flexible adjustment of the direction of air discharge (ADC)
- Can be ordered with or without grille
- Upgradable to VAV and DCV

Design

The PARAGON is available in the following variants:

Variant A:	Ventilation, waterborne cooling
Variant B:	Ventilation, water-based cooling and heating from a coil
Variant X:	Ventilation, waterborne cooling and electric heating

Sizes and variants

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

All sizes can be ordered with the water connection on the left or right short side, and there is also a variant with a centred water connection at the rear.

In addition to the standard version, Swegon now also has a Suite version for larger rooms. It has double air connections and is only available in length 1400 mm.

EUROVENT CERTIFIED PERFORMANCE
www.eurovent-certification.com

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

Basic function diagram

The primary air is supplied via duct connection in the rear edge of the unit and this builds up positive pressure inside the unit. The positive pressure distributes the primary air with relatively high velocity via the slot openings. The high velocity of the primary air creates negative pressure which generates induction of the room air. The recirculation air is sucked up through the recirculation grille of the unit and flows on through the coil where it is cooled, heated, if required, or just passes untreated, before it mixes with the primary air and is discharged into the room.

Our new generation PARAGON has variable k-factor setting and large air flow range.

The supply air discharged into the room is advantageously distributed as straight as possible by allowing it to follow the ceiling, i.e. utilising the Coanda effect. This enables the air to reach all the way to the perimeter wall. If you want to distribute the air horizontally, you can easily do so using ADC (Anti Draught Control), which is included as standard in the PARAGON comfort module. If vertical air distribution is desirable, this is achieved by setting the outlet grille vanes to slant upward or downward. The angle setting of the outlet grille can be locked using an accessory that secures the slats.

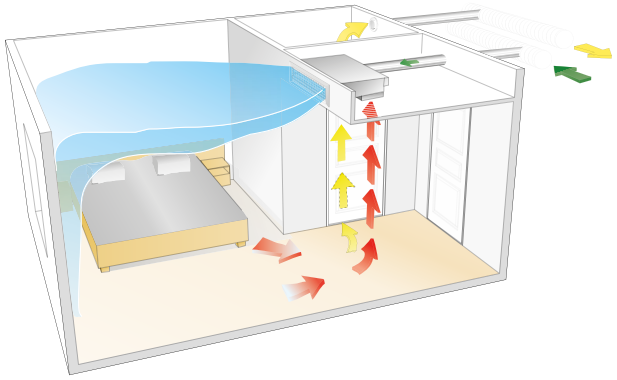


Figure 3 – Air distribution with the PARAGON in a hotel room

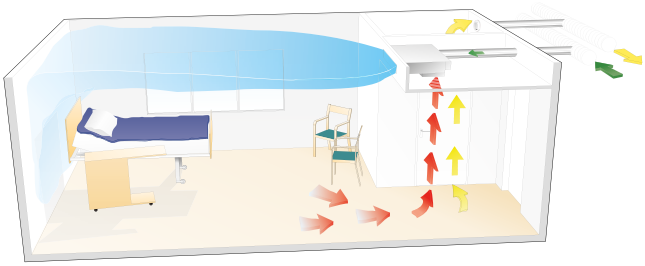


Figure 4 – Air distribution with PARAGON in care room

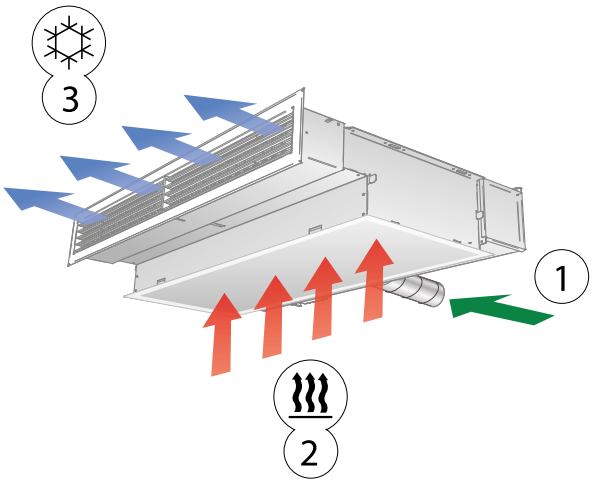


Figure 5 – Cooling function PARAGON
1 = Primary air
2 = Induced room air
3 = Primary air mixed with cooled room air

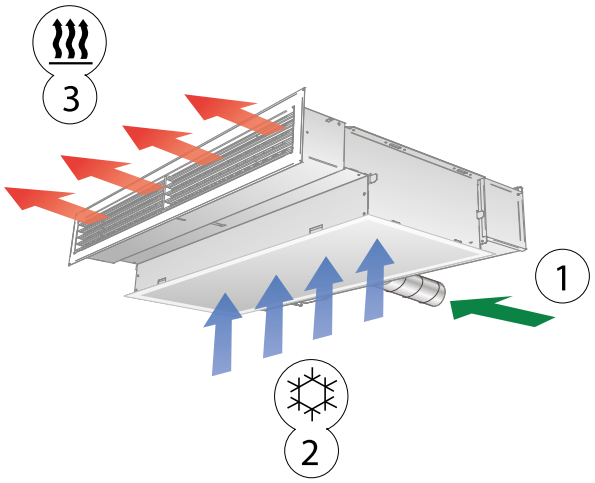


Figure 6. Heating function PARAGON (waterborne) also includes cooling function
1 = Primary air
2 = Induced room air
3 = Primary air mixed with heated room air

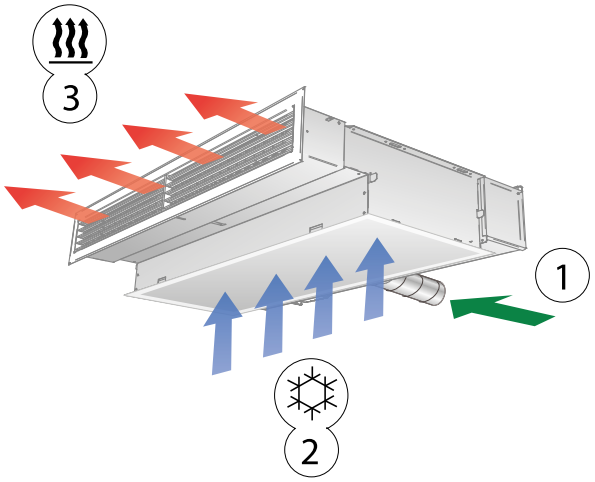


Figure 7. Heating function PARAGON (electric heating) also includes cooling function
1 = Primary air
2 = Induced room air
3 = Primary air mixed with heated room air

Swegon reserves the right to alter specifications.

Air distribution

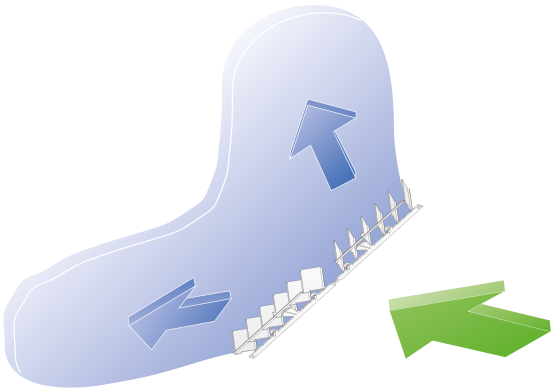


Figure 8 – Horizontal air distribution with ADC

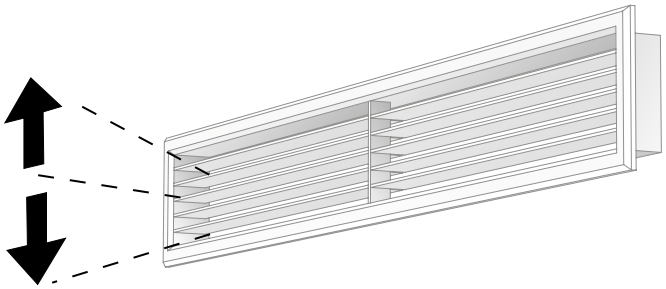


Figure 10. Vertical air distribution with adjustable louvres in the supply air grille.

