GOLD

Air Handling Unit

Operation & Maintenance Instructions

GOLD PX version G



Swegon

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The document was originally written in Swedish.

We reserve the right to alter specifications.

1. Safety Instructions

All staff concerned must acquaint themselves with these instructions before beginning any work on the unit. Any damages to the unit or parts of it due to improper handling or misuse by the purchaser or the fitter cannot be considered subject to guarantee if these instructions have not been followed correctly.

Warning

Only a qualified electrician or service personnel trained by Swegon shall be permitted to carry out any work on the electrical system or wire external functions in the air handling unit.

1.1 Safety Isolating Switch/ Main Switch

On the size 004/005, 007/008, 011/012 and 014/020 units, the safety isolating switch is externally located on the connection hood.

On the size 025/030, 035/040/040+, 050+/060+ and 070/080 units, the safety isolating switch is externally located on the centre section of the unit.

The air handling unit should normally be started and stopped from the hand-held terminal; not by switching the safety isolating switch on and off.

Always switch off the safety isolating switch before servicing the unit if not otherwise specified in the pertinent instructions.

1.2 Risks

Warning

Before carrying out any work, make sure that the power supply to the air handling unit has been switched off.

Risk areas with moving parts

Typical moving parts are fan impellers and bypass/shut-off dampers for heat exchangers.

The lockable inspection doors serve as protection from contact with the fans and protection for the heat exchanger. If the ducts are not firmly connected to the fan outlets, the outlets must be firmly fitted with a safety guard (wire mesh screen).

The air handling unit has an automatic restart function in the event of loss of power. It can be deselected via the control system under Setup/Air handling unit/Start sequence.

Warning

The inspection doors on the filter/fan sections must not be opened while the unit is operating.
Stop the unit operating normally via the hand-held micro terminal.
Wait until the fans have stopped before opening the door.
There is positive pressure inside the fan section which could cause the door to fly open.
The key must be stored separately from the air handling unit by an authorised person.

1.3 Safety Guards

The cover of the electric equipment cubicle and, in applicable cases, the connection hood serve as safety guards.

Only a qualified electrician or trained service technicians shall be allowed to remove the safety guards.

Warning

The power supply to the unit shall be isolated by switching off the safety isolating switch before removing the safety guard.

When the air handling unit is operating, the safety guards must always be mounted, all inspection doors must be closed, and the junction hood on the top of the unit must be mounted.

2. General

2.1 Handling the air handling unit before commissioning

The air handling unit and its duct connections should be protected against wetness and condensation until the unit is commissioned.

2.2 Range of Application

The GOLD units are designed for use in comfort ventilation applications. Depending on the variant selected, GOLD units can be utilised in buildings such as office buildings, schools, day nurseries, public buildings, shops, residential buildings, etc.

The GOLD PX units can also be used for the ventilation of moderately humid buildings; however not where the humidity is continuously high, such as in indoor swimming baths.

In order to fully obtain all the benefits the GOLD system has to offer, it is important to take the special characteristics of the air handling units into account when planning them into the project, installing, commissioning and operating them.

The air handling unit in its basic design should be installed indoors. The TBTA/TBTB accessory should be used if the air handling units are installed outdoors. If the duct accessories are installed outdoors, they must be housed in an insulated casing (type TCxx).

The GOLD PX is designed and tested for temperatures, in the surroundings and the air stream, from -40°C to +40°C.

The fans are approved for continuous operation in temperatures of up to 40°C.

The fans are tested for, and can manage operation for one hour at 70°C.

Important!

Always read the safety instructions in Section 1 that explain the risks involved in running the unit and designate who shall be permitted to operate and service the unit, and carefully follow the installation instructions provided in each paragraph.

The product identification plates are located on the inspection side of the air handling unit and on a wall inside the fan section. Refer to the particulars on the product identification plate when you contact Swegon.

2.3 Mechanical Design

The GOLD PX units are available in 9 physical sizes and for 18 air flow ranges.

GOLD PX has supply air filters and extract air filters made of glass fibre in filter class ePM10 60% (M5) or ePM1 60% (F7).

The plate heat exchangers are as standard equipped with bypass and shut-off dampers for variable and automatic control of the heat exchanger's efficiency on heat recovery.

Direct-driven GOLD Wing+ fans, equipped with IE5-class EC/PM motors, provide even airflow and low noise level. The fans are designed for high efficiency and are dimensioned for continuous operation at temperatures up to 40°C. Easy maintenance and vibration isolation.

2.4 Control System

The IQlogic control system is microprocessor-based and is integrated into the air handling unit. It controls and regulates the fans, heat exchanger, temperatures, airflows, Operation times and a large number of internal and external functions as well as alarms.

2.5 Environmental Documentation

For a complete Declaration of Construction Materials, see our home page at www.swegon.com (applicable to Sweden only).

The air handling unit is designed in such a way that it can be easily dismantled into its component parts. When the unit has ended its useful product life, the services of an accredited recycling company should be utilised for disposal.

The recyclable weight of the GOLD is about 94% of its initial weight.

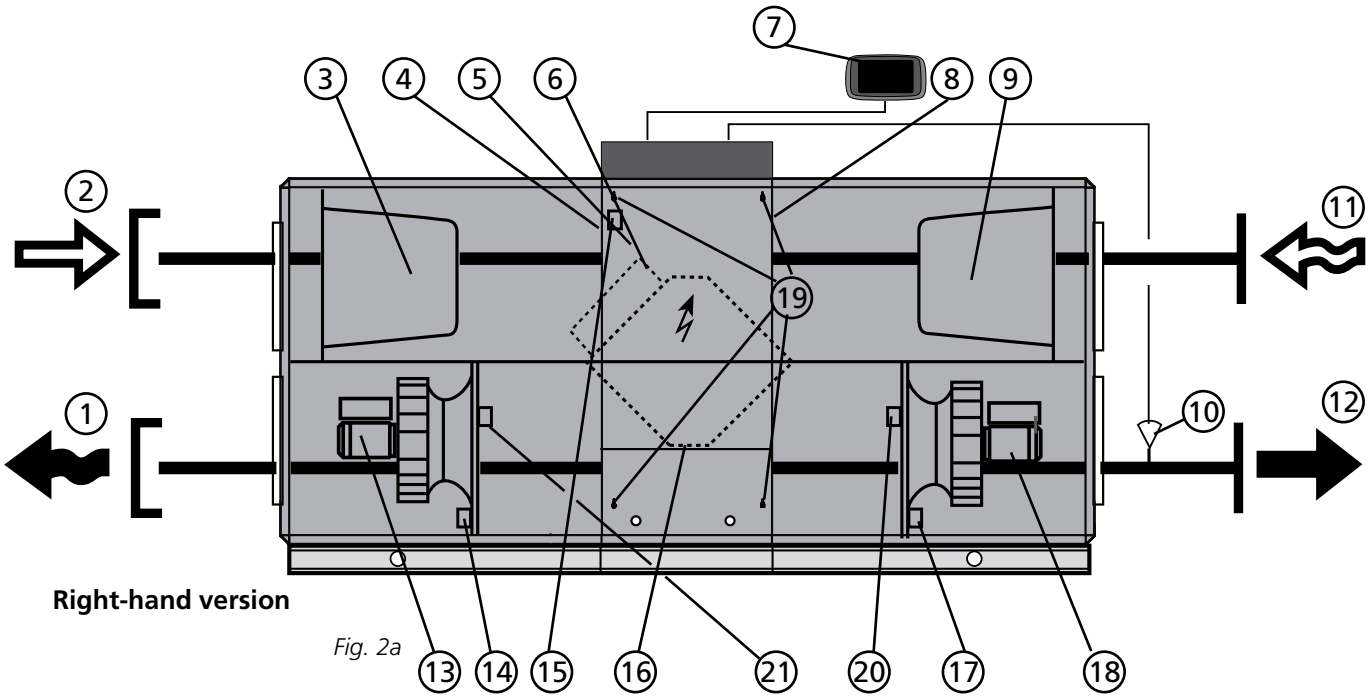
Swegon AB is associated with the REPA Register, No. 5560778465.

Contact Swegon AB, Phone: +46 (0)512-322 00, if you have any questions regarding the dismantling instructions or the air handling unit's impact on the environment.

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2.6 The Components of the Air Handling Units

The individual components are each specified below in a simplified and diagrammatical description.



Right-hand version

Fig. 2a



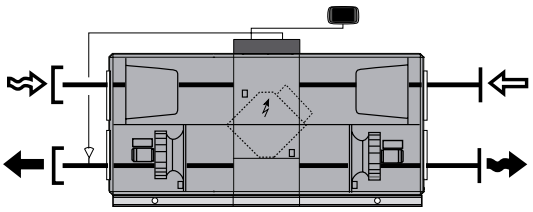


Fig. 2b

Left-hand version

The air handling units are supplied in the right-hand or left-hand version as shown in Fig. 2a and 2b. In the left-hand version (Fig. 2b), the components marked with an asterisk change function and designation (the components are named according to whether the function is for supply air or extract air.).

