Primo Hotel

Indoor climate units for hotel rooms

General

Primo Hotel indoor climate unit

- Ceiling-mounted indoor climate units for ventilation, cooling and heating
- High capacity; occupies little space
- Dry system without drainage
- No fan in the room.
- Requires little maintenance
- The intelligent TITAN control equipment controls both the temperature and the air quality.

Functions

- Cooling
- Heating
- Ventilation
- Room temperature control

Application

New construction, extension and alteration of hotel rooms

Key figures

Cooling capacity:	1160 W (L = 1000 mm, 200 Pa pressure, $\Delta T_{mk} = \Delta T_{l} = 10$ K and $q_{l} = 33$ l/s)
Heating capacity:	970 W (L = 1000 mm, 200 Pa pressure, $\Delta T_{mv} = 30$ K and $q_{l} = 33$ l/s)
Air flows:	9–33 l/s
Pressure:	50–200 Pa
Length:	800 and 1000 mm
Height:	220 mm incl. drip tray
Duct connection:	Ø 100 mm
Controls:	TITAN control equipment for room-by-room control

2008-01-09

Technical Description

Distinguishing features of Primo Hotel

The indoor climate in a hotel room must meet special needs. Inasmuch as the room environment should be peaceful, quiet and offer the highest degree of comfort possible, uniform temperature and a healthy indoor climate are significant necessities, regardless of the outdoor temperature and season. The ventilation system must also be quiet and as maintenance-free as possible. Moreover, occupants have great need of separate variations in room level. During certain times of the year, high humidity may also involve risk of condensation.

Primo Hotel together with the TITAN room control system is the optimal solution for a healthy climate in a hotel room. The system is used for cooling, heating and ventilation and can be controlled separately in each room.

Quiet and draught-free indoor climate

- No fan or motor in the room
- Adjustable supply air grille
- Motorised damper for air quality control

Simple maintenance

- Condensation monitor enables a dry system without drainage
- No filter or moving parts in the room
- Simple to clean

Low energy consumption

The system automatically adjusts the airflow to current needs, among other factors, based on the presence of occupant(s) in the room and alarms from a condensation monitor and window contact, if installed.

The system can also be controlled manually via a pushbutton on the room thermostat.

Planning

Both designing and sizing are made easier by using Swegon's software ProSelect.
ProSelect is available at Swegon's home page: www.swegon.com.

Lengths and connection side

Length: 800 or 1000 mm
Pipe connections: Left-hand or right-hand

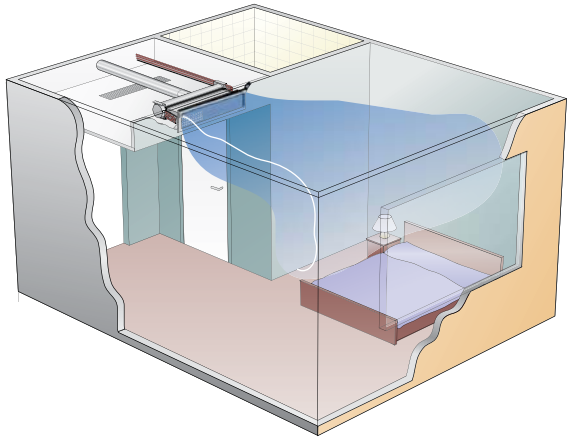

Figure 1. Primo Hotel in a room

How the unit operates

An air handling unit provides the ventilation system with a supply air at a constant temperature. This can be handled either for a complete building or floor by floor. The unit is equipped with a cooling coil for cooling and dehumidification and a heating coil for reheating the supply air. The pressure in both the supply air and the extract air ducts is kept constant. Swegon's GOLD one-piece air handling unit is well-suited for its core role in the Swegon Hotel Solution. The intelligent control system optimizes system performance and saves energy. The GOLD as standard also has provision for connection to the supervisory system. Read more about the GOLD at our home page.

Primo Hotel should be placed in the ceiling in the entrance hall outside the bathroom. When the guest enters the room and inserts the key card into the card reader, the control equipment adjusts the supply air damper from the low airflow to the high airflow setting for a given period to quickly ventilate the room. At the same time, the system alters the temperature to conform to a comfort level.

In response to input signals from the window contact, condensation monitor and key card the intelligent controller automatically steers the air damper and valve actuators to provide cooling energy and heat. The system adjusts itself to provide an optimal indoor climate both in terms of comfort and energy consumption.

Example 1:
The condensation monitor indicates condensate precipitation. The system opens the air damper to provide a high airflow and simultaneously closes the chilled water valve and opens the warm water valve to the normal flow setting.

