# WISE Paragon

## Comfort modules for Swegon's WISE System for demand-controlled ventilation

## QUICK FACTS

- Comfort module for demand-controlled indoor climate, integrated in Swegon's control platform WISE
- Complete product with integrated damper for variable air flow control 0-100%
- Energy-efficient operation since the room is ventilated, heated and cooled exactly as called for by the load, neither more nor less
- Highest possible comfort with provision for individual control on a product or room level
- Straightforward installation and connection to the WISE system
- Optional water connection side and centred air connection
- 1-way air distribution that can be distributed with the help of Swegon's ADC (Anti Draught Control) and grille with slats

| KEY FIGURES | | | |
|---|---|---|---|
| Air flow range: | | Pressure range: | Cooling capacity total: |
| l/s | $m^3/h$ | Pa | W |
| 0 - 85 | 0 - 306 | 20 - 200 | Up to 3180 |

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

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# Technical description

## The WISE system

Demand-controlled ventilation with the WISE system has never been easier. For a description of the WISE system, see the WISE System Guide at www.swegon.com

## WISE supports different combinations of indoor climate systems.

The option is now given to combine waterborne and airborne within the building, right down to floor level to zone and room level. WISE makes it possible to combine a number of system solutions at the same time.

## Comfort module WISE Paragon

Comfort module WISE Paragon is a part of the WISE system and demand-controlled air flow and cooling and heating for the best energy efficiency and comfort.

WISE Paragon can be adapted and combined to meet comfort requirements in most projects, both now and in the future. WISE Paragon is a complete and fully flexible product with an adjustable air distribution pattern – the possibility of factory mounted accessories.

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

## Unique control functions

WISE Paragon contains has an integrated damper that regulates the product's slot openings and thus the air flow.

With our unique control sequence, we always ensure that the comfort module supplies the room with the right flow in each operating case. By maintaining a high velocity across the slot openings, we also realise a good coanda effect and with that good comfort.
This allows us to open the water valves earlier and thus regulate the room temperature faster.

## Design

WISE PARAGON is available in the following variants:

Variant A: Ventilation, waterborne cooling.

Variant B: Ventilation, waterborne cooling and heating from a coil.

## 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.

*Figure 1. WISE Paragon, front and back*

## Project design / Typical room

See the Planning section and the separate documentation "WISE Planning Guide" and "WISE System Guide", which are available for download via www.swegon.com.

## Care/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 the maintenance section in this instructions for use.

## Environment

The Building Materials Declaration is available from www.swegon.com.

EUROVENT CERTIFIED PERFORMANCE www.eurovent-certification.com

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

## Compact plug & play unit

WISE Paragon is supplied with control equipment including a radio unit for pairing with the WISE system. Only a 24 V supply needs to be routed to units, which are then easily paired to the main system and allocated functions.

WISE Paragon can also be equipped with numerous different accessories that are fitted to the product at the factory. In combination with other wireless WISE sensors in the room, room functions can also be created.

WISE Paragon sends its values continuously to SuperWISE and you can see the current flow and pressure in real time. The integrated radio node in the product's control unit communicates with the room's set point selector switch or any temperature sensor and sensors in the room.

WISE Paragon works individually and can be easily allocated new functions and set point values to realize the demanded room functions or if new functions are required then these can be an easy introduced via sales support programs and in SuperWISE. This is a great advantage for e.g. repair, conversion and extension work or if you want to upgrade your system with new functionality on room and system level. Also see the WISE System Guide on www.swegon.com

## Factory fitted components

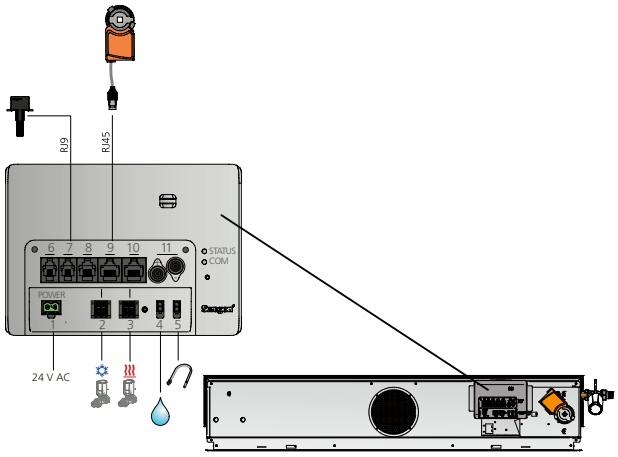



*Figure 2. Components that are factory fitted on WISE Paragon*

**WISE Paragon as standard is equipped with the following components:**

- WISE CU with built-in pressure sensor and 2 inputs for WISE sensors.
- Motor 0-10 V for regulation of the internal damper.

**Factory fitted components as an option:**

- Air quality sensor WISE SMA Multi Multi which measures temperature, RH, VOC and CO2
- Condensation sensor CG-IV
- WISE Temperature sensor PT 1000 for dew-point control
- Valves and actuator

**Loose accessory kit:**

There are also several accessory kits available for retrofitting if you wish to expand your WISE Paragon to handle more advanced functions at the room and product level

- WISE SMA Multi kit
- WISE CG-IV-kit
- WISE dew-point kit


Swegon reserves the right to alter specifications.

# 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 slots. 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 WISE 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 WISE 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.