The arrangement of the components and their designations

1 EXHAUST AIR* (In left-hand version: Supply air)
2 OUTDOOR AIR* (In left-hand version: Extract air)
3 Supply air filter*
4 Temperature sensor, outdoor air*
5 Electrical equipm. cubicle with control unit
6 Valve actuators, shut-off and bypass dampers
7 Handheld terminal
8 Temperature/relative humidity sensor, extract air* (RECOfrost only)
9 Extract air filter*
10 Temperature sensor, supply air (to be mounted in supply air duct)
11 EXTRACT AIR* (In left-hand version: Outdoor air)
12 SUPPLY AIR* (In left-hand version: Exhaust air)
13 Extract air fan* with motor and motor controller
14 Pressure sensor, extract air fan* and pressure sensor, supply air filter*
15 Extract air/exhaust air pressure sensor (applies only to RECOfrost)
16 Plate heat exchanger with bypass and shut-off damper
17 Pressure sensor, supply air fan* and pressure sensor, extract air filter*
18 Supply air fan* with motor and motor controller
19 Tappings for measuring pressure drop across the heat exchanger.
20 Temperature/air density sensor, supply air.
21 Temperature/air density sensor, exhaust air.

3. Commissioning

3.1 General

If the air handling unit is supplied in a split design and is assembled on site, ensure that the air handling unit sections are assembled correctly.

Commissioning sequence:

1. Check that there are no foreign objects inside the unit, duct system or functional sections.
2. Turn the safety isolating switch to the ON position (I).
3. Select the appropriate language, if you have not already done so. See Section 4.7 in the GOLD Function Manual, Installation
4. The air handling unit has a factory setting that makes it ready to operate. See separate Commissioning Record.

   However, in many cases, these settings need to be adjusted to suit the current installation.

   If necessary, enter the fan position setting (inspection side), see Section 4.10 in the Function Manual, Installation.

   Program the time switch, operating mode, temperatures, airflows and functions according to Section 4 in the Function Manual, Installation.

   Select whether the airflow unit of measurement shall be l/s, m^3/s, m^3/h or cfm.

   Fill out the Commissioning Record and save it in the document pocket of the air handling unit.

   Alternatively, create a commissioning protocol automatically via the hand-held terminal/web page under Functions/Setup/Base setting/Commissioning protocol. The protocol is saved to SD card/USB memory on the IQlogic control unit.

   In some cases it might be necessary to adjust the P-band and the I-time if the heating regulation system is oscillating or operates sluggishly. This requires entering a special code. Contact your Swegon representative.
5. Activate, if needed, manual or auto operation (Dashboard) or lock the speed of the fans (AIRFLOW ADJUSTMENT image). Adjust the duct system and the air diffusers according to Section 3.2.
6. Finish with filter calibration according to Section 3 in the Function Manual, Installation.

We reserve the right to alter specifications.

3.2 Adjusting the Duct System and air diffusers

In order to prevent the fans from consuming more power than necessary, it is important to keep the pressure drop in the system at the lowest possible level. It is also important that duct systems and air diffusers are correctly commissioned to provide the comfort expected.

When commissioning air diffusers and the duct systems for the GOLD, it is appropriate to follow the proportionality method.

This means that the ratio between the airflows in branch ducts remains constant even if you change the airflow in the main ducts. The same ratio applies to the air diffusers in the installation.

When commissioning the duct system there is provision for locking the speed of the fans in the air handling unit to provide a specific preset flow rate, see Section 4.1.7 in the Function Manual, Installation.

3.2.1 Adjustment Sequence

The system should be adjusted in the following order:

1. Adjust of the air diffusers in each branch duct.
2. Adjust the branch ducts.
3. Adjust the main ducts.

3.2.2 Commissioning procedure

1. Set all the air diffusers and dampers to the fully open position.
2. Calculate the quotient between the airflow reading and the design airflow of all the air diffusers, branch ducts and main ducts. The air diffuser in every branch that has the lowest quotient should be fully open. Use this air diffuser as an INDEX AIR DIFFUSER. The same applies to branch dampers and main dampers.

   When you've finished commissioning, one air diffuser in every branch, one branch damper and one main damper should consequently be fully open.
3. Start adjusting the main duct that has the highest quotient and the branch duct in the main duct that has the highest quotient. Starting from this point enables you to then "press" the air in front of you toward the sections of the system that have the least air.
4. Adjust the last air diffuser on the duct branch so that it will have the same quotient as the index air diffuser. This air diffuser becomes the REFERENCE AIR DIFFUSER. The last air diffuser on the branch is often the one that has the lowest quotient and this air diffuser should be open. In this case, the index air diffuser and the reference air diffuser will be one and the same.
5. Throttle the other air diffusers in the branch to the same quotient as the reference device.

   NOTE! The quotient in the reference terminal will change every time another air diffuser is throttled, so in practice the quotient for the reference air diffuser can be set slightly higher. The reference device must be measured in between each air diffuser throttled.
6. Go to the branch that had the next highest quotient and adjust the air diffusers there, etc.

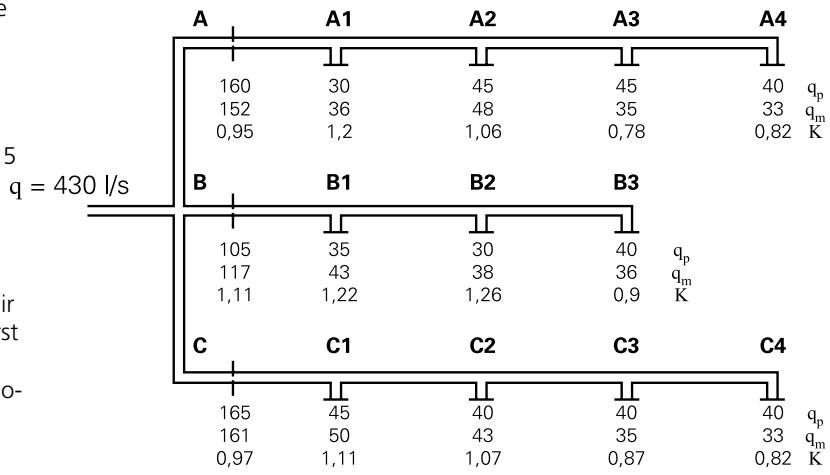
   NOTE! All branch dampers should be fully open until all air diffusers have been adjusted.
7. Throttle the branch damper that had the highest quotient to the same quotient as the branch that had the lowest quotient.

   NOTE! Keep in mind that the index damper changes quotient; proceed as described in item 5.
8. When all branches have been commissioned, throttle the main dampers in the same manner.

See also Adjustment example below.

Example on how to make an adjustment

– Start adjusting duct branch B, since this one has the highest quotient.
– The last air device, B3, has the lowest quotient and should be fully open.
Adjust the other air devices, B1 and B2, so that these will have the same quotientas air device B3 (see item 5 above).
– Now adjust the air devices in branch duct C. Air device C4 should be fully open; throttle the others to the same quotient.
– Adjust the air devices in branch duct A. The index air device here is air device A3, which means that you first throttle air device A4 (the reference device) to device A3:s quotient. Then adjust the others to the same quotient as air device A4.
– Throttle branch damper B to the same quotient as branch damper A, throttle branch damper C to the same quotient as branch damper A.
Check that all dampers have the same quotient.
When commissioning has been completed, 3 air devices and one branch damper should stand fully open to obtain the lowest possible pressure in the system.



qp = design airflow (l/s)

qm = flow reading (l/s)

$$K\ (\text{Quotient}) = \frac{qm}{qp}$$

4. Maintenance

Warning

Before carrying out any work, make sure that the power supply to the air handling unit has been switched off.

4.1 Filter change

Filters made of glass fibre should be replaced, and if a pre-filter made of woven aluminium is fitted, it should be washed, when the corresponding filter alarm has been activated.

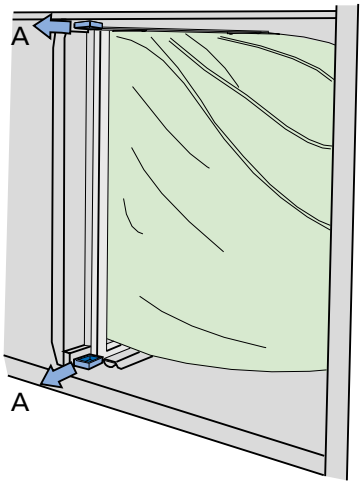
Order new filters from Swegon or your nearest Swegon representative. Specify the size of the GOLD unit, whether the replacement concerns one or two directions of airflow and if you are replacing standard filters and/or possibly a pre-filter.

4.1.1 Dismantling the filters

It is advisable to clean inside the filter space while the filters are removed.

Standard filters:
Pull out the handles (A) to free the filters from the filter holder. Withdraw the filters.

Possible pre-filters inside the air handling unit:
Withdraw the filters.



4.1.2 Installing new filters

Standard filters:
Insert the filters into the filter holder At the same time, draw out the filter bags, if installed, so that they will not become caught, damaged or folded.

Insert the filters as far as possible into the unit and press them lightly against the filter frames, so that they fit tightly.

Push in the handles (A) to clamp the filters in position in the filter holder.