Example 2:
The guest forgets to close the window, withdraws the key card and leaves the room. The system sets the air damper to the low flow setting and shuts off both the flow of chilled water and hot water completely. If the room temperature drops to a level that involves risk of pipes freezing, the system opens the hot water valve to protect the pipework against frost.

In addition to Primo Hotel's automatic room control, the guest can manually set three airflow rates and the temperature for the degree of room comfort desired. Room comfort control is only possible when the room is occupied, i.e. the key card has been inserted in the card reader.

To activate the unit from a remote terminal

If it is desirable to activate or deactivate a room from an external terminal, there is provision for utilizing the presence input in the controller. The staff can utilize a relay controlled from a reception desk or via a supervisory system, for instance, to simulate presence or absence and in this way check the current operating condition. For further particulars, get in touch with your nearest Swegon representative.

Accessories

OE Extension connection fitting
Telescopic outlet air connection fitting for maximum performance from the unit. The longer connection fitting increases the cooling capacity of the water by approx. 10 %. The cooling and heating capacity figures specified in the sizing section have been measured in a unit equipped with an extension connection fitting.

CT Drip tray
Since Primo Hotel is a dry, condensation-free indoor climate system, the use of the drip tray is normally not needed. In certain extreme situations, for instance if an occupant takes a long shower with the door open, there is risk that the control equipment will not reduce the inflow of chilled water in time. This may cause a certain degree of condensate precipitation until the valve is closed.

TITAN Control equipment
Intelligent equipment for controlling both the water flow and air flow. Consists among other components of a room thermostat, controller, actuators, valves, transformer and condensation monitor. Key cards and window contacts can also be wired to the TITAN for further room control flexibility. For more information, see the product datasheet for the TITAN.

LUNA control equipment can be used in some cases if demand control of the supply air is not preferred.

GTH Supply air grille
Adjustable, rectangular supply air grille for wall-mounting facing the main room. The grille has both horizontal and vertical air deflectors that can easily be adjusted to provide a distribution pattern of supply air that will be optimal for the room. Available in various colours For more information, see the product datasheet for the GTH.

Important: If the ALG return air grille is not mounted directly below the unit, select a GTH supply air grille having height H = 200 mm which will enable maintenance personnel to inspect and clean the drip tray.

ALG Extract air grille
Rectangular extract air grille with fixed, horizontal vanes for ceiling mounting in the entrance passage of the room. Available in various colours. For more information, see the product datasheet for the ALG.

CLA Sound attenuator
Rectangular compact sound attenuator for installation between the CRT supply air damper and the unit. For more information, see the product datasheet for the CLA.

CRT Damper
Motorised damper suitable for installation both in the supply air duct and the extract air duct. The damper, steered by the control equipment controller, reduces the primary air pressure (200 Pa) to three different levels. For more information, see the product datasheet for the CRT.

EXC Extract air register
Circular, adjustable extract air register for installation in the bathroom. For more information, see the product datasheet for the EXC.

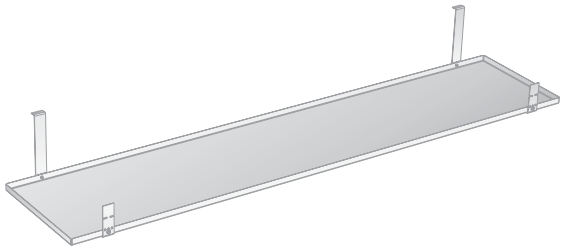

Figure 2. CT drip tray

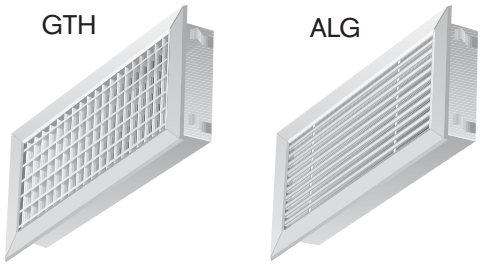

Figure 3. GTH supply air grille and ALG return air grille

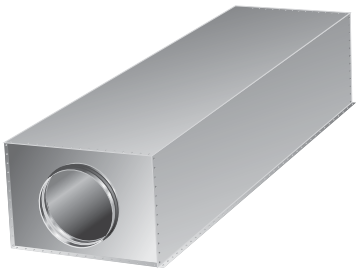

Figure 4. CLA sound attenuator

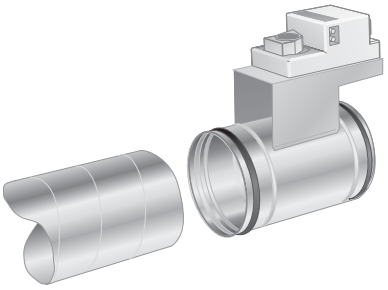

Figure 5. CRT damper

Installation

Assembly

The primo Hotel unit is equipped with four brackets adapted to the SYST MS assembly piece that must be secured with screws to the tie beams. The assembly piece is available in different lengths of threaded rods to fit various suspension hanger distances. SYST MS must be specified and ordered separately.