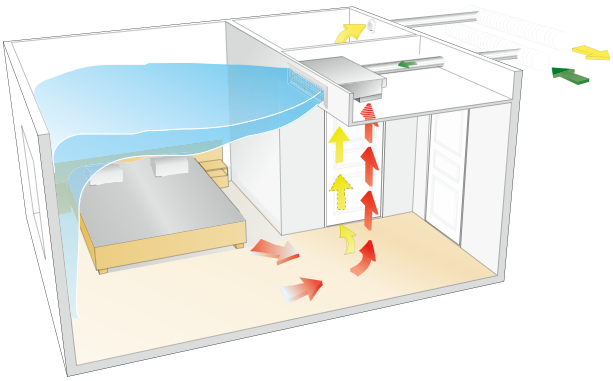


*Figure 3 – Air distribution with the WISE Paragon in a hotel room*

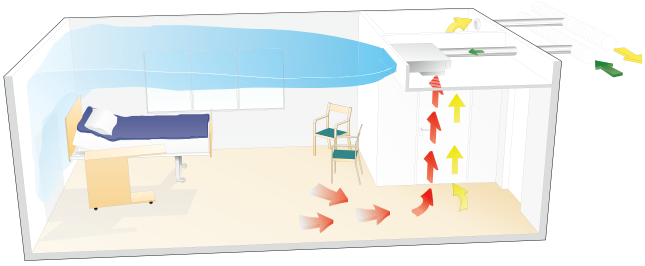


*Figure 4 – Air distribution with the WISE Paragon in a care room*

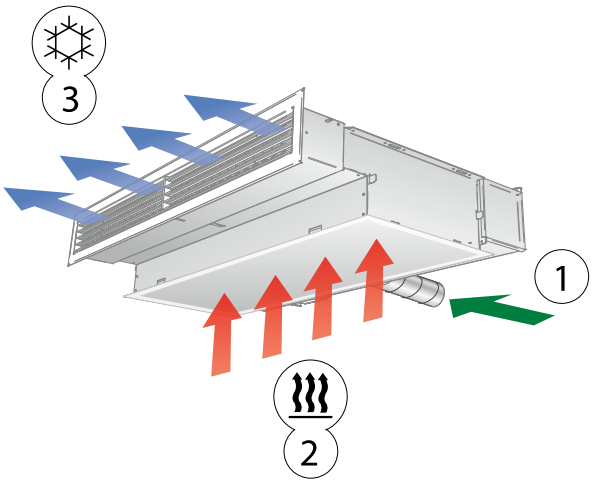



*Figure 5 – Cooling function WISE Paragon*
*1 = Primary air*
*2 = Induced room air*
*3 = Primary air mixed with chilled room air*

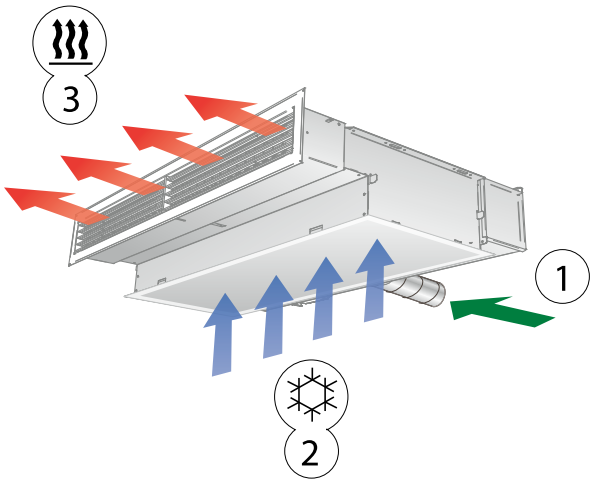



*Figure 6 – PARAGON heating function (waterborne)*
*1 = Primary air*
*2 = Induced room air*
*3 = Primary air mixed with heated room air*

## Air distribution

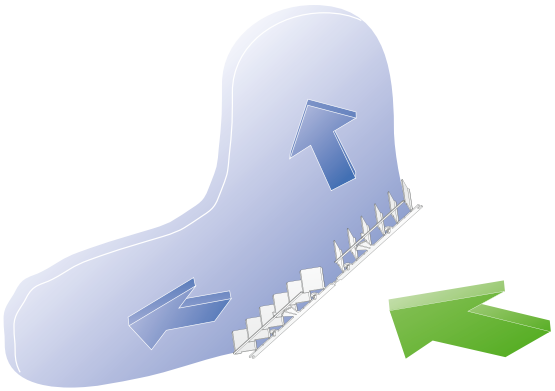


*Figure 7 – Horizontal air distribution with ADC*

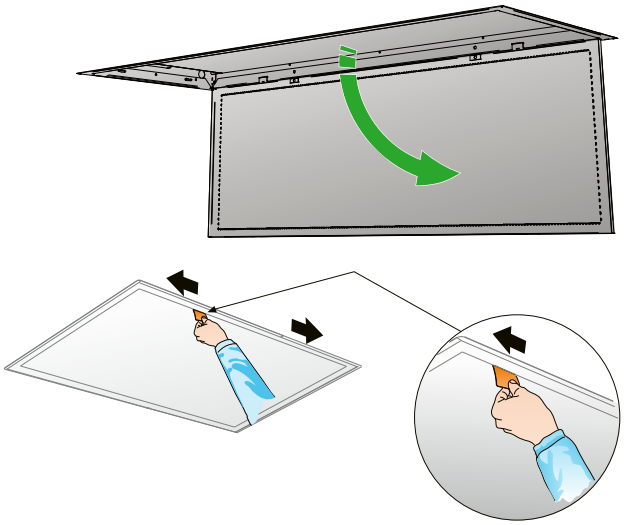


*Figure 10. The return grille has a Quick access function, which facilitates cleaning.*

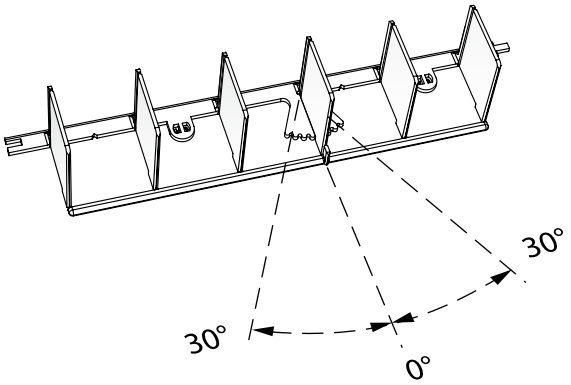



*Figure 8. WISE Paragon ADC*

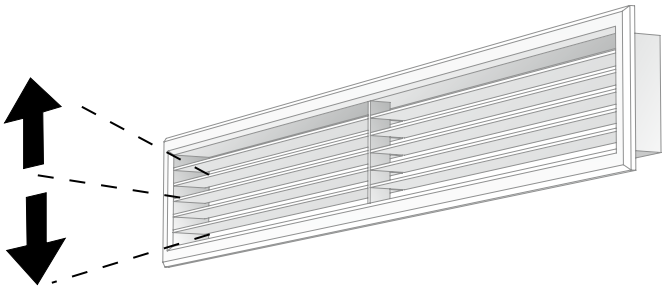


*Figure 9. Vertical air distribution with adjustable louvres in the supply air grille.*

# Control equipment

## Control equipment for ventilation, heating and cooling

Occupancy in hotel rooms varies daily and also throughout the day. The room has different needs depending on occupancy/non-occupancy, but also individual needs depending on the individual in the room. The best solution to ensure the highest possible comfort in the hotel room is with the help of our WISE system, which delivers both energy and cost efficiently exactly as needed, no more and no less.

With the WISE system, the needs of the room are managed precisely according to presence and preferences. When the room is activated either via the reservation system or key card in the room, the air flow increases from the dimensioned non-occupancy flow to normal flow or maximum flow depending on the system settings.

The temperature is also adjusted to the selected comfort level by opening and closing the water valves. When the room is empty, the ventilation and temperature return to economic low flow. Based on the design set points, the guest can manually adjust the desired temperature.