Close the inspection doors.

Finish with filter calibration according to Section 2 in the Function Manual, Users.

Pre-filters, if installed, in the AHU:
Insert the filters in the filter guide rails as far as possible into the AHU and press them lightly against the filter frames, so that they fit tightly.

Finish with filter calibration according to Section 2 in the Function Manual, Users.

We reserve the right to alter specifications.

4.2 Cleaning and Inspection

4.2.1 General

Access for cleaning must be ensured when planning and during the installation of the air handling unit. This can, for example, include the set-up of the unit, and pipe and cable routing.

Clean the interior of the air handling unit if needed. Inspection of the air handling unit should be performed when you change filters or at least twice a year.

4.2.2 Filter spaces

The most appropriate time to clean the unit is when you change the filters.

4.2.3 Heat exchangers

Check whether cleaning is necessary at least twice a year. Cleaning can be done from the filter space.

Always clean against the regular direction of airflow.

Cleaning must only be done by blowing with compressed air, vacuum cleaning with a soft nozzle or wet cleaning with water and/or solvent. Before you begin cleaning, cover adjacent functional sections to protect them.

If cleaning solvent is used, do not use solvent that will corrode aluminium or copper. Swegon's cleaning agent is recommended. This cleaning agent is sold by Swegon Service.

Inspect the drain to make sure that it isn’t clogged. The by-pass and shut-off dampers do not require maintenance.

4.2.4 Fans and fan spaces

Inspect and, if needed, clean the fan impellers to remove dirt deposits.

Check the impeller to make sure that it is not out of balance.

Check the bearings for noise.

Vacuum clean the fan motor or brush its surfaces. It can also be cleaned by carefully wiping it with a damp cloth and dishwashing detergent.

Clean the fan space, if needed.

4.3 Service and Functionality Check

Service and functionality inspections shall be carried out at the interval specified below.

Item to check	Action	6-monthly service	12-monthly service
Service			
Filters	To be replaced when the display screen indicates a filter alarm. Check that the filter installation frame is in working order and is tight.		x
Fans, heat exchangers, duct accessories	Inspect and clean if necessary.	x	
Internal surfaces	Inspect and clean if necessary.	x	
External surfaces	Inspect and clean if necessary.		x
Gaskets, sealing strips, bearings, drive belts	Inspect and remedy if necessary.		x
Sensors, cabling, measuring tubes	Carry out visual inspection and remedy if necessary.		x
Functionality inspection			
Safety functions, fire and frost protection, etc.	To inspect the functionality.		x
Other control functions	To inspect the functionality. Compare the air handling unit's values with the commissioning report. Remedial measures should be taken to correct any possible inconsistencies.		x
Alarm history	Review.	x	

4.4 Warranty

To submit a warranty claim, you must be able to produce a complete documented and signed Service and Functionality Inspection Report of the product with hits accessories.

A Service and Functionality Inspection Report must be performed according to the instructions in Sections 4.1, 4.2 and 4.3.

General conditions for warranty liability are given in the delivery provisions applicable to the supply.

5. Alarms and Troubleshooting

5.1 General

Alarms are displayed by a flashing red LED in the hand-held terminal.

When the LED flashes, go in under Alarm log in the instrument panel, see Section 2.2.3 in the Operating Procedures Manual of the IQnavigator hand-held micro terminal.

Active alarms, pending alarms and alarm history (50 latest) can be viewed under Alarm log.

For resetting alarms, you can select individual alarms or all the alarms.

The reset time can also be viewed under History.

A fault can be traced by examining the function or functional component indicated in the alarm text.

If the fault cannot be immediately remedied:
Consider whether the air handling unit can continue to operate until the fault has been remedied. Choose to block the alarm and/or to change from stop to operation. See Section 4.8.6 in the Function Manual, Installation.

5.1.1 A and B Alarms

A alarms send an indication to the output for alarm relay A (IQlogic module+).

B alarms send an indication to the output for alarm relay B (IQlogic module+).

Alarms can be forwarded with different priority via these relays.

5.1.2 To Reset Alarms

Alarms with manual resetting can be reset from the hand-held terminal. Select reset in the alarm log.

Alarms that reset themselves automatically will do so as soon as the fault has been remedied.

Alarms can also be reset via a communication network (not applicable to frost guard alarm).

5.1.3 To Change Alarm Priority

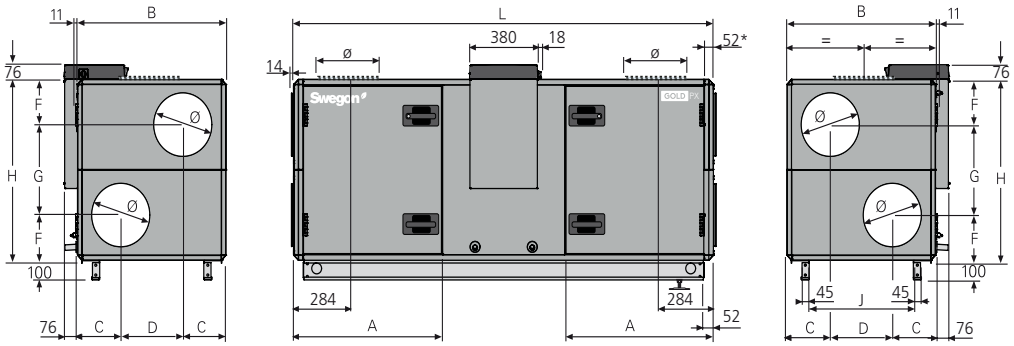
See Section 4.8.6 in the Function Manual, Installation.

We reserve the right to alter specifications.

6. Technical data

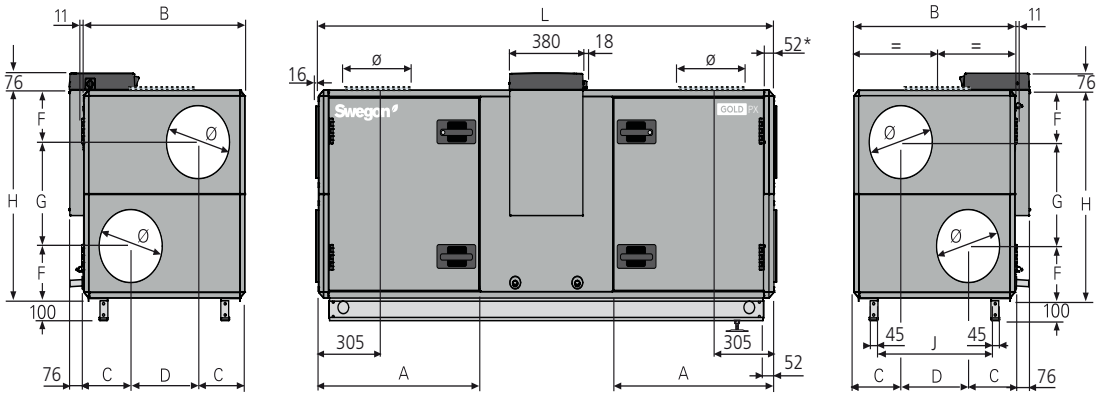
6.1 Dimensions

GOLD 004/005, common casing



** The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected. The AHU can also be supplied with full face end connection panel (accessory).*

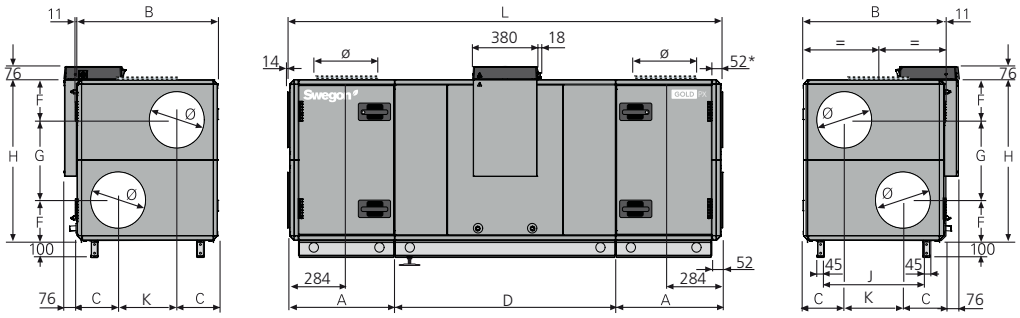
GOLD 007/008, common casing



** The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected. The AHU can also be supplied with full face end connection panel (accessory).*