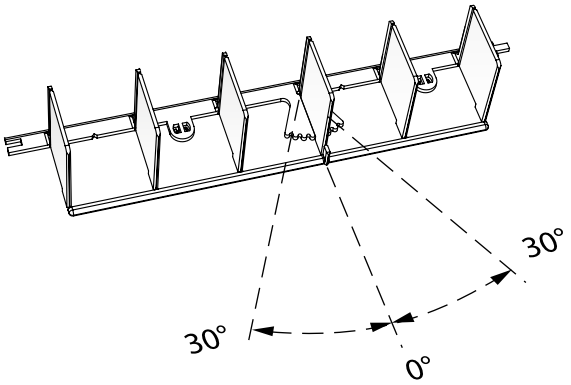


Figure 9. PARAGON ADC

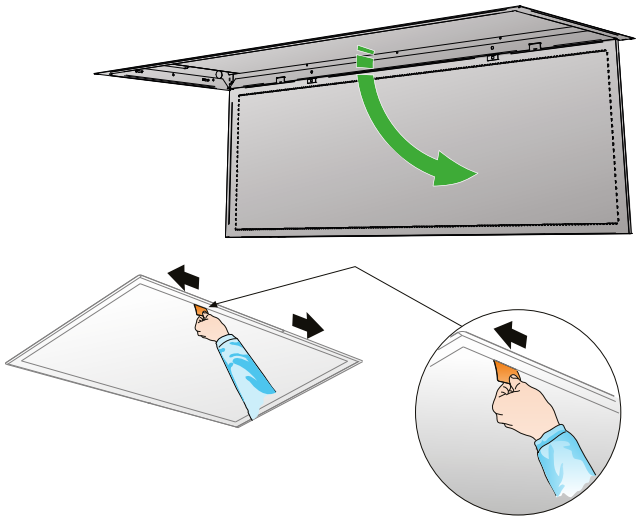


Figure 11. The return air grille has a Quick access function, which facilitates cleaning.

Control equipment

PARAGON is available with different control options that can be adapted to the true requirement and occupancy level in the hotel.

PARAGON is a constant flow product that in the standard design has a setting knob for easy and fast regulation of a constant air flow from the slot openings.

The product can also be integrated in the WISE system as a constant flow module with control of the water valves.

As standard, the product has a setting knob and two optional water connection sides and is also available with optional factory-fitted control equipment.

Factory-fitted optional extras

Factory-fitted control equipment makes the installation work simple. All components are accessible from the back of the product.

A selection of our optional factory-fitted extras:
Terminal block is included when a factory-fitted accessory is installed

Module Controller	Wiring terminal
Valve cooling	VDN215 Straight valve
Valve heating	VDN215 Straight valve
Actuator cooling	ACTUATOR 24 V NC
Actuator heating	ACTUATOR 24 V NC
Condensation sensor	CG IV
	WCD2

Read more about our factory-fitted options, kits and loose accessories in the "Accessories" section.

Also see the product sheet PARAGON VAV and WISE PARAGON on our website www.swegon.com.

Figure 12. PARAGON with water connection on the right-hand side.

Figure 13. PARAGON with water connection on the left-hand side.

Swegon reserves the right to alter specifications.

Different types of control equipment

CAV- Control equipment LUNA d MB

In applications where the user does not want demand-controlled ventilation in the room, and has no need of communication with an external master system, a simpler form of control equipment is available. This variant of control is called LUNA and regulates the temperature in the room only (not the air quality). PARAGON can be ordered with factory-mounted terminal block as well as with the loose room accessory LUNAd RE. Note that a cable connection is required between the terminal block and the actuator on PARAGON and between the terminal block and LUNAd RE in the room.

Figure 14. LUNAd RE and LUNA T-CU

Versatile room controller for temperature control of air, heating and cooling

- Built-in temperature sensor and the possibility to connect an external temperature sensor
- Built-in communication port for connection to a communication bus (Modbus RTU over RS485), for reading values from a computer
- Inputs for condensation sensor or occupancy detector
- Four outputs to control heating and cooling actuators
- Three different operating modes (day, night and economy)
- If necessary, the settings can be easily changed with the help of the hand-held terminal LUNA d T-CU.

For more information, see the separate product sheet and manual for LUNAd.

Figure 15. VAV controller for demand-controlled ventilation

VAV - Control equipment for demand-controlled ventilation, heating and cooling

Occupancy in hotel rooms varies daily, but also throughout the day. The room has different needs depending on both occupancy/non-occupancy, but also individual needs depending on the individual in the room. For hotel rooms with a master system, our functional VAV controller is the best solution. It ensures the right air flow into the hotel room by means of numerous I/Os integrated into a BMS system via Modbus.

The needs of the room are managed by different sensors in the room where the controller sets different operating modes. When for example the key card (or equivalent) is activated in the room, the air flow increases from the economical low flow to the normal flow, while the temperature adjusts to the comfort level. When the room is empty, the ventilation and temperature return to economic low flow. In addition to the automatic room control, the guest can manually adjust the temperature and the air flow.

The product can be upgraded using upgrade kits but is best ordered with factory-installed VAV control equipment. See the PARAGON VAV product sheet.

Technical data

Cooling capacity total, max.	3180 W
Heating capacity, water, max.	5060 W
Heating capacity, electricity, max.	1000 W
Air flow	0-85 l/s
	0-306 m^3/h
Pressure range	20-200 Pa
Dimensions: Size 800, 1100, 1400	722 (+0-20)/205 mm

See the dimensional drawing for exact measurements

Power consumption

Power consumption for transformer sizing:	VA / unit
Actuator	6
Damper motor (315C) *	2
Controller (VAV) *	2
Sensor module (VAV) *	1

** Optional Extras*

Example A:
PARAGON d 1100-B; = 6 VA
6 VA for cooling - OR heating actuator when they are normally regulated in sequence.
Example B:
PARAGON d 1100-B; 6+6 = 12 VA
For operating modes such as Radiator Heat and Cold draught protection power consumption will then be 6+6 VA for actuators when they are not regulated in sequence.

Designations

P: Capacity (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 difference $[t_r–t_m]$ (K)

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

ΔT_i: Temperature difference, 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

Recommended limit values, water

Max. recommended operating pressure (across coil only):	1600 kPa *
Max. recommended test pressure (across coil only):	2400 kPa *

** Applicable without control equipment mounted*

Max. recommended pressure drop across the CCO valve:	20 kPa
Max. recommended pressure drop across a standard valve:	20 kPa
Min. permissible heating water flow:	0.013 l/s
Max. permissible supply flow temperature:	60 °C
Min. permissible cooling water flow:	0.04 l/s
Lowest permissible supply flow temperature:	Should always be dimensioned so that the system works without condensation

Swegon reserves the right to alter specifications.

Sizing

Easy and quick calculation of room products

Single Product Calculator "SPC" is a simple quick calculation for room products. Capacities, sounds, flows, isovels, etc. can be calculated and printouts can be made.

SPC is accessible from our product pages at www.swegon.se where there is a "Calculate" button. No login or software download needed, incredibly quick and easy!