Water connections

The inlet and return pipe connections for chilled and hot water respectively have smooth Ø 12 × 1.0 mm (Cu) pipe ends for connection to the pipework. The connection pipes for return water on the unit are mounted at a slightly higher level than the inlet pipes to facilitate venting the system. See also section entitled: Dimensions.

After the pipe connections have been completed, install the condensation sensor on the chilled water supply pipe. The condensation sensor must be mounted directly against the pipe. The sensor must not be covered by for instance pipe insulation.

Air connection

Connect the sound attenuator to Primo Hotel's air connection fitting (Ø 100 mm) via a short length of duct or a jointing sleeve. Then mount the supply air damper in the same way against the sound attenuator.

Note that the sound attenuator must always be mounted between the supply air damper and the Primo Hotel.

Mount the extract air register in the bathroom ceiling and connect via a duct to the extract air damper. The extract air must be able to pass through a slot below the bathroom door for optimal ventilation performance.

For more information about how to install the sound attenuator, air damper and extract air register, see the datasheet for each of the products.

TITAN Control equipment

Install the controller above the suspended ceiling. Connect the room thermostat and control cables from the condensation monitor and possible window contact and key card reader (for indicating the presence of occupants). Also connect the cables (1 m) from the two valve actuators and the cables from the supply air and the extract air dampers.

Connect the transformer to the controller (1 m) and then to the wall outlet installed.

Cladding

Finish installing the suspended ceiling in the entrance hall of the hotel room; then install the supply air and the extract air grilles.

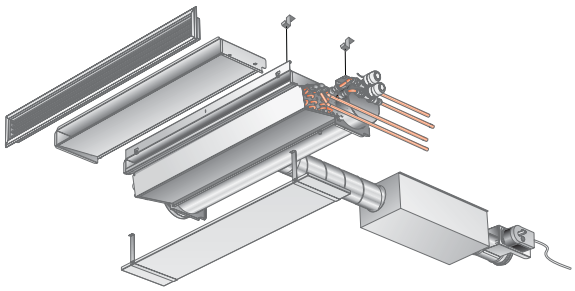

Figure 6. Typical installation with extension connection fitting

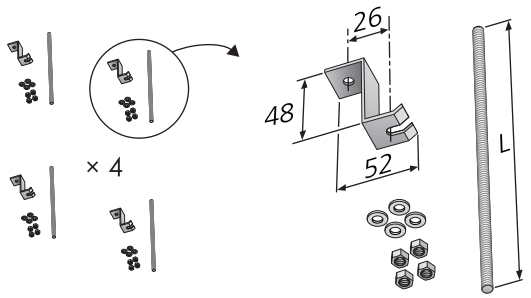

Figure 7. SYST MS assembly piece

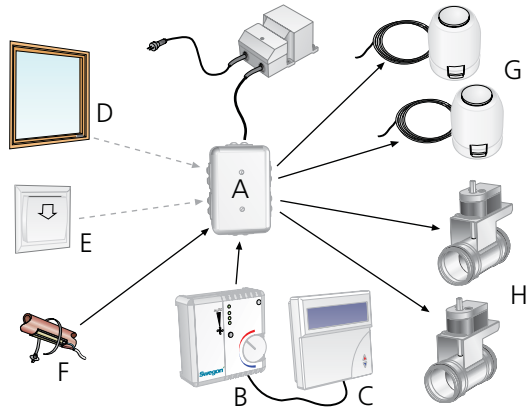

Figure 8. TITAN control equipment with accessories

A = Controller
B = Room thermostat
C = Hand-held terminal
D = Window contact (external)
E = Key card reader for registering presence (external)
F = Condensation sensor
G = Valve actuators for chilled water and hot water circuits
H = Motor-actuated supply air and extract air dampers

Sizing

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_l: 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 = adjustment

Recommended limit values, water

Max. recommended operating pressure (across coil only):	1600 kPa
Max. recommended test pressure (across coil only):	2400 kPa
Max. recommended pressure drop (across standard valve):	20 kPa
Min. permissible hot water flow:	0.013 l/s
Max. permissible inlet flow temperature:	60 °C
Min. permissible cooling water flow:	
800 mm long unit:	0.02 l/s
1000 mm ling unit:	0.04 l/s
Lowest permissible inlet flow temperature:	Must always be sized to enable the system to operate without condensation forming.

Cooling

Cooling capacity

Cooling capacities achieved from both the primary air and chilled water for various lengths of unit, damper settings and airflows are tabulated in Table 1. The total cooling capacity for one unit is the sum of the cooling capacity of the primary air and the chilled water.