WISE Paragon is designed for demand-controlled ventilation, fully equipped with valves, actuators and control unit for wireless communications, for full integration with Swegon's WISE system. The product comes as standard with the WISE CU control unit, a motor for the integrated damper and actuators and valves on the water side. The product can also be delivered with additional, factory-fitted control equipment, such as WISE SMA Multi and WISE temperature sensor to support the WISE dew-point control function.

*Figure 11. WISE Paragon, complete with factory-installed WISE CU control unit, actuators, and valves and valve actuators for cooling and heating water.*

*Figure 12. WISE Paragon with water connection on the left side. Complete product with factory-installed WISE CU control unit, actuators, and valves and valve actuators for cooling and heating water.*

# Technical data

| | |
|---|---|
| Cooling capacity total, max. | 3180 W |
| Heating capacity, water, max. | 5060 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

## Electrical data

| | |
|---|---|
| Power supply: | 24V AC ±15% 50 - 60Hz |
| Connections pipe dim. | |
| Power: | Screw terminal max. 2.5$mm^2$ |
| Valve actuator: | Push-in spring connection, max. 1.5 $mm^2$ |
| Max. power consumption: | See table below |

| WISE Paragon in standard version: | VA / unit | Standard VA total |
|---|---|---|
| WISE CU | 2.3 | 4.8 |
| Damper motor (UM24) | 2.5 | |

| Option: | VA / unit | | |
|---|---|---|---|
| Valve actuator, ACTUATORc | x 1 | x 2 | x 3 |
| | 6 | 12 | 18 |
| WISE SMA Multi | 0.8 | | |
| WISE SMB | 0.6 | | |

*Example:*
*WISE Paragon in standard design with the following options: Actuators for cooling and heating as well as WISE SMA Multi, gives a total power consumption of 4.8 + 6 + 0.8 = 11.6 VA*

## 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)

$\Delta T_m$: Temperature difference [$t_r$–$t_m$] (K)

$\Delta T$: Temperature difference, between inlet and return (K)

$\Delta T_i$: Temperature difference, between room and supply air (K)

$\Delta p$: 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 (above 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: | Must always be sized so that the system works without condensation |


Swegon reserves the right to alter specifications.