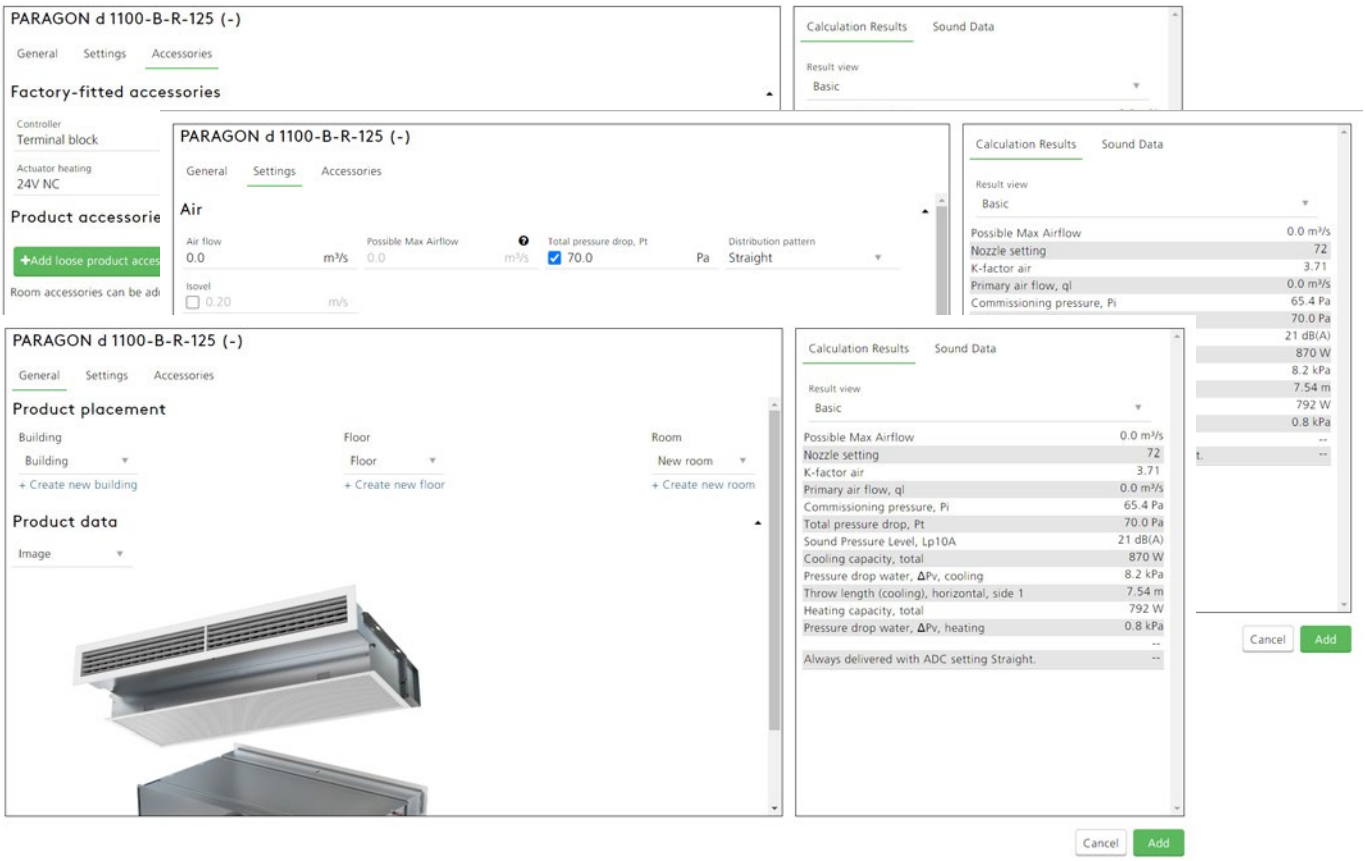


Figure 16. Calculations in SPC

Typical room

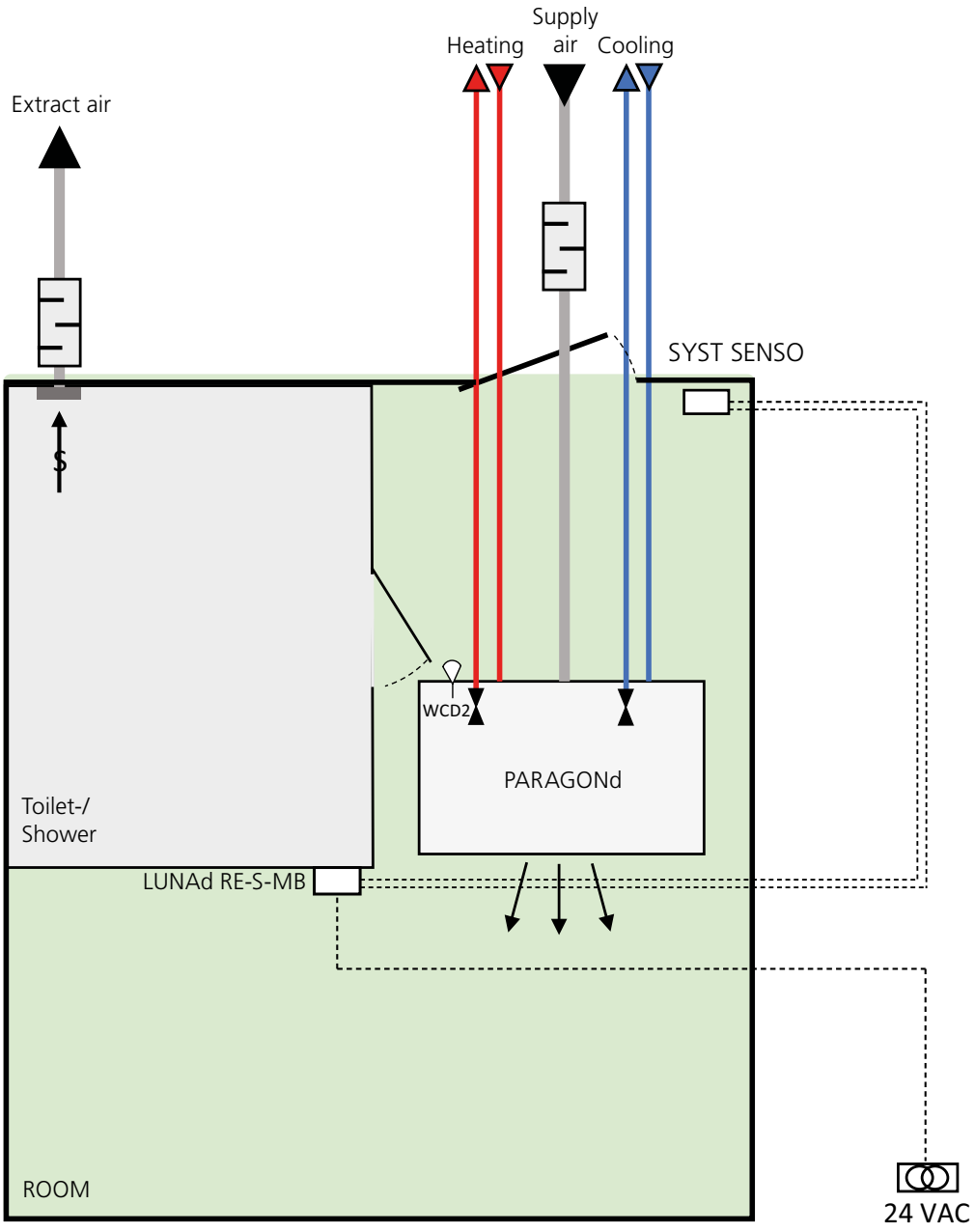
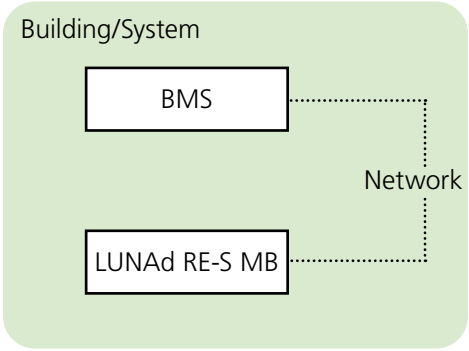


Figure 17. Hotel solution with PARAGON d

- *Wall-mounted controller LUNAd RE-S MB, communicates via cable with Modbus, controls valve actuators*
- *WCD2 Condensation prevention sensor*



Swegon reserves the right to alter specifications.

Cooling

Cooling capacity

Table 1-2 shows the cooling capacities achieved from both the primary air and chilled water for various lengths of unit and air flows.

The total cooling capacity for one unit is the sum of the cooling capacity of the primary air and the chilled water.

Table 1 – Cooling capacity, 70 Pa

Length of the Unit	Air flow		Sound level 1)	Cooling capacity air (W) at ΔT				Cooling capacity water (W) at ΔT_{mk} 2)							Pressure drop constant, air
mm	l/s	m3/h	dB(A)	6	8	10	12	6	7	8	9	10	11	12	k
800	8.4	30.1	<20	60	80	100	120	214	250	285	320	356	391	427	1
800	16.7	60.2	<20	120	161	201	241	319	370	422	473	524	575	626	2
800	27.6	99.4	22	199	265	331	398	360	420	480	540	600	659	719	3.3
1100	8.4	30.1	<20	60	80	100	120	236	274	311	349	386	423	460	1
1100	25.1	90.4	<20	181	241	301	361	445	519	594	668	743	818	893	3
1100	39.3	141.6	27	283	378	472	566	512	599	687	774	862	949	1037	4.7
1400	8.4	30.1	<20	60	80	100	120	263	306	348	391	433	475	517	1
1400	25.1	90.4	<20	181	241	301	361	497	581	665	749	833	917	1002	3
1400	50.2	180.7	29	361	482	602	723	612	717	822	927	1033	1139	1245	6

Table 2 – Cooling capacity, 100 Pa

Length of the Unit	Air flow		Sound level 1)	Cooling capacity air (W) at ΔT				Cooling capacity water (W) at ΔT_{mk} 2)							Pressure drop constant, air
mm	l/s	m^3/h	dB(A)	6	8	10	12	6	7	8	9	10	11	12	k
800	10	36	21	72	96	120	144	258	302	345	389	432	476	520	1
800	20	72	21	144	192	240	288	373	435	496	556	617	678	738	2
800	33	118.8	27	238	317	396	475	423	493	562	630	699	768	836	3.3
1100	10	36	21	72	96	120	144	297	344	390	437	483	529	574	1
1100	30	108	25	216	288	360	432	524	613	703	793	883	974	1064	3
1100	47	169.2	32	338	451	564	677	596	697	799	901	1003	1105	1207	4.7
1400	10	36	22	72	96	120	144	324	378	433	487	542	597	651	1
1400	30	108	24	216	288	360	432	585	684	784	883	983	1082	1182	3
1400	60	216	35	432	576	720	864	715	833	950	1068	1185	1302	1419	6

1) Room attenuation = 4 dB

2) The specified capacities are based on a complete unit including standard distribution and recirculation grille.