The cooling capacity of the primary air can also be calculated using the formula:

$P_l = 1.2 \cdot q_l \cdot \Delta T_l$ where

P_l = Cooling capacity of the air (W)

q_l = Airflow (l/s)

ΔT_l = Temperature difference (K)

Pressure drop

The pressure drop on the water side can be calculated using the formula:

$\Delta p = (q / k_{pk})^2$ where

Δp = Pressure drop in the water circuit (kPa)

q = Water flow (l/s), see Diagram 1

k_{pk} = Pressure drop constant, see below

800 mm long Primo, k_{pk} = 0.0096

1000 mm long Primo, k_{pk} = 0.0206

k_{pk} values are applicable to the pressure drop across the coil.

Capacity correction

Different water flows have a certain effect on the cooling output. To calculate the actual cooing capacity based on a flow-dependent correction figure, use the Swegon ProSelect software available at www.swegon.com.

Diagram 1. Cooling capacity

The function between cooling capacity P_k (W), change in temperature ΔT_k (K) and chilled water flow q_k (l/s).

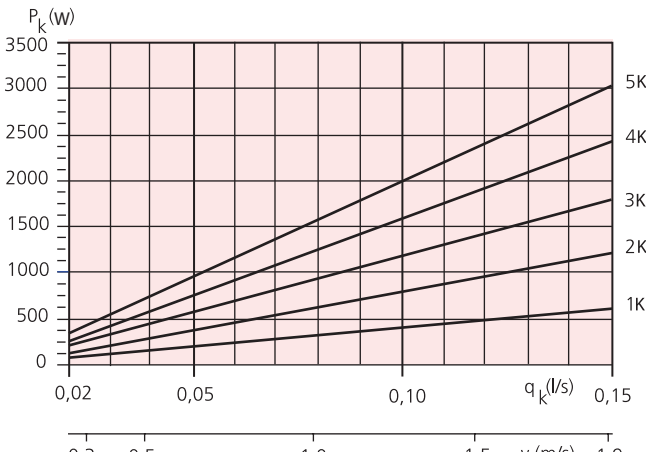

Table 1. Cooling capacity, 200 Pa duct pressure

Length (mm)	Damper setting	Air-flow (l/s)	Sound Level [1] dB(A)	Nozzle pres-sure, p_{in} (Pa)	Cooling capacity, primary air for ΔT_i K (W)				Cooling capacity [2] water for ΔT_{mk} K (W)							
					6	8	10	12	5	6	7	8	9	10	11	12
800	Low	9	27	50	68	91	113	136	166	197	229	260	291	322	353	384
800	**Normal**	14	26	110	101	134	168	202	235	281	326	372	418	463	508	554
800	High	19	28	195	134	179	224	268	298	355	412	468	524	580	636	691
800	Low	12	27	50	85	113	142	170	176	208	241	273	305	337	369	400
800	**Normal**	17	26	110	126	168	210	252	243	290	336	382	427	473	518	563
800	High	23	29	190	166	221	276	331	302	359	417	474	530	587	643	699
800	Low	14	28	50	100	133	166	199	181	215	248	280	313	345	377	409
800	**Normal**	20	28	110	148	197	246	295	248	295	342	389	436	482	528	574
800	High	27	30	186	192	256	320	384	303	361	418	476	533	589	646	702
1000	Low	12	27	50	85	113	142	170	219	259	299	338	377	415	453	491
1000	**Normal**	17	25	110	126	168	210	252	303	360	417	473	529	585	640	696
1000	High	23	29	188	165	220	275	329	372	442	512	581	650	718	787	854
1000	Low	14	29	50	102	136	170	204	232	274	315	356	396	436	476	515
1000	**Normal**	21	28	110	151	202	252	302	319	381	442	503	564	625	686	746
1000	High	27	31	186	197	262	328	393	390	464	538	612	685	758	831	904
1000	Low	17	29	50	126	168	210	252	232	274	315	356	397	437	477	517
1000	**Normal**	26	30	110	187	250	312	374	326	387	447	507	566	625	686	746
1000	High	33	34	180	239	319	399	479	390	464	538	612	685	758	831	904

[1] The specified sound level refers to a unit built into the load carrying grid with suspended ceiling panels, mounted CLA sound attenuator and CRT damper.
The sound level for an exposed unit will increase by approx. 2 dB(A). Room attenuation: 10 m^2 Sabine.

[2] The specified cooling water capacity refers to a built-in unit with extension connection fitting and Swegon's recommended supply air and return air grilles.

The table above can be used for sizing with the damper set to the **Normal** setting for the airflow and cooling capacity required. The tabulated values for the Low damper setting are applicable when there are no occupants in the room and to manual climate control via a room thermostat. The tabulated values for the "High" damper setting are relevant during the first minutes after occupants have been detected inside the room and to manual climate control.