# Project planning

## 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!

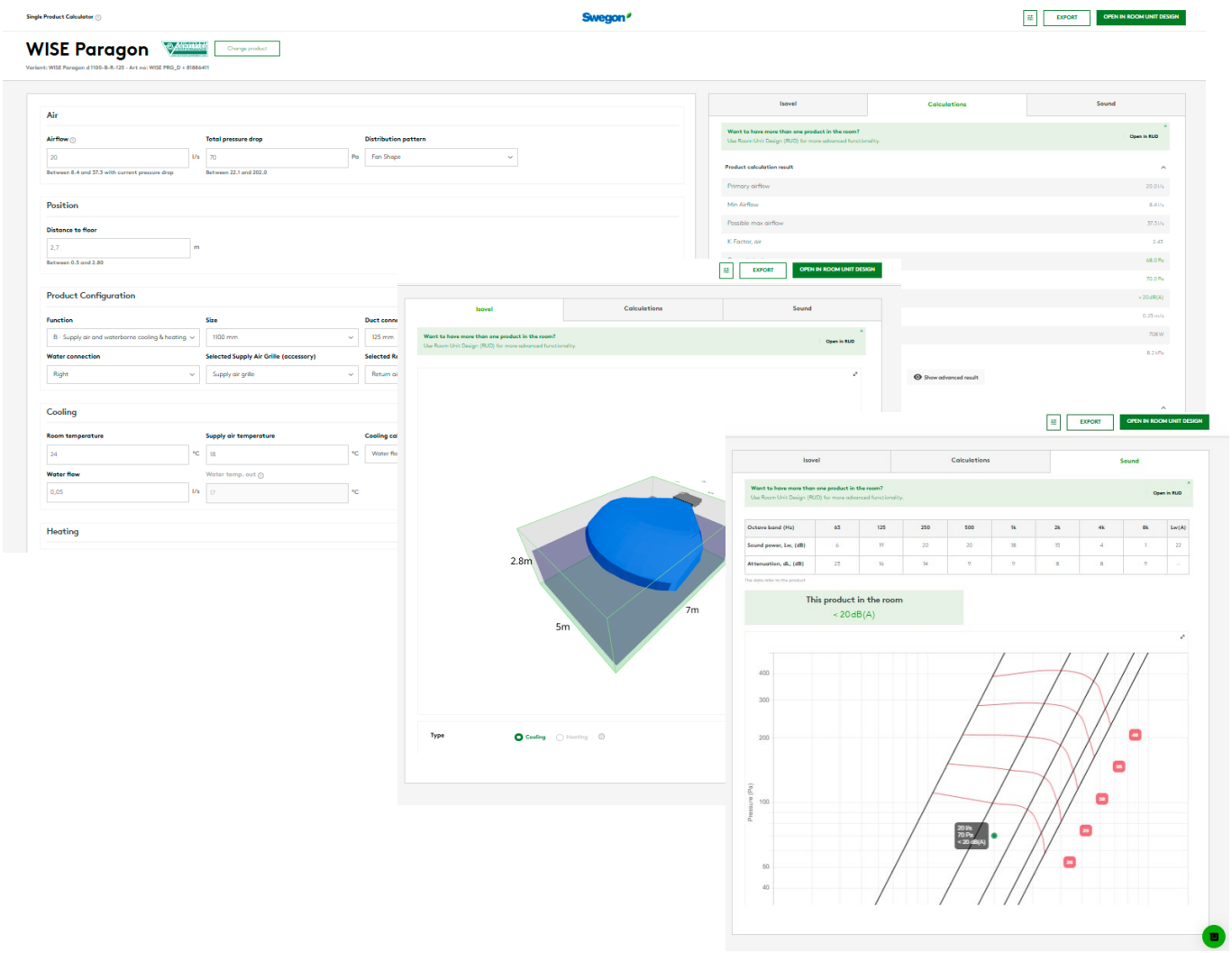



*Figure 13. Calculations in SPC*

# Typical room

**Example 1**

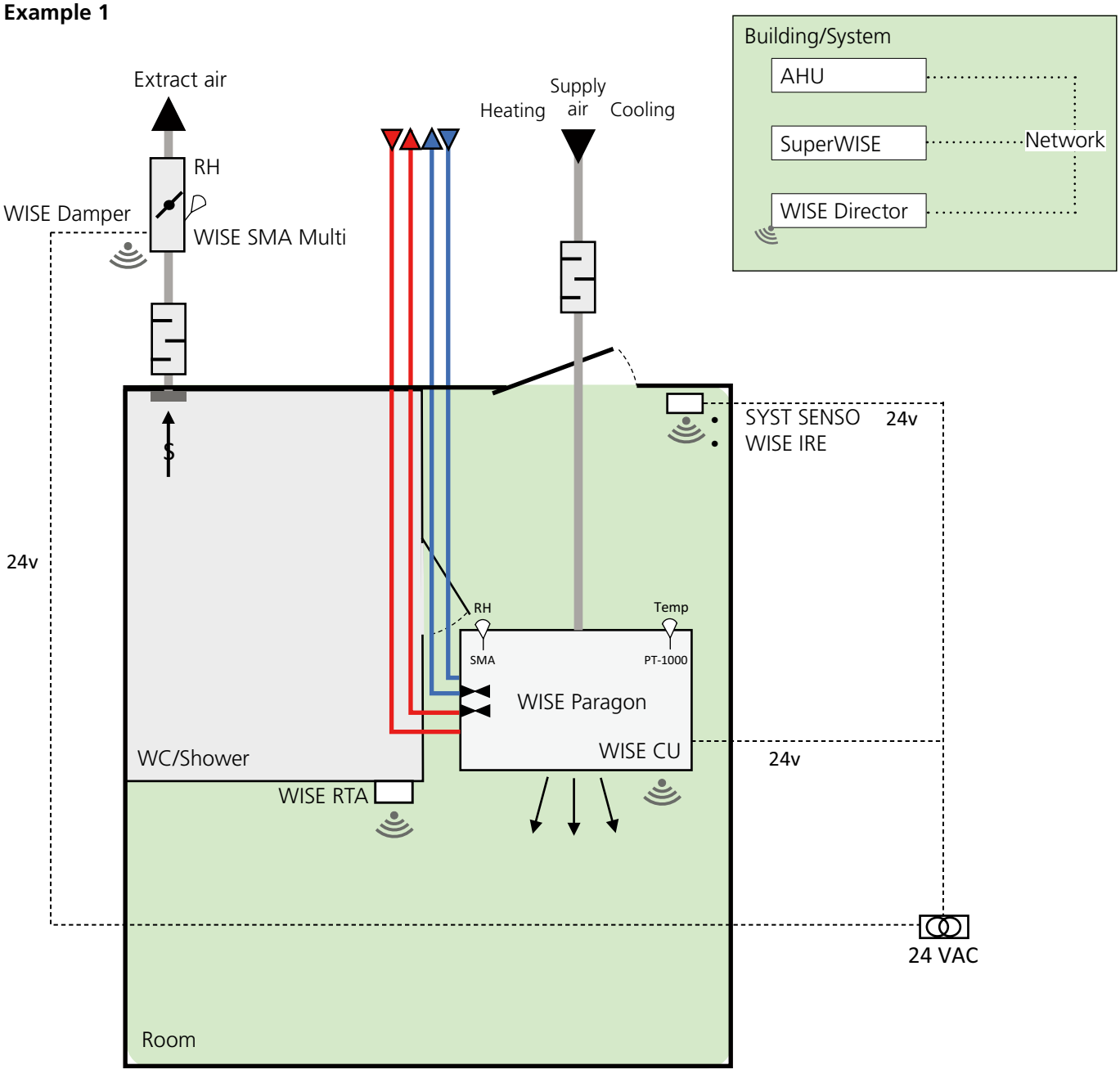



*Figure 14. Hotel solution with WISE Paragon, example 1*

- *WISE Paragon is supplied with factory-fitted accessories as listed below and with water valves, actuators and motor for the integrated damper*
- *The WISE CU control unit regulates the valve actuator, damper motor and measures the supply air pressure. Communicates wirelessly with WISE Director and up to SuperWISE.*
- *WISE SMA Multi factory fitted on WISE Paragon measures RH and together with WISE temperature sensor PT-1000 on the incoming cooling water, dew-point control can be carried out to prevent condensation in the room.*
- *WISE RTA is wall mounted in the room as a set point selector switch. Also measures room temperate and communicates wirelessly with WISE Director. Battery or 24 VAC supply.*
- *The WISE IRE takes the signal from the SYST SENSO card switch and communicates wirelessly with the WISE Director. Battery or 24 VAC supply.*
- *Extract Air Kit WISE-WD-125 contains sound attenuator CLA, WISE Damper and control valve EXC. WISE Damper communicates wirelessly, measures pressure and regulates extract air flow. The pressure sensor on the extract air duct communicates with WISE CU via MB/RJ12*