Without grille the water capacity increases by approx. 5%. With ADC adjusted to Fan shape you lose approx. 5% in water capacity. The primary air capacity is not affected.

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

Heating

Heating capacity

Table 3 – Heating capacity, 70 Pa

Length of the Unit	Air flow		Sound level 1)	Heating capacity water (W) at ΔT_{mk}							Pressure drop constant, air
mm	l/s	m³/h	dB(A)	5	10	15	20	25	30	35	k
800	8.4	30.1	<20	101	214	332	453	576	702	829	1
800	16.7	60.2	<20	129	274	425	580	738	899	1063	2
800	27.6	99.4	22	125	261	402	546	692	840	989	3.3
1100	8.4	30.1	<20	98	207	319	434	552	671	791	1
1100	25.1	90.4	<20	191	397	608	823	1041	1261	1483	3
1100	39.3	141.6	27	180	376	577	782	990	1201	1414	4.7
1400	8.4	30.1	<20	118	249	384	523	664	808	953	1
1400	25.1	90.4	<20	191	400	615	836	1060	1287	1517	3
1400	50.2	180.7	29	217	453	696	945	1198	1454	1713	6

Table 4 – Heating capacity, 100 Pa

Length of the Unit	Air flow		Sound level 1)	Heating capacity water (W) at ΔT_{mv}							Pressure drop constant, air
mm	l/s	m³/h	dB(A)	5	10	15	20	25	30	35	k
800	10.0	36.0	21	101	214	332	453	576	702	829	1
800	20.0	72.0	21	129	274	425	580	738	899	1063	2
800	33.0	118.8	27	138	288	444	604	766	931	1097	3.3
1100	10.0	36.0	21	114	238	366	498	631	767	903	1
1100	30.0	108.0	25	210	437	671	910	1152	1397	1644	3
1100	47.0	169.2	32	202	420	645	874	1106	1340	1577	4.7
1400	10.0	36.0	22	136	287	444	604	768	935	1103	1
1400	30.0	108.0	24	217	452	694	940	1191	1444	1700	3
1400	60.0	216.0	35	240	503	774	1052	1334	1620	1909	6

1) Room attenuation = 4 dB

Swegon reserves the right to alter specifications.

K-factor setting

You can easily set the required k-factor with the help of the knob located on the back.

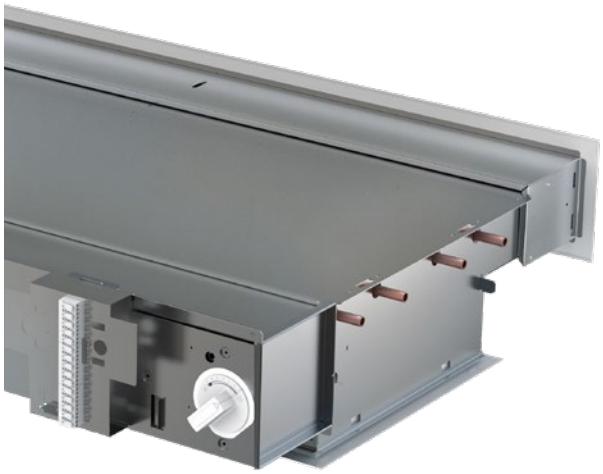


Figure 18. Knob placement

Example: To achieve the required flow of 25 l/s at 100 Pa, requires k-factor 2.5

A: Find the product's length from the left-hand side of the k-factor table.

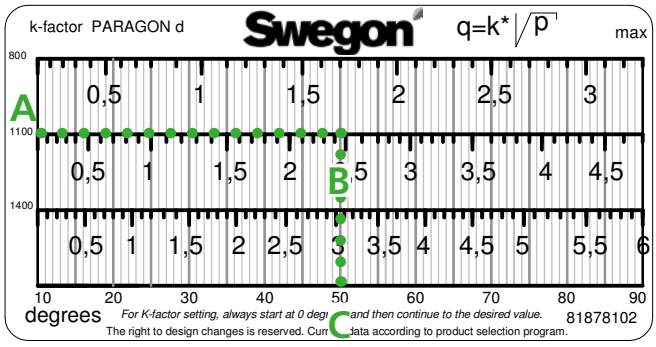
B: Read the required k-factor on the row in question.

C: Follow the vertical row and read the number of degrees at the bottom.

D: Loosen the screw located in the knob's groove (the knob then moves to the fully open position, 90°) Turn the knob until the marking "D" reaches the required number of degrees.

E: In the example from the table for a PARAGON with length 1100, ø125, k-factor 2.5, turn the knob to 50°.

K-factor table



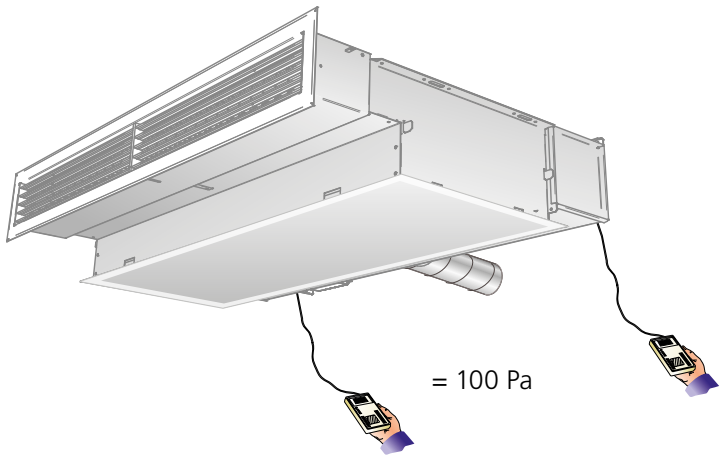
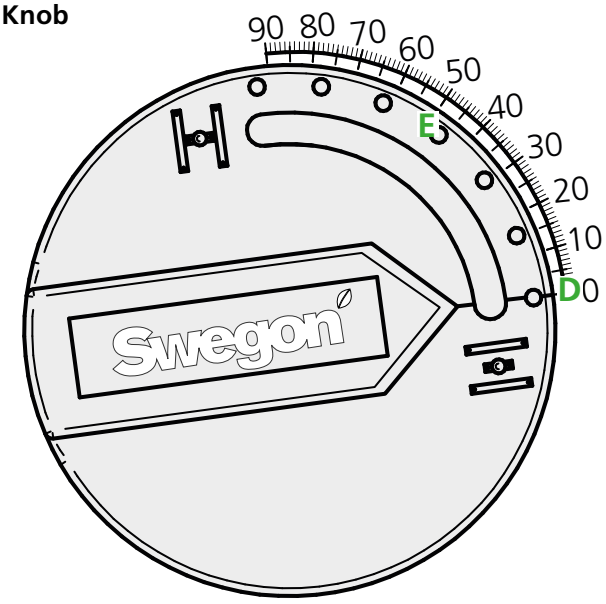


Figure 19. Location of measuring hoses

Knob



$$p_i = \left(\frac{q}{k}\right)^2 \; [Pa]$$

$$q = k \cdot \sqrt{p_i} \; [l/s]$$

$$\frac{q}{\sqrt{p_i}} = k$$

p_i [Pa]
q [l/s]
k = k-factor

Installation

Suspension

PARAGON has two holes on each short side for hanging and is mounted with a threaded rod in each hole.

For installation use the assembly fitting containing threaded rods, ceiling brackets and nuts to all four mounting brackets. Threaded rod length from 200 mm. In the event of large distances between ceiling and unit, double threaded rods with thread locks are used. Assembly fittings SYST MS M8 (Figure 21) are ordered separately.