Heating

Pressure drop

The pressure drop on the water side can be calculated using the formula:

$\Delta p = (q / k_{pv})^2$ where

Δp = Pressure drop in the water circuit (kPa)

q = Water flow (l/s), see Diagram 2

k_{pv} = Pressure drop constant, see below

800 mm long Primo, k_{pv} = 0.0216

1000 mm long Primo, k_{pv} = 0.0192

The k_{pv} values above are applicable to the pressure drop across the coil.

For more detailed pressure drop calculation, use Swegon ProSelect software available at www.swegon.com.

Diagram 2. Heating capacity

The function between the heating capacity P_v (W), the change in temperature ΔT_v (K) and the hot water flow q_v (l/s).

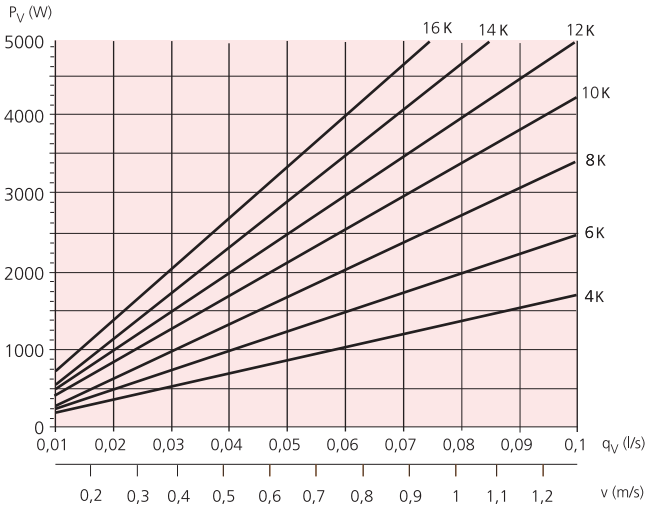

Table 2. Heat capacity for natural convection without primary air

Unit length (mm)	Heat capacity for ΔT_{mv} K (W)					
	15	20	25	30	35	40
800	99	151	209	272	341	414
1000	179	272	376	490	613	745

Table 3. Heating capacity, 200 Pa duct pressure

Length (mm)	Damper setting	Airflow (l/s)	Sound Level [1] dB(A)	Nozzle pressure p_i (Pa)	Heating capacity [2] Water for ΔT_{mv} K (W)					
					15	20	25	30	35	40
800	Low	9	27	50	264	354	450	542	639	741
800	**Normal**	14	26	110	323	430	543	652	767	886
800	High	19	28	195	367	492	617	743	870	999
800	Low	12	27	50	278	374	471	568	666	764
800	**Normal**	17	26	110	332	444	556	669	782	895
800	High	23	29	190	373	501	628	756	885	1014
800	Low	14	28	50	282	380	479	578	674	776
800	**Normal**	20	28	110	337	452	566	681	792	909
800	High	27	30	186	375	501	629	757	889	1021
1000	Low	12	27	50	341	457	580	698	824	955
1000	**Normal**	17	25	110	416	555	701	842	990	1144
1000	High	23	29	188	477	639	801	965	1130	1297
1000	Low	14	29	50	356	478	602	726	851	977
1000	**Normal**	21	28	110	435	581	728	875	1023	1171
1000	High	27	31	186	479	642	806	970	1135	1300
1000	Low	17	29	50	357	481	606	732	854	983
1000	**Normal**	26	30	110	436	585	733	882	1026	1178
1000	High	33	34	180	479	642	806	970	1135	1300

[1] The specified sound level refers to a unit built into the load carrying grid with suspended ceiling panels, mounted CLA sound attenuator and CRT damper.
The sound level for an exposed unit will increase by approx. 2 dB(A). Room attenuation 10 m² Sabine.

[2] The specified heating water capacity refers to a built-in unit built with extension connection fitting and Swegon's recommended supply air and return air grilles.

The table above can be used for sizing with the damper set to the **Normal** setting for the airflow and heating capacity required. The tabulated values for the Low damper setting are applicable when there are no occupants in the room and to manual climate control via a room thermostat. The tabulated values for the High damper setting are relevant during the first minutes after occupants have been detected inside the room and to manual climate control.

Sound

Sound power

The sound power level broken down into frequencies (L_W) can be calculated using the formula:

$L_W = L_A + K_1$ where

L_W = Sound power frequency divided (dB)
L_A = Sound level [dB(A)] read from Table 1 or 3
K_1 = Correction factor (dB), see Table 4

Table 4. Correction factor K_1

Nozzle pressure, p_{in} (Pa)	Correction factor K_1 (dB) for various values of f (Hz)							
	63	125	250	500	1k	2k	4k	8k
50	–13	–1	–1	–5	–7	–7	–11	–16
110	–9	–3	–3	–4	–2	–6	–11	–15
200	–23	–19	–12	–4	–1	–1	–6	–11

Natural attenuation

Natural attenuation is the total reduction in sound power from duct to room including the end reflection of the unit.