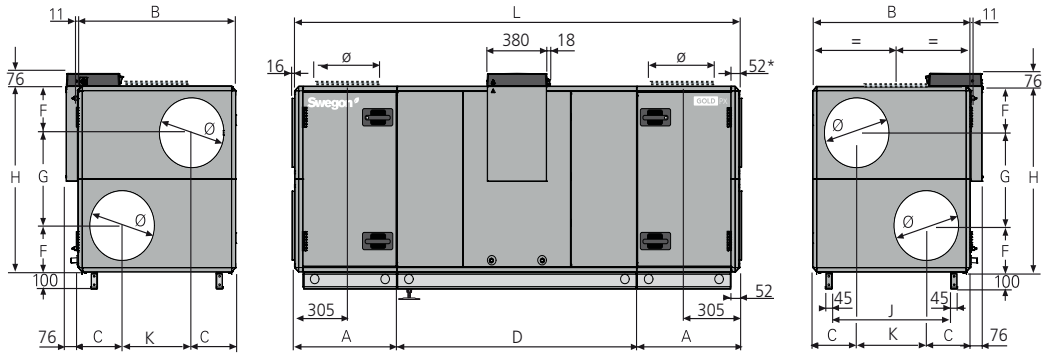
Size	A	B	C	D	F	G	H	J	L	Ø	Weight, kg
004/005	822	825	240	345	230	460	920	579	2333	315	349-387
007	911,5	995	277,5	440	271	543	1085	749	2503	400	435-492
008	911,5	995	277,5	440	271	543	1085	749	2503	400	449-506

GOLD 004/005, split version



** The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected. The AHU can also be supplied with full face end connection panel (accessory).*

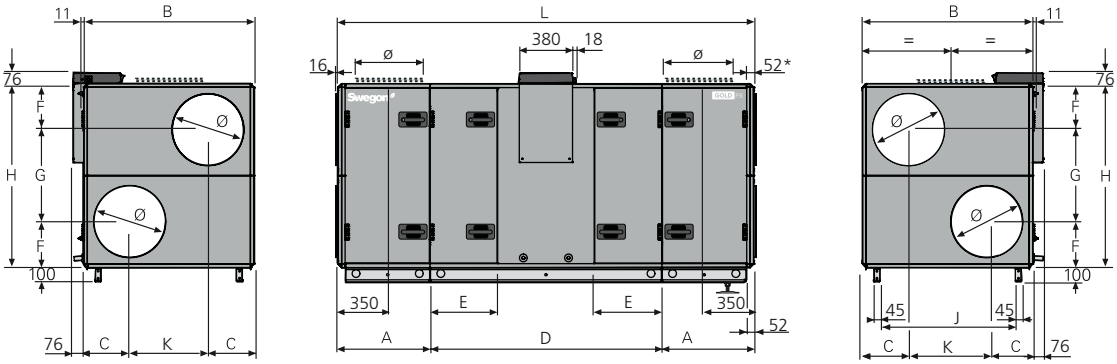
GOLD 007/008, split version



** The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected. The AHU can also be supplied with full face end connection panel (accessory).*

Size	A	B	C	D	F	G	H	J	K	L	Ø	Weight, kg
004/005	617	825	240	1300	230	460	920	579	345	2534	315	438-490
007	647	995	277,5	1517	271	543	1085	749	440	2811	400	547-623
008	647	995	277,5	1517	271	543	1085	749	440	2811	400	561-631

GOLD 011/012

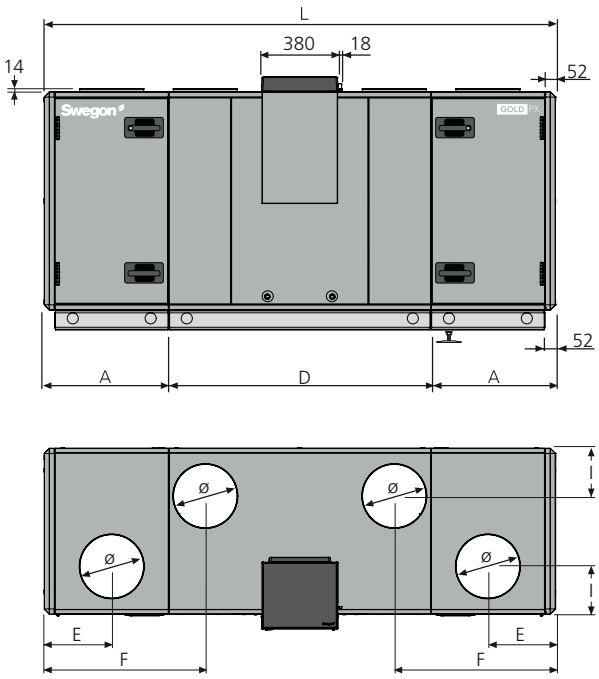


** The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected. The AHU can also be supplied with full face end connection panel (accessory).*

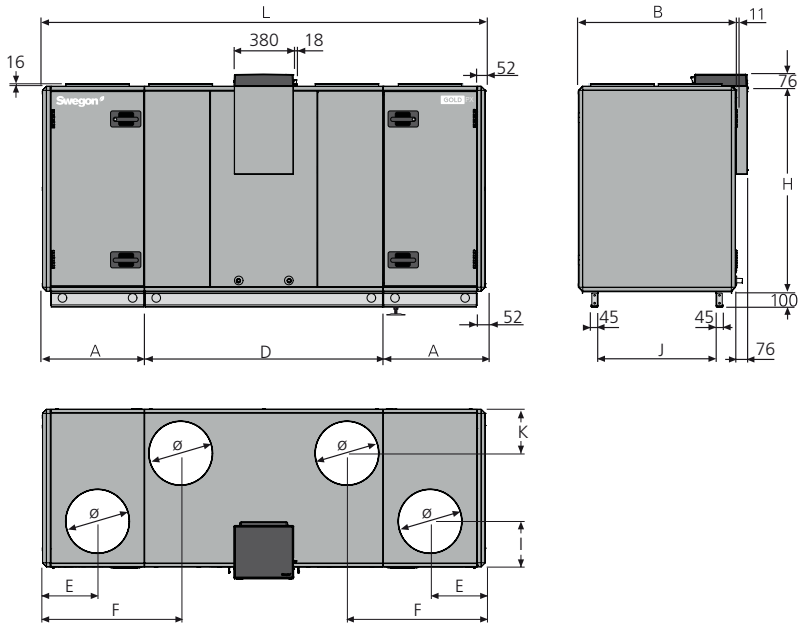
Size	A	B	C	D	E	F	G	H	J	K	L	Ø	Weight, kg
011	647	1199	324	1631	471	324	647	1295	953	551	2925	500	714-804
012	647	1199	324	1631	471	324	647	1295	953	551	2925	500	736-832

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GOLD PX Top 004/005

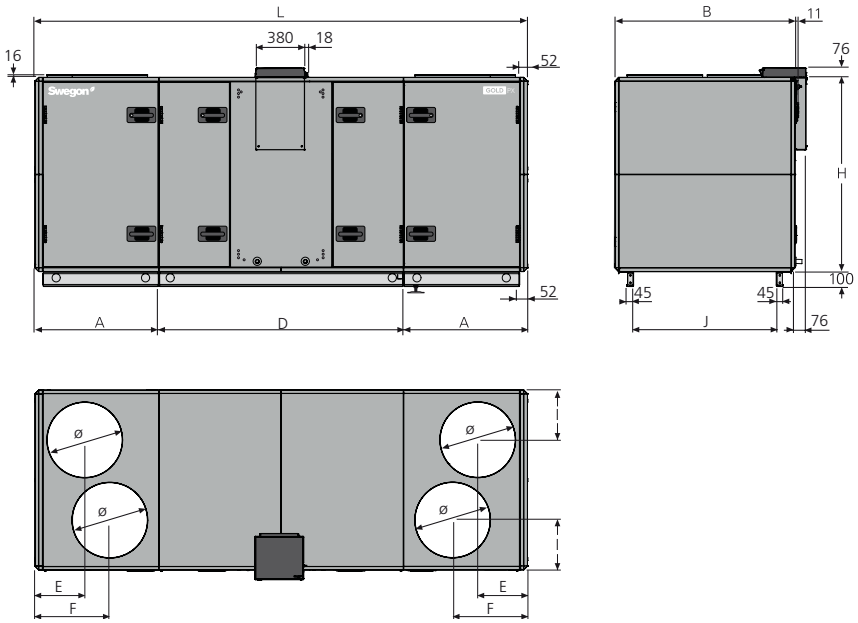


GOLD PX Top 007/008



Size	A	B	D	E	F	H	I	J	K	L	Ø	Weight, kg
004	617	825	1300	334	798	1085	238	579	–	2534	315	480-484
005	617	825	1300	334	798	1085	238	579	–	2534	315	480-492
007	647	995	1517	350	878	1295	288	749	278	2811	400	599-613
008	647	995	1517	350	878	1295	288	749	278	2811	400	613-621

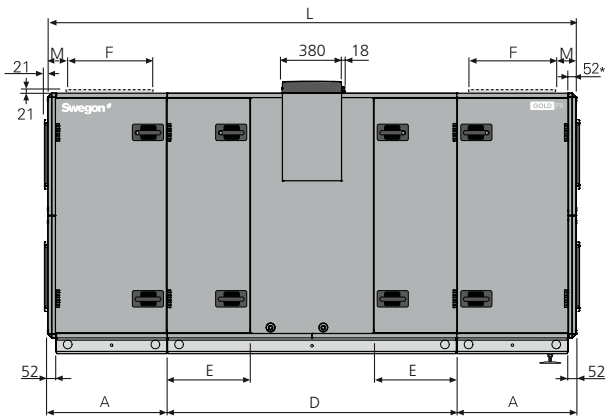
GOLD PX Top 011/012

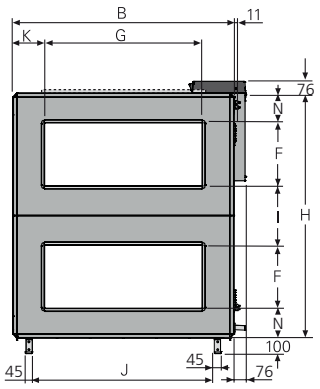


Size	A	B	D	E	F	H	I	J	L	Ø	Weight, kg
011	827	1199	1631	332	500	1295	332	953	3285	500	814-826
012	827	1199	1631	332	500	1295	332	953	3285	500	836-854

We reserve the right to alter specifications.