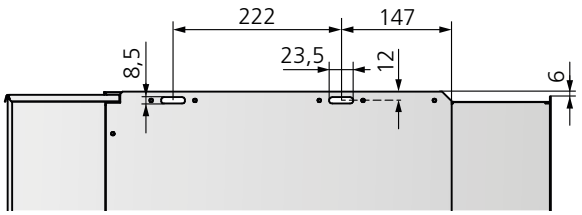


Figure 20. Dimensions suspension

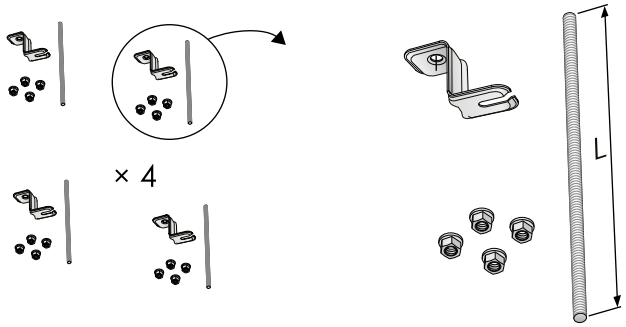


Figure 21. Assembly fitting SYST MS M8-1, ceiling mount and threaded rod

Installation

The work involving the casing can begin once PARAGON has been fully installed. The PARAGON is designed for use in most common types of load-carrying T-grid ceiling systems with panels, plaster board, etc. To simplify the work, detailed cut-out dimensions are given in separate installation instructions at www.swegon.com.

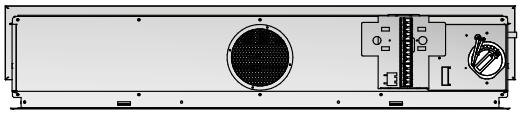
Air connection

All variants have the air connection Ø125.

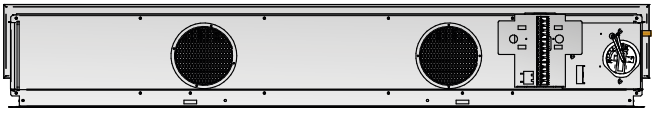
The standard variant has the air connection centred at the rear of the product for easy access from both ends and the rear and to avoid confusing the units logistically on site.

The suite version, which is only available in 1400 mm length, has two parallel air connections at the rear, i.e. 2x Ø125.

Standard variant



Suite variant



Connection dimensions, air

Variant	Length	Air connection	
	(mm)	1 x Ø 125	2 x Ø 125
1: Standard	600, 1100, 1400	Yes	No
2: Suite	1400	No	Yes

Swegon reserves the right to alter specifications.

Connection - Water

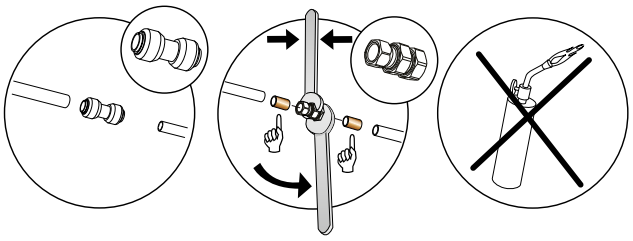
Connection sizes

Standard variant with factory-fitted valves:

Length	Cooling	Heating
(mm)	Return	Return
800, 1100, 1400	DN15 male thread	DN15 male thread

Standard variant without factory fitted valves:

Length	Cooling	Heating
(mm)	Supply and return	Supply and return
800, 1100, 1400	plain pipe ends	plain pipe ends
	(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.

Connection of water

The water pipes are placed on the left or right short side of the product depending on the choice made, there is also a variant with a water connection at the rear (WB).

Connect the water pipes using push-on couplings or clamping ring couplings.

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 unit's existing soldered joints.

Flexible connecting hoses for water are available for flat-end pipes and valves, and can be ordered separately.

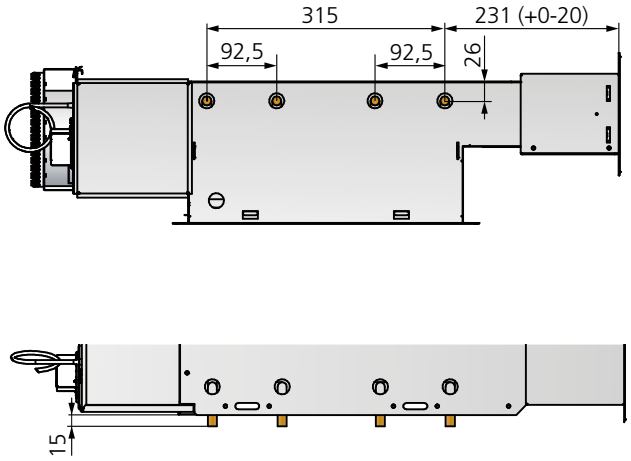
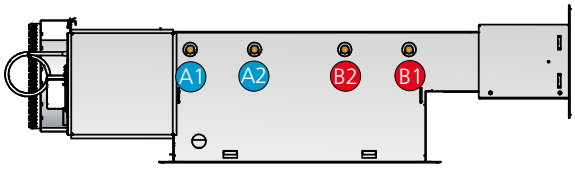


Figure 23. Dimensions suspension

Water connection on the right-hand side "R"

Cooling and heating R. all sizes



Cooling R, all sizes

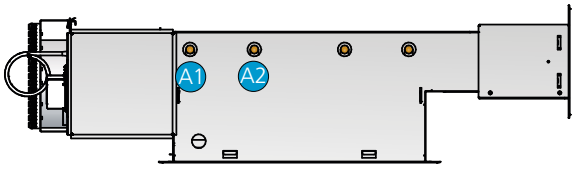
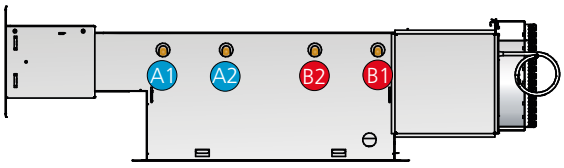


Figure 22. Water connection on the right-hand side (R).
A1 = Cooling water, supply
A2 = Cooling water, return
B1 = Heating water, supply
B2 = Heating water, return

Water connection on the left-hand side "L"

Cooling and heating L. all sizes



Cooling L, all sizes

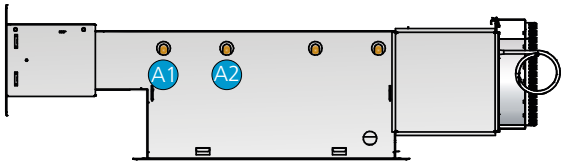


Figure 24. Water connection on the left-hand side (L).
A1 = Cooling water, supply
A2 = Cooling water, return
B1 = Heating water, supply
B2 = Heating water, return

Rear edge solution

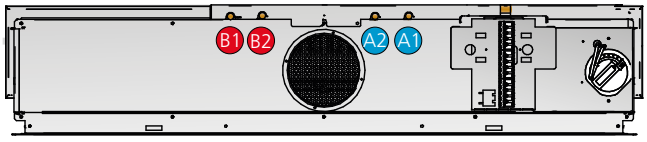


Figure 25. Water connection, Rear edge (WB)
A1 = Cooling water, supply
A2 = Cooling water, return
B1 = Heating water, supply
B2 = Heating water, return

CCO valve

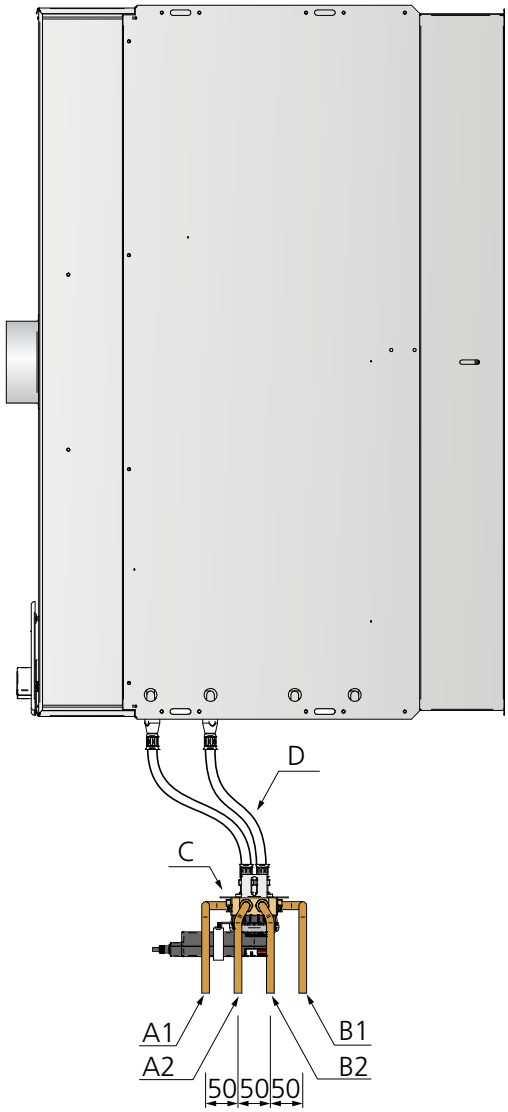
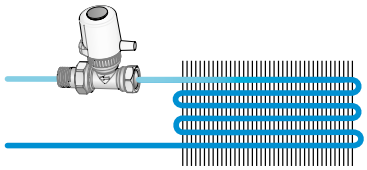