Table 5. Natural attenuation with cladding

Length (mm)	Natural attenuation (dB) for mid frequency f (Hz)							
	63	125	250	500	1K	2K	4K	8K
800	20	14	15	13	16	19	14	15
1000	18	13	14	11	15	17	13	14

Without cladding, the natural attenuation will be approx. 3 dB lower.

Example

Cooling

Design conditions

A hotel room having dimensions L × W × H = 3.7 × 3.5 × 2.7 m is to be ventilated, cooled and heated with Primo Hotel. The cooling demand is estimated to be 50 W/m^2 for an occupied room and normal load conditions. In rare cases the load conditions may be slightly higher and are then estimated to be 65 W/m^2. The cooling demand is then a total of 50 · 3.7 · 3.5 = 648 W and 65 · 3.7 · 3.5 = 842 W respectively.

Under normal load conditions, the supply air flow should be 21 l/s and have a temperature of 16 °C. For higher load conditions, an increase in supply air flow up to a maximum of 30 l/s is permissible. The available duct pressure is kept constant at 200 Pa. The sound level must not exceed 30 dB(A) under normal circumstances and 35 dB(A) in the event of higher load conditions.

The design room temperature in the summer case is set to 24 °C. The inlet temperature of the cooling water is 15 °C and its outlet temperature on returning is 17 °C.

Solution

The 16 °C supply air temperature and the 24 °C room temperature provide ΔT_l = 8 K.

The temperature increase of the cooling water is 17 – 15 = 2 K.

The mean temperature of the cooling water is (15 + 17) / 2 = 16 °C.

The 16 °C mean temperature of the cooling water and the 24 °C room temperature provide ΔT_{mk} = 8 K.

Normal case

Calculate the cooling capacity of the supply air: P_l = 1.2 · 21 · 8 = 202 W.

The residual cooling capacity required by the cooling water will be:
648 – 202 = 446 W.

Table 1 indicates that one Primo H with length L = 1000 mm provides 503 W in cooling capacity for a supply airflow of 21 l/s and ΔT_{mk} = 8 K. This capacity is sufficient for managing the cooling demand.

From Diagram 1 we read 503 W capacity and an increase in cooling water temperature of 2 K as well as a water flow of approx. 0.060 l/s. Using the water flow and pressure drop constant k_{pk} we can calculate the pressure drop across the coil:

$\Delta p_k = (0.060 / 0.0206)^2 = 8.5$ kPa.

Read from Table 1, the sound level is 28 dB(A), which meets the max. permissible level of 30 dB(A) required.

High load conditions

Under high load conditions, the automatic function in the TITAN control equipment opens the motor-actuated damper to the fully opened setting. A constant duct pressure of 200 Pa provides a supply air flow of 27 l/s which is lower that the max. permissible flow of 30 l/s required.

Calculate the cooling capacity of the supply air:
P_l= 1.2 · 27 · 8 = 259 W.

The residual cooling capacity required by the cooling water will be:
842 – 259 = 583 W.

Table 1 indicates that one Primo H with length L = 1000 mm provides 612 W in cooling capacity for a supply airflow of 27 l/s and ΔT_{mk} = 8 K. This capacity is sufficient for managing the higher cooling demand.

From Diagram 1 we read 612 W capacity and an increase in cooling water temperature of 2 K as well as a water flow of approx. 0.073 l/s. Using the water flow and pressure drop constant k_{pk} we can calculate the pressure drop across the coil:

$\Delta p_k = (0.073 / 0.0206)^2 = 12.6$ kPa.

Read from Table 1, the sound level is 31 dB(A), which meets the max. permissible level of 35 dB(A) required for high load conditions.

Heating

Design conditions

The prerequisites are the same as in the example for cooling, with the exception that the design room temperature in the winter case is 22 °C and the supply air temperature is 18 °C.

The heating demand is estimated at 40 W/m^2 for an occupied room and with normal load conditions. In rare cases, the load conditions may be slightly higher and are then estimated to be 54 W/m.^{2}. The heating demand is then a total of 40 · 3.7 · 3.5 = 518 W and 54 · 3.7 · 3.5 = 699 W respectively.

The inlet temperature of the heating water is 50 °C and the return temperature is 44 °C.

Solution

The 18 °C supply air temperature is lower than the 22 °C design room temperature and then has a negative effect on the heating capacity:

1.2 · 21 · (22 – 18) = 101 W.