**Example 2**

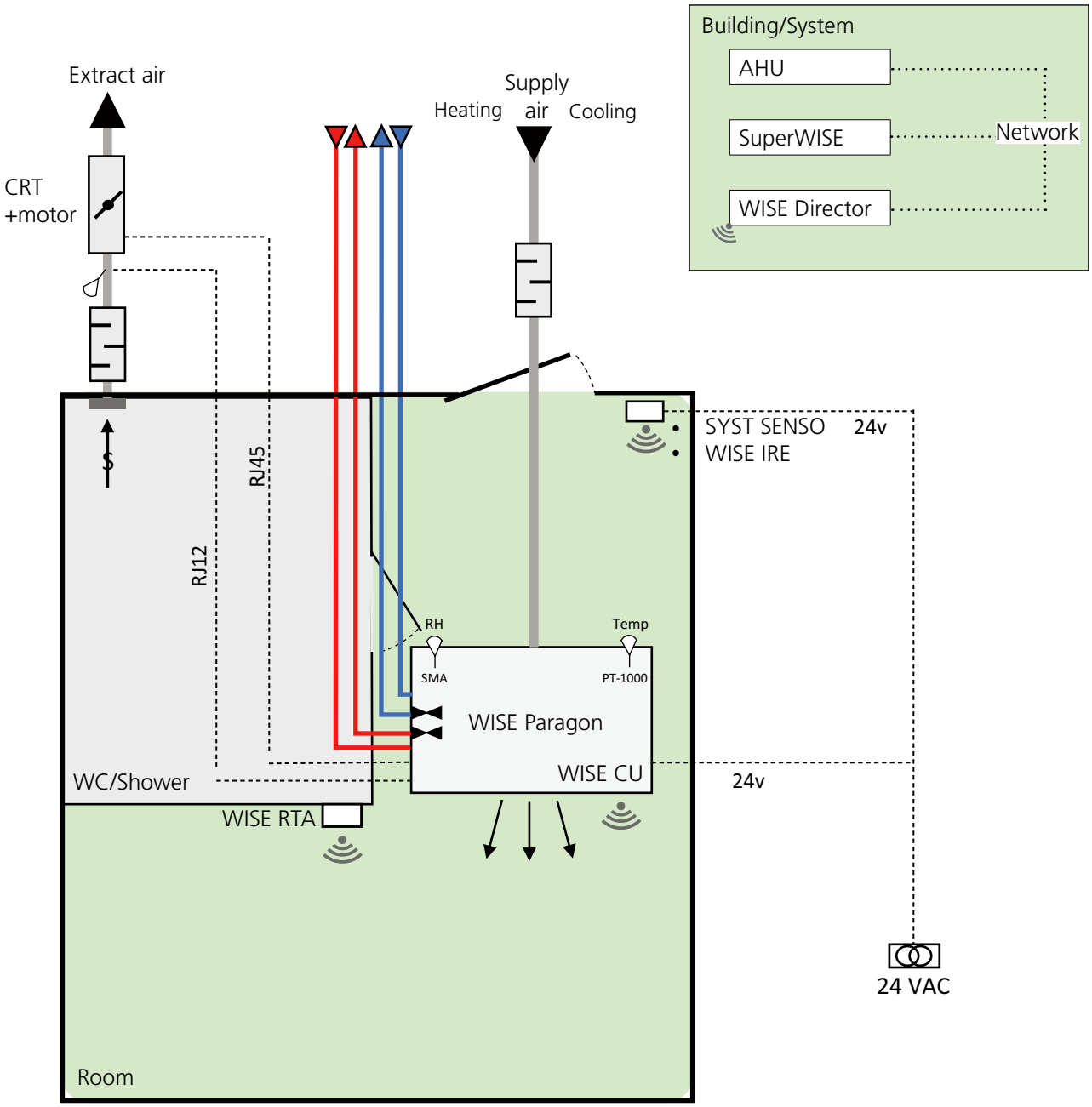



*Figure 15. Hotel solution with WISE Paragon, example 2*

- *WISE Paragon is supplied with factory-fitted accessories as listed below and with water valves, actuators and motor for the integrated damper*
- *WISE CU control unit. Factory fitted on WISE Paragon controls valve actuators, damper motor and measures supply air pressure. Communicates wirelessly with WISE Director and up to SuperWISE.*
- *WISE SMA Multi factory fitted on WISE Paragon measures RH and together with temperature sensor WISE PT-1000 on the incoming cooling water, dew-point control can be carried out to prevent condensation in the room.*
- *WISE RTA is wall mounted in the room as a set point selector switch. Also measures room temperate and communicates wirelessly with WISE Director. Battery or 24 VAC supply.*
- *The WISE IRE takes the signal from the SYST SENSO card switch and communicates wirelessly with the WISE Director. Battery or 24 VAC supply.*
- *Extract Air Kit WISE-CRT-125 contains sound attenuator CLA, CRT motorised damper, pressure sensor, hose, nipple and screw and control valve EXC. The damper on the extract air communicates wirelessly with WISE CU via RJ45. The pressure sensor on the extract air duct communicates with WISE CU via MB/RJ12*

# 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 $\Delta T_{mk}$ 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 $\Delta T_{mk}$ 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 $\Delta T_{mk}$ | | | | | | | 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 | 100 | 196 | 302 | 412 | 524 | 636 | 751 | 1 |
| 800 | 16,7 | 60,2 | <20 | 134 | 281 | 436 | 598 | 764 | 933 | 1104 | 2 |
| 800 | 27,6 | 99,4 | 22 | 145 | 299 | 461 | 626 | 794 | 964 | 1135 | 3,3 |
| 1100 | 8,4 | 30,1 | <20 | 105 | 219 | 344 | 474 | 609 | 745 | 883 | 1 |
| 1100 | 25,1 | 90,4 | <20 | 190 | 385 | 598 | 821 | 1044 | 1271 | 1504 | 3 |
| 1100 | 39,3 | 141,6 | 27 | 200 | 415 | 649 | 886 | 1132 | 1383 | 1637 | 4,7 |
| 1400 | 8,4 | 30,1 | <20 | 140 | 297 | 458 | 624 | 792 | 963 | 1135 | 1 |
| 1400 | 25,1 | 90,4 | <20 | 230 | 474 | 735 | 997 | 1262 | 1535 | 1787 | 3 |
| 1400 | 50,2 | 180,7 | 29 | 268 | 541 | 832 | 1128 | 1429 | 1738 | 2045 | 6 |

### Table 4 – Heating capacity, 100 Pa

| Length of the Unit | Air flow | | Sound level 1) | Heating capacity water (W) at $\Delta T_{mv}$ | | | | | | | 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 | 105 | 221 | 343 | 467 | 593 | 721 | 851 | 1 |
| 800 | 20,0 | 72,0 | 21 | 153 | 316 | 489 | 667 | 848 | 1036 | 1223 | 2 |
| 800 | 33,0 | 118,8 | 27 | 160 | 331 | 510 | 695 | 880 | 1071 | 1260 | 3,3 |
| 1100 | 10,0 | 36,0 | 21 | 120 | 255 | 400 | 547 | 700 | 854 | 1012 | 1 |
| 1100 | 30,0 | 108,0 | 25 | 204 | 431 | 672 | 919 | 1171 | 1427 | 1686 | 3 |
| 1100 | 47,0 | 169,2 | 32 | 220 | 464 | 723 | 996 | 1269 | 1553 | 1840 | 4,7 |
| 1400 | 10,0 | 36,0 | 22 | 165 | 341 | 530 | 719 | 916 | 1115 | 1313 | 1 |
| 1400 | 30,0 | 108,0 | 24 | 260 | 540 | 829 | 1123 | 1421 | 1722 | 2030 | 3 |
| 1400 | 60,0 | 216,0 | 35 | 290 | 597 | 922 | 1253 | 1589 | 1929 | 2272 | 6 |

1) Room attenuation = 4 dB

Water flow = 0,051 l/s, Room temperature = 20°C

# Installation

## Suspension

The WISE Paragon has two holes on each short side for suspension 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 17) are ordered separately.

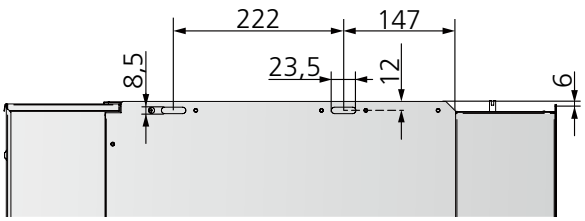



*Figure 16. Dimensions suspension*

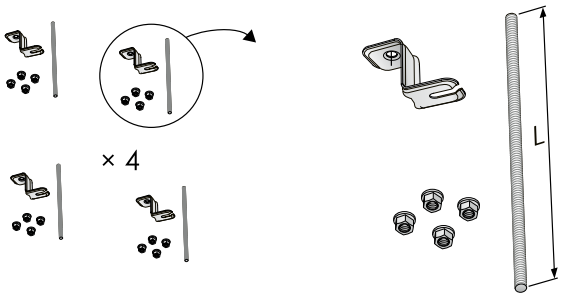



*Figure 17. Assembly fitting SYST MS M8-1, ceiling mount and threaded rod*

## Installation

The covering work can begin once the WISE Paragon has been completely installed. WISE Paragon is designed for use in most common types of load-carrying T-bar ceiling systems with panels, plaster board, etc. To make your work simpler, detailed dimensions for cutting the opening are specified below in the "Dimensions" section on page 26 in this brochure. More detailed information is also available in separate installation instructions at www.swegon.com.