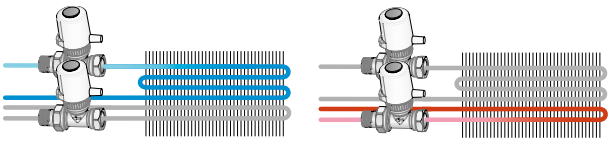
Figure 26. Water connection, CCO valve.
A1 = Cooling water, supply
A2 = Cooling water, return
B1 = Heating water, supply
B2 = Heating water, return
C = CCO valve
D = Flexible hose

PARAGON A (cooling) with valve and valve actuator

Paragon A for cooling only. The capacity of the heat exchanger is utilised optimally by maximising the cooling circuit through the coil.



PARAGON B (cooling and heating) with valve and valve actuator

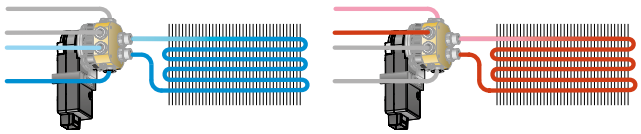


PARAGON B (cooling and heating) with CCO valve

Paragon B with CCO valve Compact Change Over is used to utilise the cooling circuit for both cooling and heating.

Advantages:

Permits a higher cooling water temperature and lower heating water temperature, which gives lower operating costs for the chiller and heat pump, i.e. less environmental impact.



For more information about the CCO valve, see the CCO product data sheet at www.swegon.se

Accessories, control

Optional factory-fitted accessories

PARAGON can be ordered with different control variants and accessories

Factory-fitted optional extras

Factory-fitted control equipment makes the installation work simple. All components are accessible from the back of the product.

A selection of our optional factory-fitted extras:
Terminal block is included when a factory-fitted accessory is installed

Module Controller	Wiring terminal
	PARAGON VAV RE
	WISE Paragon CU
Valve cooling	VDN215 Straight valve
Valve heating	VDN215 Straight valve
Actuator cooling	ACTUATOR 24 V NC
Actuator heating	ACTUATOR 24 V NC
6-way valve	CCO
Condensation sensor	CG IV
	WCD2
Temperature sensor	T-TG-1
Air quality sensor	WISE SMA

In addition to the factory-installed options, loose accessories and kits (not factory-fitted) are also available:
Kits and accessories are easily mounted during installation

A selection of our optional loose kits and accessories:

Control unit/controller	Wiring terminal
	PARAGON VAV RE
	WISE PARAGON CU
	LUNA RE
Pressure sensor	SYST PS
Valve cooling	SYST VDN 215 Straight valve
Valve heating	SYST VDN 215 Straight valve
Actuator cooling	ACTUATOR 24 V NC
Actuator heating	ACTUATOR 24 V NC
Valve 6-way	CCO-kit
Condensation sensor	Condensation sensor CG-IV-KIT
	WCD2-KIT
Temperature sensor	Temp. sensor T-TG-1
	Dew-point KIT WISE Paragon
Air quality sensor	CO_2-Kit, Detect Qa
	VOC-Kit, Detect VOC-2
Temp./Occupancy detector	VAV sensor, (wall) -kit

Accessories, factory-fitted

Wiring terminal
It's possible to control the temperature in the room, (not air quality) with a factory-fitted terminal block as well as with the loose room accessory LUNAd RE.

VAV RE controller
VAV controller for demand-controlled ventilation

WISE CU control unit

For integration in the WISE system as a constant flow module with control of water valves.

Valve, cooling & heating, SYST VDN 215
Factory fitted valves for cooling and heating.

The valve is mounted on the product and preset fully open.

Function	Type	Dim.	K_v(m³/h)
Cooling/ heating	VDN215	DN15 (½")	0.07-0.89

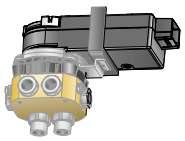
For more information about the valve, see the separate product data sheet on www.swegon.com.

Actuator cooling & heating, ACTUATO 24 V NC
Factory fitted valve actuators for cooling and heating.

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

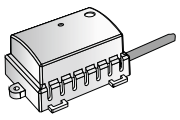
For more information about the actuator, see the separate product data sheet on www.swegon.com.

6-way valve, CCO
Compact Change Over valve, for maximum utilisation of the coil and thus high cooling and heating capacity.



Condensation sensor, WCD2
The detector operates at the dew point temperature rather than a fixed relative humidity value.

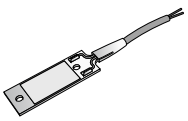
The dew-point is calculated from a temperature compensated RH element and an extremely accurate sensor element that is bound to the metal plate on the detector.



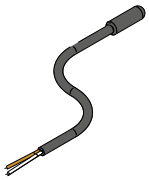
Condensation sensor, CG IV
The condensation sensor is supplied fitted and connected from the factory. The actual sensor element consists of a circuit board with gold plated conductive paths that react when condensation occurs between these. When condensation arises, the cooling valve closes the incoming water flow to the product. When the condensation on the conductive paths has been wiped off, the cooling valve is permitted to open again.

The sensor is positioned on the coil fins by the cooling supply.

For more information about the condensation sensor, see the separate product data sheet on www.swegon.com.

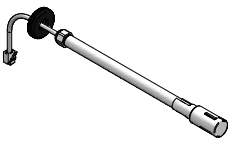


Temperature sensor, T-TG-1
For measurement of the temperature



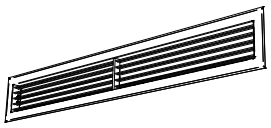
Co_2 sensor. Detect Qa
Analogue carbon dioxide sensor that is mounted concealed, above the extract air grille.
See separate product sheet at www.swegon.com.

VOC sensor Detect VOC
Modbus connected air quality sensor that is mounted concealed above the extract air grille



Loose accessories

Supply air grille, PARAGON T-SG
Front grille for PARAGON, available for products with the length, 800, 1100, 1400 mm



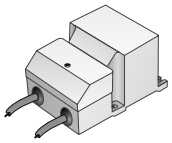
Grille lock, PARAGON T- GL
Grille lock for fixing the position of the supply air grille.

Return grille, PARAGON T-RG
Return grille for PARAGON, available for products with the length, 800, 1100, 1400 mm

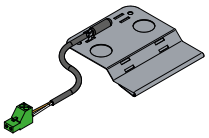
Transformer, Power ADAPT 20 VA (ARV)
Input voltage 230 V, 50-60 Hz, Output voltage 24 V AC
Power 20 VA, Enclosure IP33

Transformer, SYST TS-1
Double-insulated protective transformer 230 V, 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 the separate product data sheet on www.swegon.com.



Temperature sensor, T-TG-1
External temperature sensor. Used for example if the room temperature must be measured elsewhere than at the sensor module, or to measure the temperature of the main pipe in change-over systems.



Valve, SYST VDN 215
Straight valves for cooling and heating.

VDN215 is preset fully open on K_v 0.89.

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

Function	Type	Dim.	K_v(m^3/h)
Cooling/ heating	VDN215	DN15 (½")	0.07-0.89

Valve actuator cooling & heating, ACTUATOR 24 V NC
Valve actuators for cooling and heating.

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

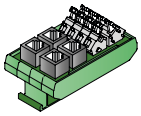
For more information about the actuator, see the separate product data sheet on www.swegon.com.

Card switch, SYST SENSO II
Key card holder for hotel rooms.

Cable, SYST CABLE RJ12 6-LED.
Cable for the connection of an external sensor module to the controller or between sensor modules. Available in different standard lengths.