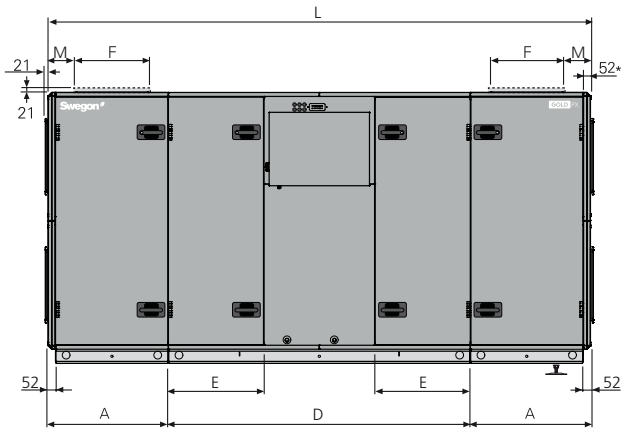
GOLD 014/020

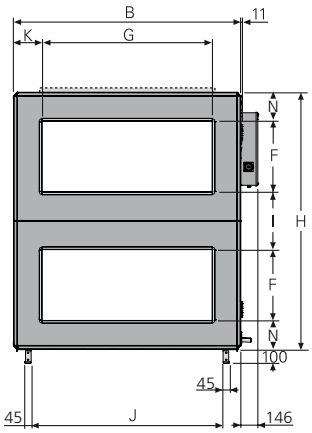




** The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected. The AHU can also be supplied with full face end connection panel (accessory).*

GOLD 025/030

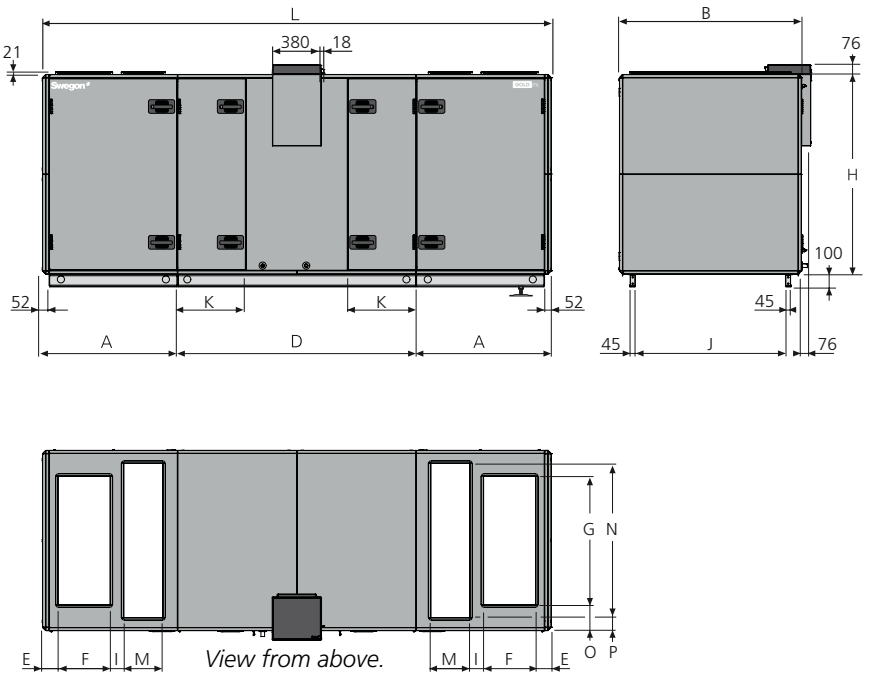




** The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected. The AHU can also be supplied with full face end connection panel (accessory).*

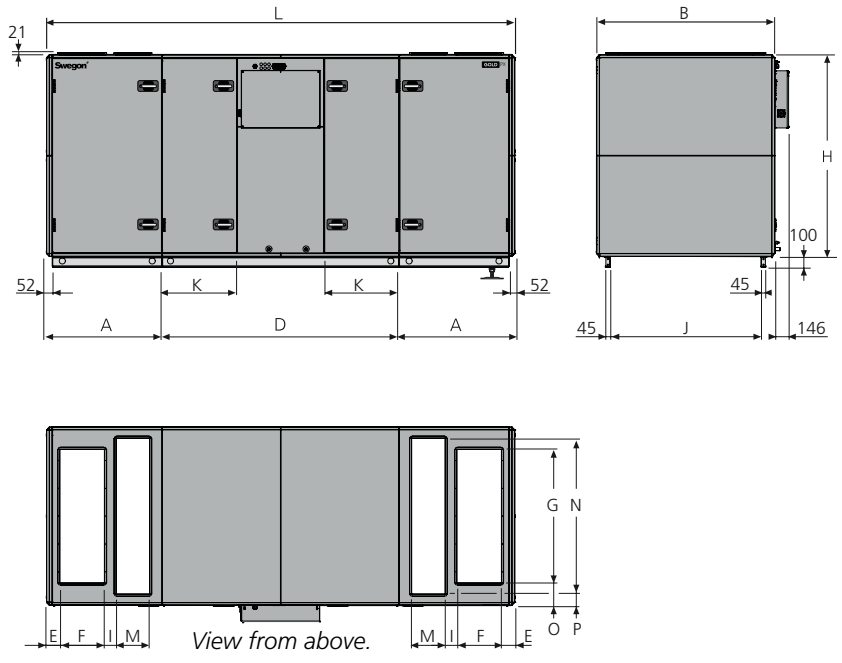
Size	A	B	D	E	F	G	H	I	J	K	L	M	N	Weight, kg
014/020	757,5	1400	1836	528	400	1000	1551	375	1154	200	3351	205	188	929-1089
025/030	847,5	1600	2130	675	500	1200	1811	405	1354	200	3825	200	203	1235-1451

GOLD PX Top 014/020



Size	A	B	D	E	F	G	H	I	J	K	L	M	N	O	P	Weight, kg
014/020	1039	1400	1836	120	400	1000	1551	106	1154	528	3914	300	1200	200	100	1083-1175

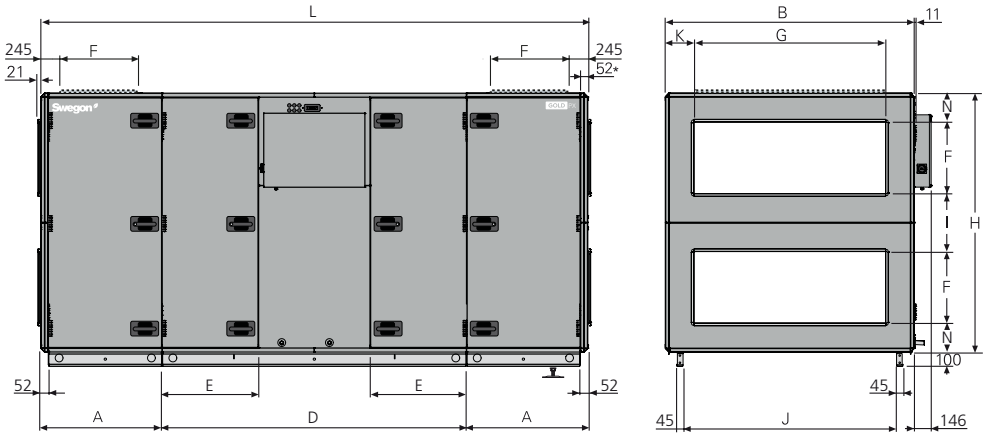
GOLD PX Top 025/030



Size	A	B	D	E	F	G	H	I	J	K	L	M	N	O	P	Weight, kg
025/030	1039	1600	2130	120	400	1200	1811	106	1354	675	4208	300	1400	200	100	1375-1513

We reserve the right to alter specifications.