The heating demand for heating water then increases to 518 + 101 = 619 W and 699 + 101 = 800 W respectively.

The 47 °C mean temperature of the heating water and the 22 °C room temperature provide ΔT_{mv} = 47 – 22 = 25 K.

Table 3 indicates that one Primo H with length L = 1000 mm provides 728 W in heating capacity for a supply airflow of 21 l/s and ΔT_{mk} = 25 K. This capacity is sufficient for managing the heating demand under normal load conditions (619 W). From the same table we read 806 W with the damper in the high flow setting which covers the demand under high load conditions (800 W).

From Diagram 3 we read a capacity of 728 W and a 6 K decrease in heating water temperature as well as a water flow of approx. 0.030 l/s.

Using the water flow and the pressure drop constant k_{pv} we can calculate the pressure drop across the coil:

$\Delta p_k = (0.030 / 0.0192)^2 = 2.4$ kPa.

The same calculation for the heating capacity under high load conditions provides the pressure drop $\Delta p_k = (0.033 / 0.0192)^2 = 3.0$ kPa.

ProSelect

Planning and sizing based on given design considerations can also be carried out in Swegon's software ProSelect, that is available at Swegon's home page: www.swegon.com.

Dimensions

Length

Primo Hotel is available in two lengths, L = 800 and 1000 mm.

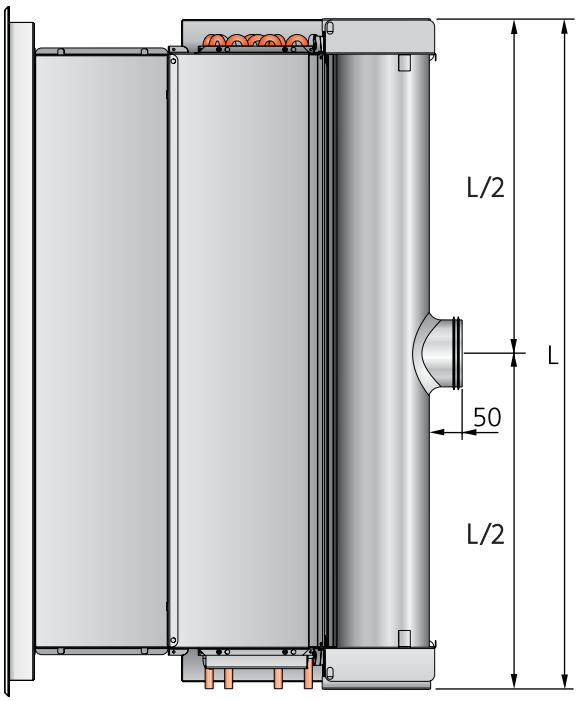

Figure 9. View from above of unit with extension connection fitting

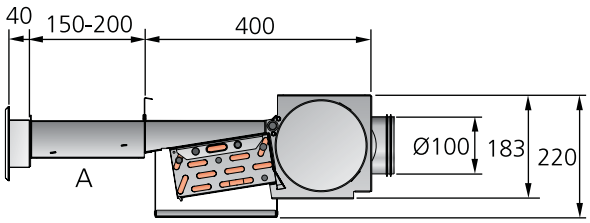

Figure 10. View of end panel with extension connection fitting

A = Extension connection fitting, L = 150–200 mm

Pipe connections

Figures 11 and 12 below show the pipe connections with dimension for both lengths of Primo Hotel

SC = Cooling water, inlet pipe
RC = Cooling water, return pipe
SH = Heating water, inlet pipe
RH = Heating water, return pipe