Cable, CABLE CONVERTER USB-RJ12 (RS485)
Cable with integrated modem to connect a PC to the controller.
Needed to run e.g. SWICCT or ModbusPoll.

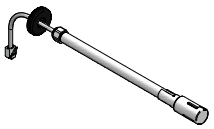
Cable adapter ADAPTER RJ12-WIRE



LINK Wise
Network cable for Modbus communication in the WISE system.
The cable conforms to EIA 485 standard. Shielded four conductor AWG 24, external diameter Ø 9.6 mm, Grey PVC. The cable is only supplied in reels of 500 m.

Co_2 sensor. Detect Qa
Analogue carbon dioxide sensor that is mounted concealed, above the face plate.
See separate product datasheet at www.swegon.com.

VOC sensor Detect VOC
Modbus connected air quality sensor that is mounted concealed above the face plate.



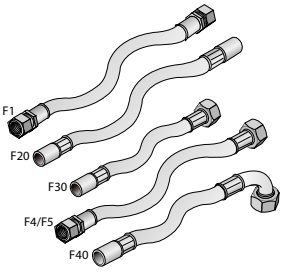
Assembly fitting, SYST MS M8
For installation use the assembly fitting containing threaded rods, ceiling brackets and nuts to all four mounting brackets.

Threaded rod length from 200 mm. In the event of large distances between ceiling and unit, double threaded rods with thread locks are used.

Flexible connection hoses, SYST FH

Flexible hoses are available with quick-fit, push-on couplings as well as clamping ring couplings for quick and simply connection. The hoses are also available in various lengths. Note that compression ring couplings require support sleeves inside the pipes.

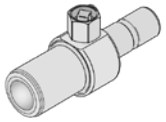
Flexible hoses also reduce the risk of movement in the piping system due to thermal expansion.



F1 = Clamping ring couplings at both ends.
F20 = Push-on couplings at both ends.
F30 = Push-on coupling at one end and union nut G20ID at the other end.
F4/F5 = Clamping ring coupling at one end and union nut with flat seal at the other end.
F40 = Push-on coupling at one end, union nut 90° at the other end.

Venting nipple, SYST AR-12

A venting nipple is available as a complement to the flexible hoses with push-on couplings. The venting nipple fits directly in the push-on hose coupling and can be fitted in an instant.



Connection piece, air – insertion joint, SYST AD1

SYST AD1 is used as a joint between PARAGON VAV and the duct system. Available in two sizes: Ø125 and Ø160 mm.

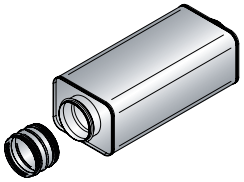
Connection piece, air, SYST CA

90° duct bend

Available in two sizes: Ø125 and Ø160 mm.

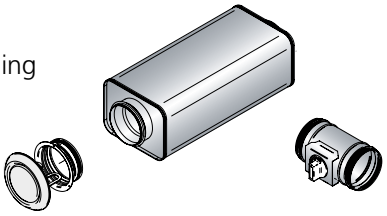
Supply Air Kit-125

Supply air kit contains sound attenuator CLA, d=125 mm and sleeve.



Extract Air Kit CAV-CRP-125

Extract air kit for CAV containing sound attenuator CLA, d=125, manual commissioning damper, control valve EXC.



Swegon reserves the right to alter specifications.

Accessory kits

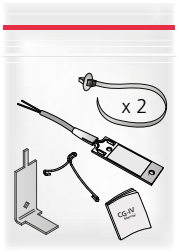
Condensation sensor, Condensation sensor CG-IV-KIT

Condensation sensor CG-IV and assembly parts for retrofitting.

The condensation sensor's sensor element consists of a circuit board with gold plated conductive paths that react when condensation occurs between these. When condensation arises, the cooling valve closes the incoming water flow to the product. When the condensation on the conductive paths has been wiped off, the cooling valve is permitted to open again.

Sensor is positioned on the coil fins by the cooling supply.

For more information about the condensation sensor, see the separate product data sheet on www.swegon.com.



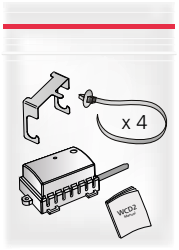
Condensation sensor WCD2-KIT

Condensation sensor WCD2 and assembly parts 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 that is bound to the metal plate on the detector.

For more information about the condensation sensor, see the separate product data sheet and installation instructions on www.swegon.com.

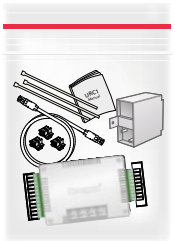


Temp. sensor T-TG-1

Kit med temperature sensor and cable ties for securing

PARAGON VAV RE-KIT

Control kit for upgrading to VAV



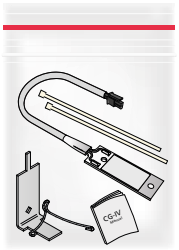
Upgrade kit for WISE

UPGRADE KITS WISE PARAGON CU

Control kit for upgrading to WISE

Upgrade kit WISE Condensation sensor CG IV-KIT

The upgrade kit contains condensation sensor, CG IV and fastening details



Upgrade kit Dew-point KIT WISE PARAGON

The upgrade kit contains the temperature sensor, WISE TEMP SENSOR PT1000

Upgrade kit WISE SMA

The upgrade kit includes WISE SMA incl. RJ12 cable and assembly plate.

Dimensions and weights

Weight

PARAGON d 800

Length	Type	Dim.	Dry weight* (kg)		Water volume (l)	
mm		Ø	Without grille	incl. grille	cooling	heating
800 R	A	125	14.0	16.9	1.39	
800 L	A	125	14.0	16.9	1.38	
800 R	B	125	14.0	16.9	1.39	0.38
800 L	B	125	14.0	16.9	1.38	0.37
800 R	X	125	14.0	16.9	1.39	
800 L	X	125	14.0	16.9	1.38	

PARAGON d 1100

Length	Type	Dim.	Dry weight* (kg)		Water volume (l)	
mm		Ø	Without grille	incl. grille	cooling	heating
1100 R	A	125	18.8	22.6	1.93	
1100 L	A	125	18.8	22.6	1.92	
1100 R	B	125	18.8	22.6	1.93	0.52
1100 L	B	125	18.8	22.6	1.92	0.51
1100 R	X	125	18.8	22.6	1.93	
1100 L	X	125	18.8	22.6	1.92	

PARAGON d 1400

Length	Type	Dim.	Dry weight* (kg)		Water volume (l)	
mm		Ø	Without grille	incl. grille	cooling	heating
1400 R	A	125	23.0	27.6	2.47	
1400 L	A	125	23.0	27.6	2.46	
1400 R	B	125	23.0	27.6	2.47	0.65
1400 L	B	125	23.0	27.6	2.46	0.64
1400 R	X	125	23.0	27.6	2.47	
1400 L	X	125	23.0	27.6	2.46	

**Added weight for air diffuser: 0.26 kg*

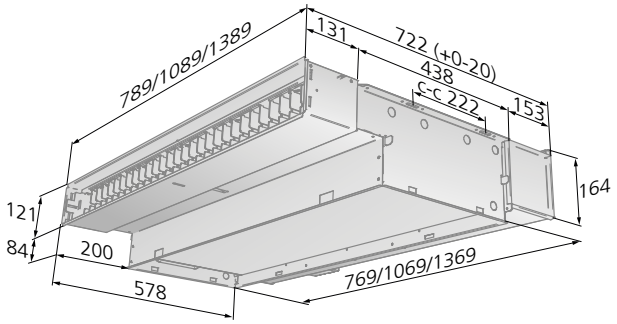


Figure 27. Dimensional drawing without grille

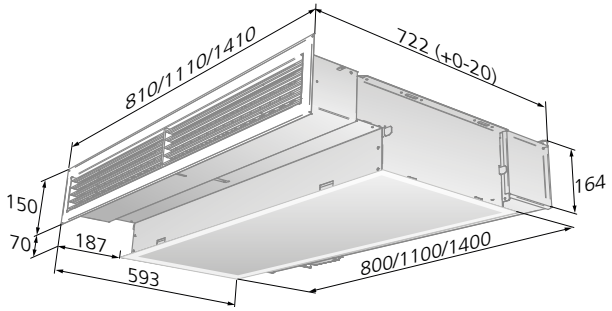


Figure 28. Dimensional drawing with grille

Specification

Specification, PARAGON

Comfort module type PARAGON for cooling, heating, ventilation and control.