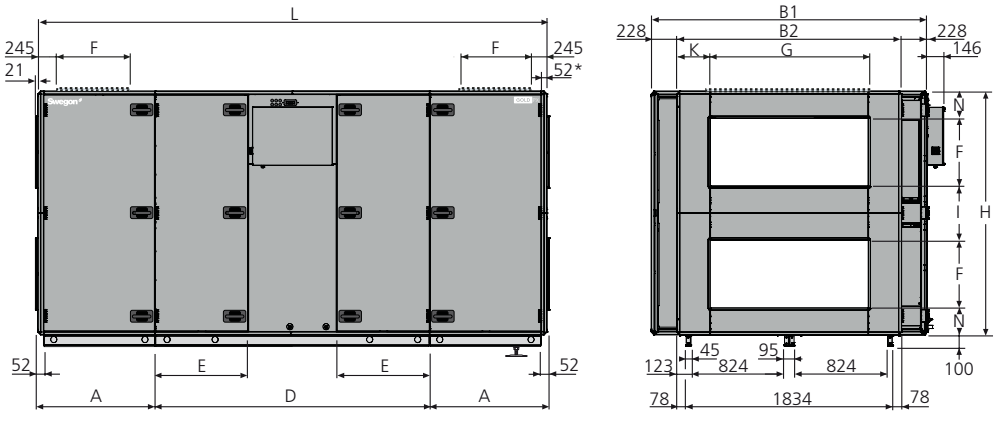
GOLD 035/040



** The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected. The AHU can also be supplied with full face end connection panel (accessory).*

Size	A	B	D	E	F	G	H	I	J	K	L	N	P1/P2	Weight, kg
035/040	1038,5	1990	2400	806	600	1400	2159	479	1744	295	4477	240	995	1999-2281

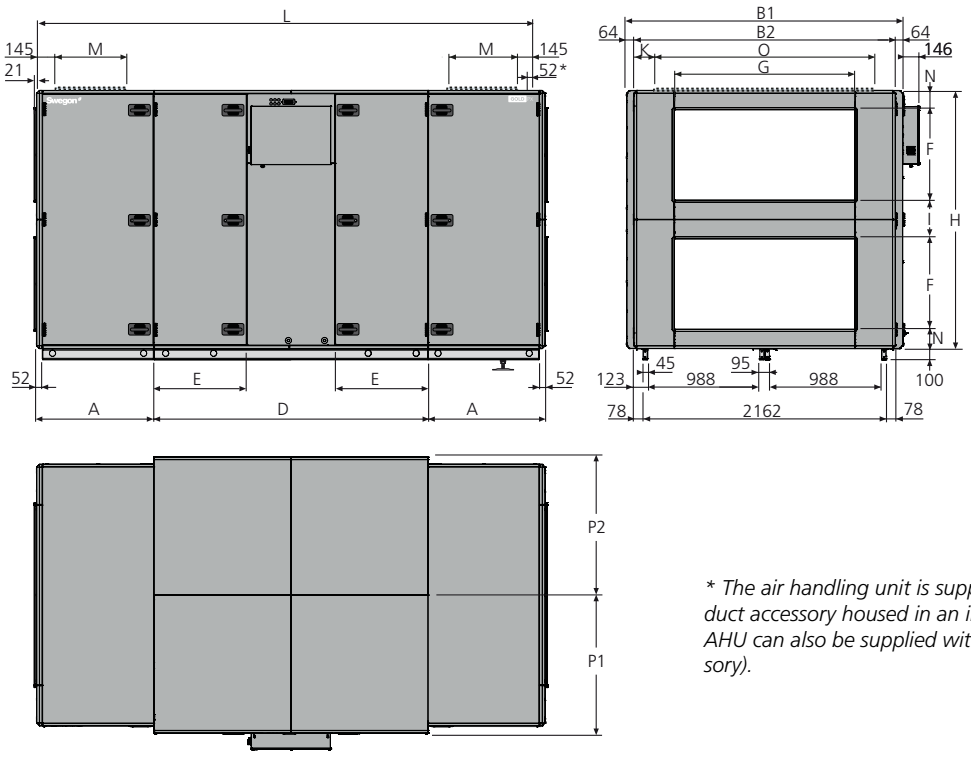
GOLD 040+



** The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected. The AHU can also be supplied with full face end connection panel (accessory).*

Size	A	B1	B2	D	E	F	G	H	I	K	L	N	P1/P2	Weight, kg
040+	1038.5	2446	1990	2430	821	600	1400	2159	479	295	4507	240	1223	2180-2462

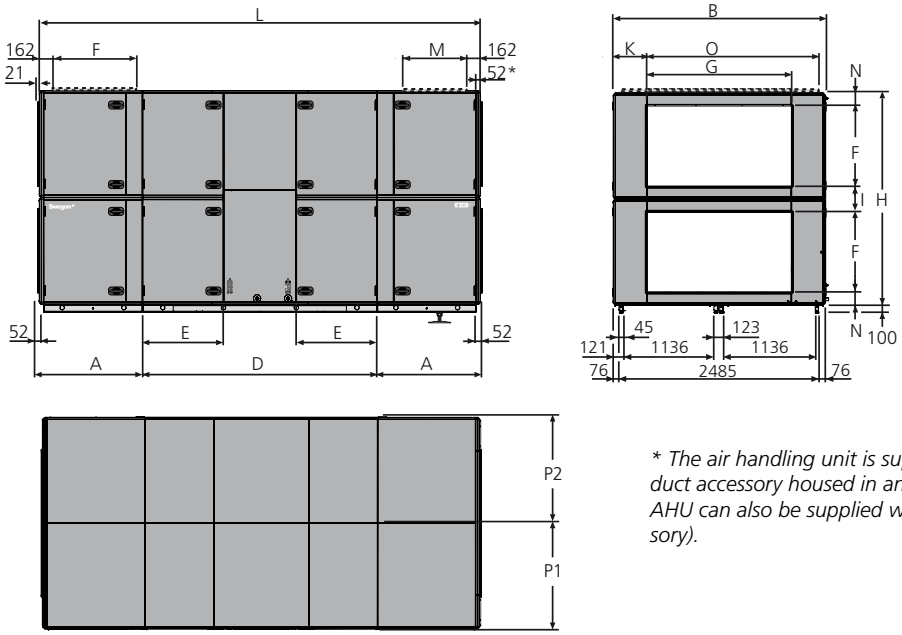
GOLD 050+/060+



** The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected. The AHU can also be supplied with full face end connection panel (accessory).*

Size	A	B1	B2	D	E	F	G	H	I	K	L	M	N	O	P1/P2	Weight, kg
050+/060+	1038.5	2446	2318	2430	821	800	1600	2288	344	359	4507	600	172	2000	1223	2290-2690

GOLD 070/080

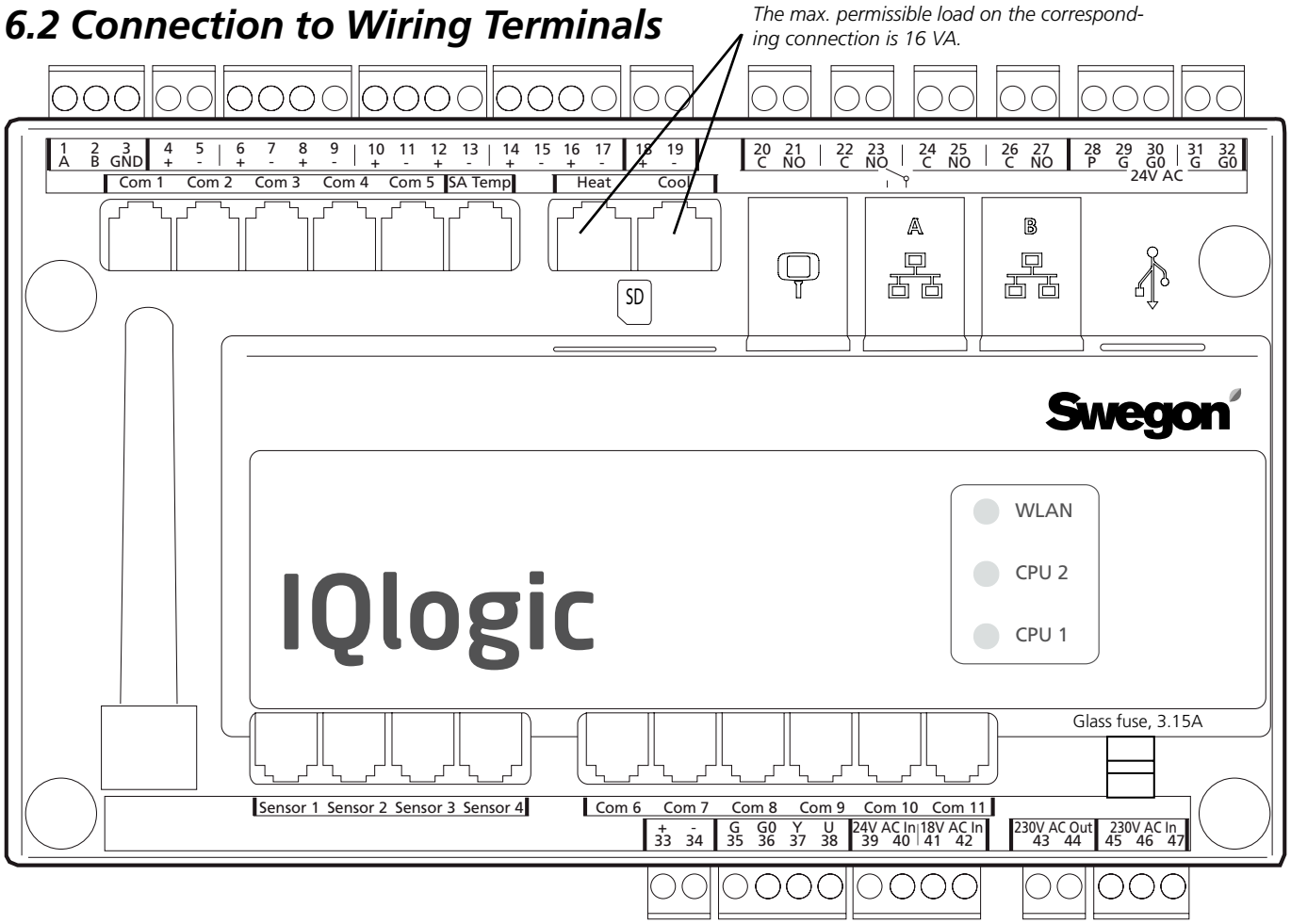


** The air handling unit is supplied without end connection panel if a duct accessory housed in an insulated casing will be connected. The AHU can also be supplied with full face end connection panel (accessory).*

Size	A	B	D	E	F	G	H	I	K	L	M	N	O	P1/P2	Weight, kg
070/080	1273,5	2637	2896	999	1000	1800	2640	320	418,5	5443	750	160	2400	1318,5	3273-3765

We reserve the right to alter specifications.