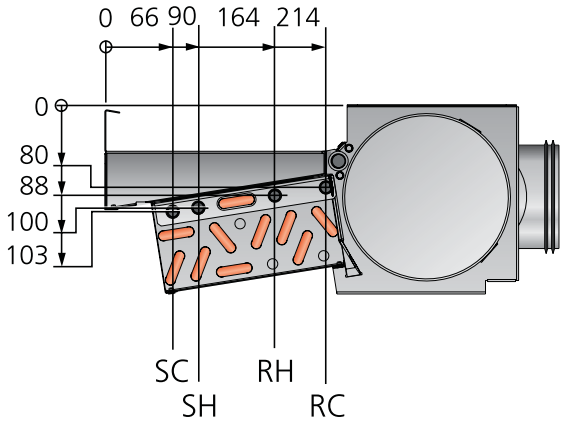

Figure 11. Pipe connection for 800 mm long unit

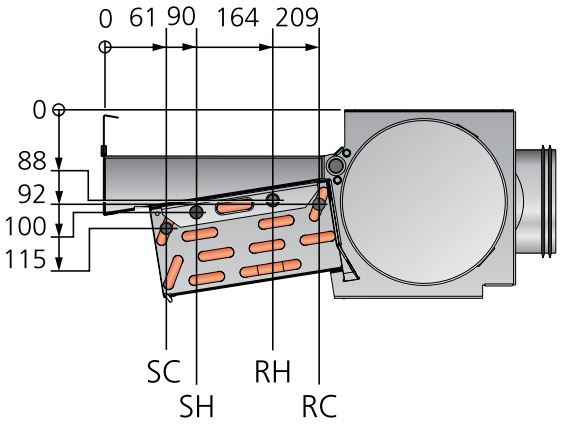

Figure 12. Pipe connection for 1,000 mm long unit

Table 6. Weight

Length (mm)	Dry weight (kg)	Filled with water(kg)
800	9.7	11.0
1000	12.0	13.6

Specification

Type Primo Hotel indoor climate system for cooling, heating and ventilation. Swegon's room control equipment and necessary accessories for connecting pipework and air supply shall be included in the system.

Limits of supply

Swegon's limits of supply are at the connection points for water. At these connection points the plumbing contractor connects to plain pipe ends, fills the system, vents and performs pressure testing.

The ventilation contractor connects to the duct connections with dimensions as specified on the basic size drawing in the section "Dimensions".

The electrical contractor provides an earthed 220 V socket for each transformer and a fitted connection box in the wall for the 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.

Ordering Key for the Primo Hotel

PRIMO	PRIMO a H-	bbbb-	c-	dd
Length (mm): 800 1000				
Pipe connections: L = Left-hand R = Right-hand (viewed from outlet connection fitting)				
Normal airflow (l/s): 800 mm: 14, 17, 20 1000 mm: 17, 21, 26				

Ordering Specification, Accessories

Control equipment

See separate product datasheet for the TITAN control equipment.

Extension connection fitting	PRIMO a T-OE-	aaaa
Length (mm): 800 1000		

Drip tray	PRIMO a H-T-CT-	aaaa
Length (mm): 800 1000		

Asssembly piece	SYST MS	aaa-1
Threaded rod, length (mm): 200 500		

Supply air grille	GTHc	aaaa-	bbb
Length (mm): 800 1000			
Height (mm): 100 200			

Important:: A supply air grille with a height of 200 mm must be selected if it will later be necessary to dismount the drip tray through the wall opening of the grille.

Return air grille	ALGc	aaaa-200
Length (mm): 800 1000		

Sound attenuator	CLAc 100-500-1

Damper (2 dampers)	CRTc 100-2
Motor options: Sauter ASM 114SF901	

Extract air register	EXCa	aaa-	b
Diameter (mm): 100 125			
Mounting frame : 1 = Insertion joint connection without seal 2 = Rubber-sealed insertion joint connection 3 = Conical frame for connection to an insertion joint			

Explanatory text

Example of explanatory text to Swedish VVS AMA standard.

KB XX

Swegon's Primo Hotel climate system consists of the climate units, electronic room control equipment and necessary accessories for the connection of pipes and ventilation components, and has the following functions:

- Cooling
- Heating
- Ventilation

The Swegon delivery shall include all material for each unit shown in the drawings for the physical limit of the supply.

Each unit should be supplied with preset prescribed airflow (optional).

The building contractor shall mark reference lines in the ceiling for the suspension of the climate unit.

The building contractor cuts the opening in the corridor wall for air ducts as set out on the drawing.

The ventilation contractor connects to the duct connections with dimensions as set out on the drawing.

The plumbing contractor connects to 12 mm dia. plain pipe ends, fills the system, vents and performs pressure testing and is accountable for seeing to it that the water flow reaches each branch of the system.

The electrical contractor provides an earthed 220 V socket for each transformer placed at the most 1000 mm from the transformer.

The electrical contractor installs a mounting box for each room thermostat as set out in the drawing.

The electrical contractor insulates between the cable trunking and the climate unit.

Accessories:

Extension connection fitting PRIMO a T-OE-aaaa, xx pcs

Drip tray PRIMO a H-T-CT-aaaa, xx pcs

Assembly piece SYST MS aaa-1, xx pcs

Supply air grille GTHc aaaa-bbb, xx pcs

Return air grille ALGc aaaa-200, xx pcs

Sound attenuator CLAc 100-500-1, xx pcs

Damper CRTc 100-2 with Sauter ASM 114SF901 motor

Extract air register EXCa aaa-b

Specify the quantity in digits or with reference to the drawing.

Size:

PRIMO a H-bbbb-c-dd, xx pcs

PRIMO a H-bbbb-c-dd, xx pcs

Specify the quantity in digits or with reference to the drawing.

Control equipment:

See separate product datasheet for the TITAN or LUNA.