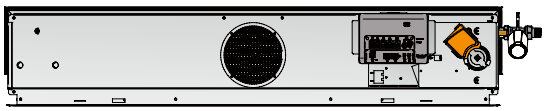
## Air connection

All variants have the air connection Ø125.

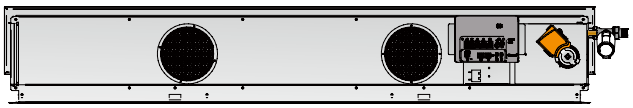
The standard variant has the air connection centred at the rear of the product for easy access from both ends and the rear and to avoid confusing the units logistically on site.

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 with two air connections



**Connection sizes, air**

| Variant | Length | Air connection | |
|---|---|---|---|
| | (mm) | 1 x Ø 125 | 2 x Ø 125 |
| 1: Standard | 800, 1100, 1400 | Yes | No |
| 2: Suite | 1400 | No | Yes |

# Connection - Water

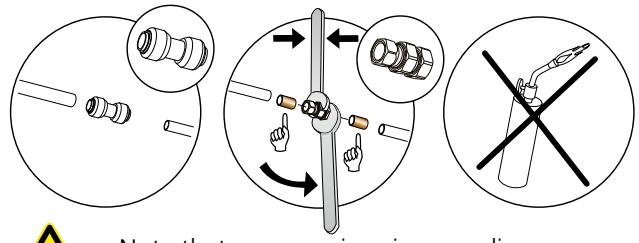
## Connection sizes

**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 centred water connection at the rear (WB).

Connect the water pipes using push-on couplings 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 unit's existing soldered joints.

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

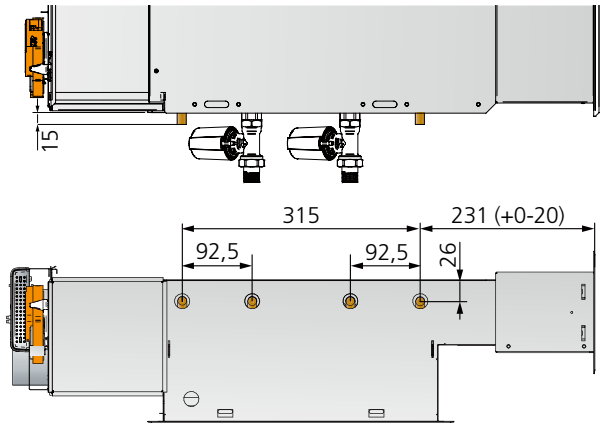
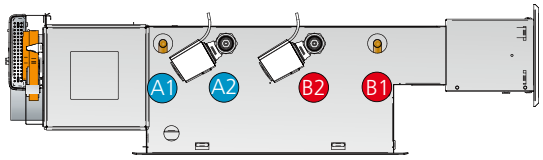



*Figure 19. Dimensions water connection*

### Water connection on the right-hand side "R"

**Cooling and heating R. all sizes**




**Cooling R, all sizes**

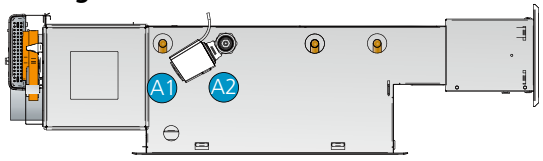
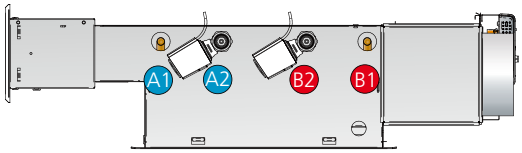



*Figure 18. Water connection on right-hand side).*
*A1 = Cooling water, supply* *B1 = Heating water, supply*
*A2 = Cooling water, return* *B2 = Heating water, return*

### Water connection on the left-hand side "L"

**Cooling and heating L. all sizes**




**Cooling L, all sizes**

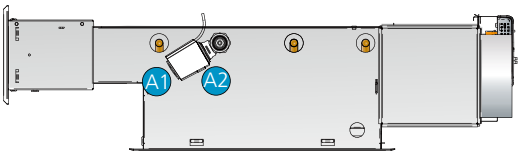



*Figure 20. Water connection on left-hand side.*
*A1 = Cooling water, supply* *B1 = Heating water, supply*
*A2 = Cooling water, return* *B2 = Heating water, return*

### Water connection, centred at the rear

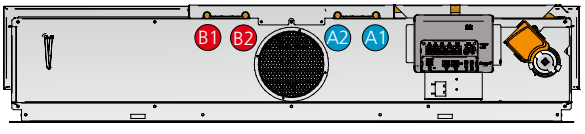



*Figure 21. Water connection at the rear edge (WB).*
*A1 = Cooling water, supply* *B1 = Heating water, supply*
*A2 = Cooling water, return* *B2 = Heating water, return*

# Accessories

## Optional accessories - Compilation

### Factory-fitted optional extras

Factory-fitted control equipment makes the installation work simple.

**Our optional factory-fitted extras:**

| | |
|---|---|
| Control unit | WISE Paragon CU |
| Actuator | WISE Paragon SA |
| Valve cooling | VDN215 Straight valve |
| Valve heating | VDN215 Straight valve |
| Valve actuator, cooling | ACTUATOR 24 V NC |
| Valve actuator, heating | ACTUATOR 24 V NC |
| Condensation sensor | CG IV |
| Air quality sensor | WISE SMA Multi |
| Temperature sensor | WISE TEMP SENSOR PT-1000 |

### Room accessories

Hand-held terminal, TuneWISE

Dongle for hand-held terminal, ConnectWISE USB

Scanner, Scanner TuneWISE

Temp. sensor (WISE DPS Modbus)

Set point selector switch with integrated temperature sensor, WISE RTA

Sensors (VOC, CO2, RH, Temp), WISE IAQ MULTI

Sensors (CO2, RH, Temp), WISE IAQ CO2

Sensors (VOC, RH, Temp), WISE IAQ VOC

Temperature sensor (IR) WISE IRT

Occupancy sensors (Occupancy, RH, Temp), WISE OCS

Window/door contact WISE WCS

Temperature sensor WISE RTS

Sensor, Input radio extender for junction boxes, (analogue/digital) WISE IRE

Sensor for wall mounting, Input radio extender (analogue/digital) WISE IRE-W

Card switch, SYST SENSO II

**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

### Loose kits and accessories

| | |
|---|---|
| Valve cooling | VDN 215 Straight valve |
| Valve heating | VDN 215 Straight valve |
| Actuator cooling | ACTUATOR 24 V NC |
| Actuator heating | ACTUATOR 24 V NC |
| 6-way valve, kit | CCO-KIT |
| Condensation sensor, kit | Condensation sensor, CG IV-KIT |
| Dew-point kit | Dew-point KIT WISE Paragon |
| Supply air grille | PARAGON T-SG |
| Return grille | PARAGON T-RG |
| Grille lock | Paragon T- GL |
| Transformer | Power ADAPT 20 VA (ARV) |
| Transformer | SYST TS-1 |
| Assembly piece | SYST MS M8 |
| 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 WISE-CRT-125 |
| Return air kit | Extract Air Kit WISE-WD-125 |
| ADC | ADC-2-105 |

# Accessories, factory-fitted

### 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, ACTUATOR 24 V NC

Factory fitted valve actuators for cooling and heating.