6.2 Connection to Wiring Terminals



Digital inputs, terminals 4-17, are of extra-low voltage type. Analogue input, terminals 18-19 have an input impedance of 66 kΩ. 230 VAC control voltage is on external terminals 101 (L) and 102 (N).

Wiring terminal	Function	Remarks
1,2,3	Connections for EIA -485	1= Communication connection A/RT+, 2= Communication connection B/RT–, 3= GND/COM.
4,5	External stop	Stops the unit by opening the circuit. On delivery, this function is fitted with a jumper. If the connection is interrupted, the unit will stop.
6,7	External fire/smoke function 1	External fire and smoke function. On delivery, this function is fitted with a jumper. If the connection is interrupted, the function will trip and initiate an alarm.
8,9	External fire/smoke function 2	External fire and smoke function. On delivery, this function is fitted with a jumper. If the connection is interrupted, the function will trip and initiate an alarm.
10,11	External alarm 1	External contact function. Optional: Normally open/normally closed.
12,13	External alarm 2	External contact function. Optional: Normally open/normally closed.
14,15	External low speed	External contact function. Oversteers the timer from stop to low speed operation.
16,17	External high speed	External contact function. Oversteers the timer from stop or low speed to high speed operation.
18,19	Demand control	Input for 0-10 V DC. The input signal influences the supply air/extract airflow set point if the unit is operating in the demand control mode. For connection of sensors, for example CO_2, CO and VOC
20,21	Circulation pump, heating circuit	Independent contact, max. 5 A/AC1, 2 A/AC3, 250 VAC. Closes on a heating load.
22,23	Circulation pump, cooling circuit or cooling on/off, 1-step operation	Independent contact, max. 5 A/AC1, 2 A/AC3, 250 VAC. Closes on a cooling load.
24,25	Cooling, on/off, 2-step operation	Independent contact, max. 5 A/AC1, 2 A/AC3, 250 VAC. Closes on a cooling load.
26,27	In-operation indication	Independent contact, max. 5 A/AC1, 2 A/AC3, 250 VAC. Closes when the unit is operating.
28,29,30	Damper control	24 VAC. 28= Controlled 24 VAC (G), 29= 24 VAC (G), 30= 24 VAC (G0).
31,32	Control voltage [1)]	24 VAC control voltage. Terminals 31-32 are loaded with a total of 16 VA. Opened by means of the safety isolating switch.
33,34	Reference voltage	Output for constant 10 VDC. Max. permissible load: 8 mA.
35,36,37,38	Control, recirculation damper	The recirculation damper can be loaded with max. 2 mA at 10 VDC. 35= 24 V AC (G), 36= 24 V AC (G0), 37= 0-10 V DC control signal, 38= 0-10 VDC feedback signal.

The max permissible common load on terminals 31-32, outputs for Heat/Cool and damper output (terminals 28-30) is max 32 VA (SD) eller 50 VA (RX/PX/CX).

6.3 Electrical Data

6.3.1 Air Handling Units

6.3.1.1 Size 004-012

MIN. POWER SUPPLY
GOLD 004:
1-phase, 3-wire, 230 V -10/+15%, 50 Hz, 10 AT *or*
3-phase, 5-wire, 400 V -10/+15%, 50 Hz, 10 AT

GOLD 005, capacity variant 1:
1-phase, 3-wire, 230 V -10/+15%, 50 Hz, 10 AT *or*
3-phase, 5-wire, 400 V -10/+15%, 50 Hz, 10 AT

GOLD 005, capacity variant 2:
1-phase, 3-wire, 230 V -10/+15%, 50 Hz, 16 AT *or*
3-phase, 5-wire, 400 V -10/+15%, 50 Hz, 10 AT

GOLD 007, capacity variant 1:
1-phase, 3-wire, 230 V -10/+15%, 50 Hz, 10 AT *or*
3-phase, 5-wire, 400 V -10/+15%, 50 Hz, 10 AT

GOLD 007, capacity variant 2:
1-phase, 3-wire, 230 V -10/+15%, 50 Hz, 16 AT *or*
3-phase, 5-wire, 400 V -10/+15%, 50 Hz, 10 AT

GOLD 008, capacity variant 1:
1-phase, 3-wire, 230 V -10/+15%, 50 Hz, 16 AT *or*
3-phase, 5-wire, 400 V -10/+15%, 50 Hz, 10 AT

GOLD 008, capacity variant 2:
3-phase, 5-wire, 400 V -10/+15%, 50 Hz, 10 AT

GOLD 011, capacity variant 1:
1-phase, 3-wire, 230 V -10/+15%, 50 Hz, 16 AT *or*
3-phase, 5-wire, 400 V -10/+15%, 50 Hz, 10 AT

GOLD 011, capacity variant 2:
3-phase, 5-wire, 400 V -10/+15%, 50 Hz, 10 AT

GOLD 012, capacity variant 1 and 2:
3-phase, 5-wire, 400 V -10/+15%, 50 Hz, 10 AT

6.3.1.2 Size 014-040+

Shows the fuse size for different combinations of fan sizes and capacity variants. Fan A or B can be a supply air fan or an extract air fan or vice versa. It is the combination of fan A and B that determines the fuse size.

The air handling unit's rating plate shows the combinations of fan sizes and capacity variants.

Electrical connection is 3-phase, 5-wire, 400 V -10/+15%, 50 Hz.

GOLD PX, size	Fan A, size/capacity variant	Fan B, size/capacity variant	Fuse protection (A)
014/020	014-1 (1,6 kW)	014-1 (1,6 kW)	10
	014-1 (1,6 kW)	014-2 (2,4 kW)	10
	014-1 (1,6 kW)	020-1 (2,4 kW)	10
	014-1 (1,6 kW)	020-2 (3,4 kW)	10
	014-2 (2,4 kW)	014-2 (2,4 kW)	10
	014-2 (2,4 kW)	020-1 (2,4 kW)	10
	014-2 (2,4 kW)	020-2 (3,4 kW)	16
	020-1 (2,4 kW)	020-1 (2,4 kW)	10
	020-1 (2,4 kW)	020-2 (3,4 kW)	10
	020-2 (3,4 kW)	020-2 (3,4 kW)	16
025/030	025-1 (2,4 kW)	025-1 (2,4 kW)	10
	025-1 (2,4 kW)	025-2 (3,4 kW)	16
	025-1 (2,4 kW)	030-1 (4,0 kW)	16
	025-1 (2,4 kW)	030-2 (5,0 kW)	16
	025-2 (3,4 kW)	025-2 (3,4 kW)	16
	025-2 (3,4 kW)	030-1 (4,0 kW)	16
	025-2 (3,4 kW)	030-2 (5,0 kW)	16
	030-1 (4,0 kW)	030-1 (4,0 kW)	16
	030-1 (4,0 kW)	030-2 (5,0 kW)	20
	030-2 (5,0 kW)	030-2 (5,0 kW)	20
035/040/040+	35-1 (4,0 kW)	35-1 (4,0 kW)	16
	35-1 (4,0 kW)	35-2 (5,0 kW)	20
	35-1 (4,0 kW)	40-1 (6,5 kW)	20
	35-1 (4,0 kW)	40-2 (10 kW)	25
	35-2 (5,0 kW)	35-2 (5,0 kW)	20
	35-2 (5,0 kW)	40-1 (6,5 kW)	25
	35-2 (5,0 kW)	40-2 (10 kW)	25
	40-1 (6,5 kW)	40-1 (6,5 kW)	25
	40-1 (6,5 kW)	40-2 (10 kW)	32
	40-2 (10 kW)	40-2 (10 kW)	40

6.3.1.3 Size 050+ - 080

Shows the fuse size for different combinations of fan sizes and capacity variants. Fan A or B can be a supply air fan or an extract air fan or vice versa. It is the combination of fan A and B that determines the fuse size.

The air handling unit's rating plate shows the combinations of fan sizes and capacity variants.