PARAGON delivery demarcation

Swegon's limits of supply are at the connection points for water.

At these connection points, the RE pipework contractor connects to plain pipe end and/or male threads towards valves, 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 in the section "Dimensions".

EE electrical equipment contractor provides a 24 V AC network power supply or earthed 230 V outlets for a transformer, as well as a junction box, if required, installed in a wall for a room thermostat.

The building contractor cuts the openings in corridor wall for the supply air duct, in the interior wall and suspended ceiling for the supply air and extract air grilles and in the bathroom ceiling for the extract air duct.

The electrical contractor connects the power (24V) and signal cables to the connection terminals with spring-loaded snap-in connections.

Maximum cable cross section 2.5 mm^2. For safe operation, we recommend cable ends with ferrules.

Maintenance

Ideally the product should be cleaned twice a year by vacuuming the coil to remove loose dust.

In fibre-dense environments such as hotels, an initial cleaning is recommended, about three months after use, as new textiles usually release more fibres. Thereafter, cleaning is recommended at an interval of one to two times per year.

A simple visual inspection of connections is recommended when cleaning.

For cleaning grilles and other painted surfaces: Avoid aggressive cleaning agents which may harm painted surfaces. Normally a mild soap or alcohol solution is fully adequate for cleaning. See also previous maintenance section in the Instructions for Use.

Ordering key PARAGON

PARAGON	d	aaaa-	b-	cc-	ddddd
Version:					
Length (mm)					
800, 1100 and 1400					
Function:					
A = Cooling					
B = Cooling and heating (water)					
X = Cooling and electric heating					
Connection side - water *(seen from the back of the product)*					
R - Right					
L - Left					
WB - Centred at the rear (optional extra)					
Air connections					
125 = Ø125 (standard) 2x125 = 2Ø125 (suite, only selectable for length 1400)					

Factory-fitted optional extra

Control unit/controller	Wiring terminal
	PARAGON VAV RE
	WISE Paragon CU
Valve cooling	SYST VDN 215 Straight valve
Valve heating	SYST VDN 215 Straight valve
Valve, 6-way	CCO
Actuator cooling	ACTUATOR 24 V NC
Actuator heating	ACTUATOR 24 V NC
Condensation sensor	CG IV
	WCD2
Temp. sensor	T-TG-1
Air quality sensor	WISE SMA

Swegon reserves the right to alter specifications.

Available to order, kit and accessories

In addition to the factory-installed options, loose accessories and kits (not factory-fitted) are also available:

Kits and accessories are easily mounted during installation

Control unit/controller	Wiring terminal
	PARAGON VAV RE
	WISE PARAGON CU
	LUNA RE
Pressure sensor	SYST PS
Valve cooling	SYST VDN 215 Straight valve
Valve heating	SYST VDN 215 Straight valve
Actuator cooling	ACTUATOR 24 V NC
Actuator heating	ACTUATOR 24 V NC
Condensation sensor	Condensation sensor, CG IV-KIT
	WCD2-KIT
Temperature sensor	T-TG-1-KIT
	Dew-point KIT WISE Paragon
Air quality sensor	CO_2-Kit, Detect Qa
	VOC-Kit, Detect VOC-2
	WISE SMA
Temp./Occupancy detector	VAV sensor, (wall) -kit
Supply air grille	PARAGON T-SG
Return grille	PARAGON T-RG
Grille lock	PARAGON T-GL
Transformer	Power ADAPT 20 VA (ARV)
"	SYST TS-1
Card switch	SYST SENSO II
Assembly piece	SYST MS M8
Cable adapter	ADAPTER RJ12-WIRE
Flexible hoses	SYST FH
Venting nipple	SYST AR-12
Connection fitting, air – nipple	SYST AD1
Connection fitting, air – elbow	SYST CA
Supply air kit	Supply Air Kit-125
Return air kit	Extract Air Kit CAV-CRP-125
ADC	ADC-2-105

Ordering Key, Accessories

Grille	PARAGON d T-	aa-	bbbb
Type: SG = Supply air grille RG = Return grille			
Product length (mm): 800, 1100, 1400			

Assembly fitting	SYST MS M8	aaaa-	b
Length threaded rod (mm): 200; 500; 1000			
Type: 1=One threaded rod 2=Two threaded rods and one thread lock			

Flexible connection hose, (x1)	SYST FH F1-	aaa-	12
Compression ring (Ø12 mm) against pipe at both ends (excl. support sleeves)			
Length (mm): 300, 500, 700			

Flexible connection hose, (x1)	SYST FH F20-	aaa-	12
Quick-connector push-on (Ø12 mm) against pipe at both ends			
Length (mm): 275, 475, 675			

Flexible connection hose, (x1)	SYST FH F30-	aaa-	12
Quick-fit coupling, push-on (12 mm dia.) against pipe on one end, G20ID sleeve nut on the other end.			
Length (mm): 200, 400, 600			

Accessory kits:

- Controller KIT PARAGON VAV RE xx items
- Controller KIT TERMINAL KIT xx items
- Controller KIT WISE PARAGON CU xx items
- Controller KIT LUNA RE xx items
- Condensation sensor KIT for retrofitting Condensation sensor CG IV-KIT, xx items
- Condensation sensor for retrofitting, WCD2-KIT, xx items
- Temp. sensor, T-TG1-KIT, xx items
- Dew-point KIT WISE Paragon, xx items
- Supply air kit, Supply Air Kit-125 xx items
- Extract air kit, Extract Air Kit CAV-CRP-125 xx items
- Air quality sensor, CO2-Kit, Detect Qa, xx items
- Air quality sensor, VOC-Kit, DETECT VOC-2

Accessories:

- Supply air grille, PARAGON d-T-SG-aaaa xx items
- Return grille, PARAGON d-T-RG-aaaa xx items
- Grille lock, PARAGON T-GL xx items
- Valve cooling SYST VDN 215 xx items
- Actuator cooling ACTUATORc 24 V NC, xx items
- Transformer, POWER Adapt 20 VA, xx items
- Transformer, SYST TS-1, xx items
- Pressure sensor, SYST PS, xx items
- Card switch, SYST SENSO II, xx items
- Cable adapter, ADAPTER RJ12-WIRE, xx items
- Assembly piece, SYST MS M8 aaaa-b
- ADC for subsequent installation, SYST ADC-2-105, xx items
- Flexible connection hose, SYST FH F1 aaa- 12 xx pcs.
- Flexible connection hose, SYST FH F20 aaa- 12 xx pcs.
- Flexible connection hose, SYST FH F30 aaa- 12 xx pcs.
- Venting nipple, push-on, SYST AR-12, xx items
- Connection piece, air – nipple, SYST AD1-aaa, xx items
- Connection piece, air (90°elbow), SYST CA-aaa-90, xx items

etc.

Specify the quantities individually or with reference to the drawing.

Ordering examples

Example 1:

PARAGON in length 1100 with cooling and heating function. Water connection on the right-hand side and an air connection Ø125 and supply/extract air grilles

PARAGON d 1100-B-R-125

PARAGON d T-SG-1100

PARAGON d T-RG-1100

Example 2:

PARAGON in length 1400 in suite design with cooling and heating function. Water connection on the right-hand side and two Ø125 air connections as well as supply/extract air grilles.

PARAGON d 1400-B-R-2x125

PARAGON d T-SG-1400

PARAGON d T-RG-1400

Swegon reserves the right to alter specifications.

Specification text

Example of a specification text according to VVS AMA.

PCT.312 Duct connected chilled beams.

PTD.4 Duct connected room devices for heating and cooling

KB XX

Comfort module PARAGON with integrated supply air damper in the product. Designed for rear-edge mounting in the ceiling/wall with the following functions:

- Waterborne cooling
- Waterborne heating or electric heating
- Ventilation
- Comfort guarantee ADC with adjustable function +-30 degrees
- Ø125 mm duct connection
- Integrated circulating air opening in face plate
- Coil and control equipment, if required, accessible via the rear of the product or via the recirculating air grille
- Cleanable
- Fixed measurement tapping with hose
- Eurovent certified
- Grilles in standard colour RAL 9003

Contractor demarcation at connection point for water and air as in outline drawing.

- At the points of connection the pipe contractor connects to 12 mm plain pipe end after which the ventilation contractor connects the Ø125 mm insertion piece (sleeve).
- The pipe contractor fills, bleeds, tests the pressure and assumes responsibility for the design water flows reaching each branch of the system and the unit.
- The ventilation contractor conducts initial commissioning of the air flows