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

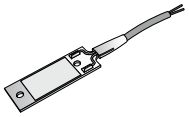
*For more information about the actuator, see the separate product data sheet on www.swegon.com.*

### Six-way valve, CCO

Compact Change Over valve, for maximum utilisation of the coil and thus high cooling and heating capacity

### 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.



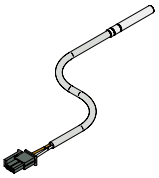
*For more information about the condensation sensor, see the separate product data sheet on www.swegon.com.*

### Air quality sensor, WISE SMA Multi (Sensor Module Advanced)

WISE SMA Multi is a sensor that measures temperature, RH, VOC and CO2. WISE SMA Multi can be factory fitted in climate products, dampers or air diffusers in the WISE system and which are equipped with a WISE CU. The unit is powered by a 5V DC from WISE CU and communicates via Modbus with this.

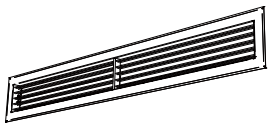
### Temperature sensor, WISE TEMP SENSOR PT-1000

The PT-1000 sensor is mounted on the inlet pipe and connected to CU and measures the inlet temperature of water pipes to obtain the WISE dew-point control function. Please note that the WISE SMA Multi that measures RH and temperature is needed in combination with the PT-1000 sensor to achieve this function.



# Loose accessories

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

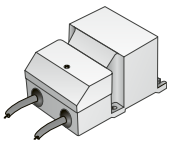


**Return grille, PARAGON T-RG**
Return grille for PARAGON, available for products with the length, 800, 1100, 1400 mm

**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.*



**Dew-point kit, Dew-point KIT WISE PARAGON**
Includes WISE temperature sensor PT-1000 and cable ties for retrofitting on incoming cooling pipe to achieve the dew-point control function.

**Condensation sensor, CG IV-KIT**
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.*

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

VDN215 is preset fully open on $K_v$ 0.89.

| 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.*

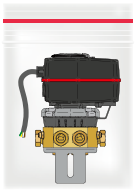
**Valve actuator, cooling & heating, ACTUATOR 24 V NC**
Valve actuators for cooling and heating.

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.

**6-way valve, CCO-KIT**
Compact Change Over valve, for maximum utilisation of the coil.



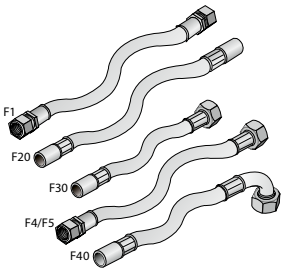
**Assembly fitting, SYST MS M8**
For installation use the assembly fitting containing threaded rods, ceiling brackets and nuts to all four mounting brackets. Threaded rod length from 200 mm. In the event of large distances between ceiling and unit, double threaded rods with thread locks are used.

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

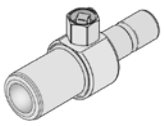
**Flexible connection hoses, SYST FH**
Flexible hoses are available with quick-fit, push-on couplings as well as clamping ring couplings for quick and simply connection. The hoses are also available in various lengths. Note that compression ring couplings require support sleeves inside the pipes.

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.



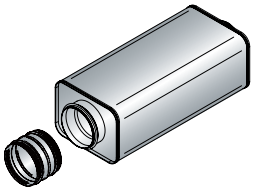

**Venting nipple, SYST AR-12**
A venting nipple is available as a complement to the flexible hoses with push-on couplings. The venting nipple fits directly in the push-on hose coupling and can be fitted in an instant.



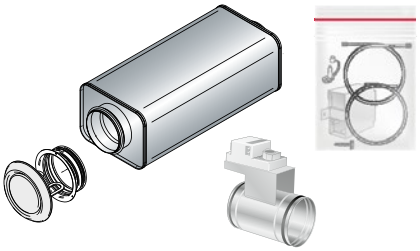
**Connection piece, air – insertion joint, SYST AD1**
SYST AD1 is used as a joint between WISE Paragon and the duct system. Available in two sizes: Ø125 and Ø160 mm.

**Connection piece, air, SYST CA**
90° duct bend
Available in two sizes: Ø125 and Ø160 mm.

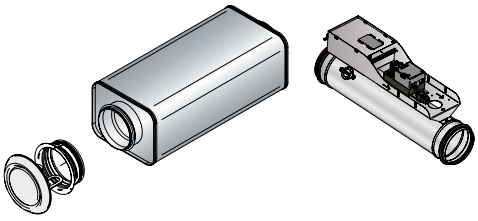
**Supply Air Kit 125**
The supply air kit contains a sleeve and sound attenuator CLA, d=125 mm.



**Extract Air Kit WISE-CRT-125**
Extract air kit adapted for WISE Paragon.
The kit includes sound attenuator CLA, d=125mm, CRT motorised damper 2-10 V and pressure sensor, 0.5 m hose, nipple and screw, control valve EXC



**Extract Air Kit WISE-WD-125**
Extract air kit adapted for WISE Paragon.
The kit contains sound attenuator CLA, d=125 mm, WISE Damper, control valve EXC



# Dimensions and weights

## Weight

### WISE Paragon 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 | |

### WISE Paragon 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 | |

### WISE Paragon 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:*
*Control equipment: 0.74 kg*

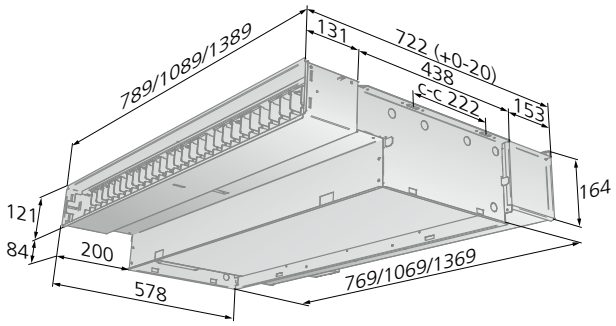



*Figure 22. Dimensional drawing without grille*

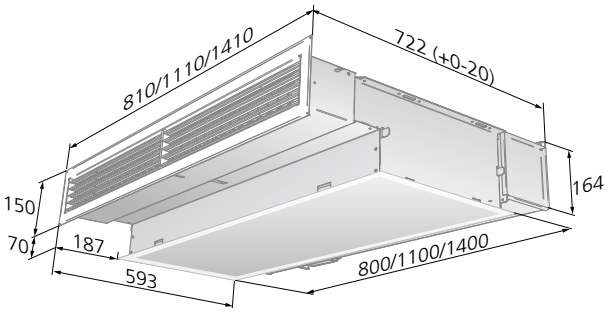



*Figure 23. Dimensional drawing with grille*

# Specification

## Specification WISE Paragon

WISE Paragon for cooling, heating and ventilation with built-in control equipment for integration into the WISE system. As standard, factory fitted components are included for plug & play installation.

## Delivery demarcation WISE Paragon

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.

Cable dimensioning should be carried out according to current regulations for low current and thus, for example, take into account voltage drops when using long cables.

## Ordering key WISE Paragon

| **WISE Paragon** | d | aaaa- | b- | cc- | ddddd |
|---|---|---|---|---|---|
| Version: | | | | | |
| Length (mm)<br>800, 1100 and 1400 | | | | | |
| Function:<br>A = Cooling<br>B = Cooling and heating (water) | | | | | |
| Connection side - water<br>*(seen from the back of the product)*<br>R - Right<br>L - Left<br>WB - Centred at the rear (variant) | | | | | |
| Air connections<br>Ø125 = 125 (standard)<br>Ø2x125 = 2x125 (suite, only selectable for length 1400) | | | | | |

## Factory-fitted optional extras

Factory-fitted control equipment makes the installation work simple.

**Our optional factory-fitted extras:**

| | |
|---|---|
| Control unit | WISE Paragon CU |
| Actuator | WISE Paragon SA |
| Valve cooling | VDN215 Straight valve |
| Valve heating | VDN215 Straight valve |
| Valve actuator, cooling | ACTUATOR 24 V NC |
| Valve actuator, heating | ACTUATOR 24 V NC |
| Condensation sensor | CG IV |
| Air quality sensor | WISE SMA Multi |
| Temperature sensor | WISE TEMP SENSOR PT-1000 |

## 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

### Loose accessories

| | |
|---|---|
| Valve cooling | VDN 215 Straight valve |
| Valve heating | VDN 215 Straight valve |
| Actuator cooling | ACTUATOR 24 V NC |
| Actuator heating | ACTUATOR 24 V NC |
| 6-way valve, kit | CCO-KIT |
| Condensation sensor, kit | Condensation sensor, CG IV-KIT |
| Dew-point kit | Dew-point KIT WISE Paragon |
| Supply air grille | PARAGON T-SG |
| Return grille | PARAGON T-RG |
| Grille lock | Paragon T- GL |
| Transformer | Power ADAPT 20 VA (ARV) |
| Transformer | SYST TS-1 |
| Card switch | SYST SENSO II |
| Assembly piece | SYST MS M8 |
| 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 WISE-CRT-125 |
| " | Extract Air Kit WISE-WD-125 |
| ADC | ADC-2-105 |

## Ordering Key, Accessories

| Grille | PARAGON d T- | aa- | bbbb |
|---|---|---|---|
| Type:<br>SG = Supply air grille<br>RG = Return grille | | | |
| Length of the product (mm):<br>800, 1100, 1400 | | | |

| Assembly fitting | SYST MS M8 | aaaa- | b |
|---|---|---|---|
| Length threaded rod (mm):<br>200; 500; 1000 | | | |
| Type:<br>1=One threaded rod<br>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):<br>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):<br>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):<br>200, 400, 600 | | | |

## Room accessories

- Hand-held terminal, TuneWISE, xx items
- Dongle for hand-held terminal, ConnectWISE USB, xx items
- Scanner, Scanner TuneWISE xx items
- Temp. sensor (WISE DPS Modbus)
- Setpoint selector switch with integrated temperature sensor, WISE RTA, xx items
- Sensor (VOC, CO2, RH, Temp), WISE IAQ MULTI, xx items
- Sensor (CO2, RH, Temp), WISE IAQ CO2, xx items
- Sensor (VOC, RH, Temp), WISE IAQ VOC, xx items
- Temperature sensor (IR) WISE IRT, xx items
- Occupancy sensor (Occupancy, RH, Temp), WISE OCS, xx items
- Window/door contact WISE WCS, xx items
- Temperature sensor WISE RTS, xx items
- Sensor, Input radio extender for junction boxes, (analogue/ digital) WISE IRE, xx items
- Sensor for wall mounting, Input radio extender (analogue/ digital) WISE IRE-W, xx items
- Card switch, SYST SENSO II, xx items

## Product accessories

- Dew-point kit, Dew-point KIT WISE Paragon, xx items
- Condensation sensor KIT for retrofitting, CG IV-KIT, xx items
- ADC for subsequent installation, SYST ADC-2-105, xx items
- Valve actuator, ACTUATORc 24 V NC, xx items
- Valve straight, SYST VDN 215/VDN220, xx items
- Supply air grille, PARAGON T-SG aaaa, xx items
- Return grille, PARAGON T-RG aaa, xx items

### Accessory kits:

- Condensation sensor kit, Condensation sensor CG IV-KIT
- Valve, 6-way CCO kit
- Supply Air Kit 125 xx items
- Extract Air Kit WISE-CRT-125 xx items
- Extract Air Kit WISE-WD-125 xx items

### Other accessories:

- Transformer, POWER Adapt 20 VA (ARV), xx items
- Transformer, SYST TS-1, xx items
- Assembly fitting, SYST MS M8 aaaa–b-ccccc, xx items
- 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
- 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, SYST AR 12 xx pcs.

etc.

Specify the quantities individually or with reference to the drawing.

# 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 WISE Paragon with integrated supply air damper in the product for Swegon's WISE system. Designed for rear-edge mounting in the ceiling/wall with the following functions:

- Waterborne cooling
- Waterborne heating or electric heating
- Ventilation
- Variable pressure-independent air flow regulation
- Wireless communication in Swegon's demand-controlled indoor climate system WISE
- Comfort guarantee ADC with adjustable function +-30 degrees
- Ø125 mm duct connection
- WISE Paragon comfort module can be supplied with accessories to achieve the WISE dew-point control function from the factory.
- Mounted air quality sensor WISE SMA Multi that measures RH, Temp and VOC in the recirculation air
- Integrated circulating air opening in face plate
- 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


Swegon reserves the right to alter specifications.