Electrical connection is 3-phase, 5-wire, 400 V -10/+15%, 50 Hz.

GOLD PX, size	Fan A, size/capacity variant	Fan B, size/capacity variant	Fuse protection (A)
050+/060+	50-1 (6,5 kW)	50-1 (6,5 kW)	25
	50-1 (6,5 kW)	50-2 (10 kW)	32
	50-1 (6,5 kW)	60-1 (2 x 4,0 kW)	32
	50-1 (6,5 kW)	60-2 (2 x 6,5 kW)	40
	50-2 (10 kW)	50-2 (10 kW)	32
	50-2 (10 kW)	60-1 (2 x 4,0 kW)	32
	50-2 (10 kW)	60-2 (2 x 6,5 kW)	40
	60-1 (2 x 4,0 kW)	60-1 (2 x 4,0 kW)	32
	60-1 (2 x 4,0 kW)	60-2 (2 x 6,5 kW)	40
	60-2 (2 x 6,5 kW)	60-2 (2 x 6,5 kW)	50
070/080	70-1 (2 x 4,0 kW)	70-1 (2 x 4,0 kW)	32
	70-1 (2 x 4,0 kW)	70-2 (2 x 6,5 kW)	40
	70-1 (2 x 4,0 kW)	80-1 (2 x 6,5 kW)	40
	70-1 (2 x 4,0 kW)	80-2 (2 x 10 kW)	50
	70-2 (2 x 6,5 kW)	70-2 (2 x 6,5 kW)	50
	70-2 (2 x 6,5 kW)	80-1 (2 x 6,5 kW)	50
	70-2 (2 x 6,5 kW)	80-2 (2 x 10 kW)	63
	80-1 (2 x 6,5 kW)	80-1 (2 x 6,5 kW)	50
	80-1 (2 x 6,5 kW)	80-2 (2 x 10 kW)	63
	80-2 (2 x 10 kW)	80-2 (2 x 10 kW)	80

6.3.2 Fans

RATED DATA PER FAN

GOLD 004: Motor shaft power: 1.15 kW (0.41 kW)*, motor controller: 1 x 230 V, 50 Hz

GOLD 005: Motor shaft power: 1.15 kW (0.8 kW)*, motor control system, 1 x 230 V, 50 Hz
or Motor shaft power: 1.15 kW, motor controller: 1 x 230 V, 50 Hz

GOLD 007: Motor shaft power: 1.15 kW (0.8 kW)*, motor control system, 1 x 230 V, 50 Hz
or Motor shaft power: 1.15 kW, motor controller: 1 x 230 V, 50 Hz

GOLD 008: Motor shaft power: 1.15 kW, motor control system, 1 x 230 V, 50 Hz
or Motor shaft power: 1.6 kW, motor controller: 3 x 400 V, 50 Hz

GOLD 011: Motor shaft power: 1.15 kW, motor control system, 1 x 230 V, 50 Hz
or Motor shaft power: 1.6 kW, motor controller: 3 x 400 V, 50 Hz

GOLD 012: Motor shaft power: 2.4 kW (1.6 kW)*, motor control system, 3 x 400 V, 50 Hz
or Motor shaft power: 2.4 kW, motor control system, 3 x 400 V, 50 Hz

GOLD 014/020: Motor shaft power: 2.4 kW (1.6 kW)*, motor controller, 3 x 400 V, 50 Hz
or Motor shaft power: 2.4 kW, motor controller, 3 x 400 V, 50 Hz
or Motor shaft power: 3.4 kW, motor controller, 3 x 400 V, 50 Hz

GOLD 025/030: Motor shaft power: 2.4 kW, motor controller, 3 x 400 V, 50 Hz
or Motor shaft power: 3.4 kW, motor controller, 3 x 400 V, 50 Hz
or Motor shaft power: 4.0 kW, motor controller, 3 x 400 V, 50 Hz
or Motor shaft power: 5.0 kW, motor controller, 3 x 400 V, 50 Hz

GOLD 035/040: Motor shaft power: 4.0 kW, motor control system, 3 x 400 V, 50 Hz
or Motor shaft power: 5.0 kW, motor control system, 3 x 400 V, 50 Hz
or Motor shaft power: 6.5 kW, motor control system, 3 x 400 V, 50 Hz
or Motor shaft power: 10 kW, motor control system, 3 x 400 V, 50 Hz

GOLD 050/060: Motor shaft power: 6.5 kW, motor control system: 3 x 400 V, 50 Hz
or Motor shaft power: 10 kW, motor control system: 3 x 400 V, 50 Hz
or Motor shaft power: 2 x 4.0 kW, motor control system: 3 x 400 V, 50 Hz
or Motor shaft power: 2 x 6.5 kW, motor control system: 3 x 400 V, 50 Hz

GOLD 070/080: Motor shaft power: 2 x 4.0 kW, motor controller: 3 x 400 V, 50 Hz
or Motor shaft power: 2 x 6.5 kW, motor controller: 3 x 400 V, 50 Hz
or Motor shaft power: 2 x 10 kW, motor controller: 3 x 400 V, 50 Hz

**) The motor controller limits the output power to the value specified.*

6.3.3 Electrical Equipment Cubicle

The fuse protection of the air handling unit must not exceed the value stated in Section 6.3.1.

6.3.3.1 Size 004-012

SAFETY ISOLATING SWITCH

Capacity variant 1

GOLD PX 004-011:	20 A
GOLD PX 012:	25 A

Capacity variant 2

GOLD PX 005-007:	20 A
GOLD PX 008-012:	25 A

FUSES IN THE ELECTRICAL EQUIPMENT CUBICLE

230 V control current

One 2-pole, 6A automatic circuit breaker

Fans

GOLD 004-007, GOLD 008, capacity variant 1, GOLD 011 capacity variant 1

PX Two 2-pole, 10A automatic circuit breakers

GOLD 008, capacity variant 2, GOLD 011, capacity variant 2, GOLD 012:

PX Two 6.3A protective motor switches

FUSES IN THE CONTROL UNIT

3.15 AT, incoming 230V. For mounting, see Section 6.2. For replacement, dismantle the control unit's plastic enclosure.

6.3.3.2 Size 014-080

Shows the internal motor protection switch/fuses and safety isolating switch for different combinations of fan sizes and capacity variants. Fan A or B can be a supply air fan or an extract air fan or vice versa.

The air handling unit's rating plate shows the combinations of fan sizes and capacity variants.

GOLD PX, size	Fan combination		Internal motor protection switch (A)		Safety isolating switch (A)
	Fan A, size/ capacity variant	Fan B, size/ capacity variant	Fan A	Fan B	
014/020	14-1	14-1	6,3	6,3	25
	14-1	14-2	6,3	6,3	25
	14-1	20-1	6,3	6,3	25
	14-1	20-2	6,3	7,0	25
	14-2	14-2	6,3	6,3	25
	14-2	20-1	6,3	6,3	25
	14-2	20-2	6,3	7,0	25
	20-1	20-1	6,3	6,3	25
	20-1	20-2	6,3	7,0	25
	20-2	20-2	7,0	7,0	25
025/030	25-1	25-1	10,0	10,0	25
	25-1	25-2	10,0	10,0	25
	25-1	30-1	10,0	10,0	25
	25-1	30-2	10,0	10,6	25
	25-2	25-2	10,0	10,0	25
	25-2	30-1	10,0	10,0	25
	25-2	30-2	10,0	10,6	25
	30-1	30-1	10,0	10,0	25
	30-1	30-2	10,0	10,6	25
	30-2	30-2	10,6	10,6	25
035/040	35-1	35-1	10,0	10,0	40
	35-1	35-2	10,0	10,6	40
	35-1	40-1	10,0	13,2	40
	35-1	40-2	10,0	18,0	40
	35-2	35-2	10,6	10,6	40
	35-2	40-1	10,6	13,2	40
	35-2	40-2	10,6	18,0	40
	40-1	40-1	13,2	13,2	40
	40-1	40-2	13,2	18,0	40
	40-2	40-2	18,0	18,0	63

FUSES IN THE ELECTRICAL EQUIPMENT CUBICLE

230 V control current

One 2-pole, 6A automatic circuit breaker

FUSES IN THE CONTROL UNIT

3.15 AT, incoming 230V. For mounting, see Section 6.2. For replacement, dismantle the control unit's plastic enclosure.

GOLD PX+, size	Fan combination		Internal MCB (A)		
	Fan A, size/capacity variant	Fan B, size/capacity variant	Fan A	Fan B	Safety isolating switch (A)
040+	35-1	40-1	13	13	40
	35-1	40-2	16	16	63
	35-2	40-1	13	13	40
	35-2	40-2	16	16	63
	40-1	40-1	13	13	40
	40-1	40-2	16	16	63
	40-2	40-2	16	16	63
050+/060+	50-1	50-1	13	13	40
	50-1	50-2	16	16	63
	50-1	60-1	13	13	80
	50-1	60-2	13	13	80
	50-2	50-2	16	16	63
	50-2	60-1	16	13	125
	50-2	60-2	16	13	125
	60-1	60-1	13	13	80
	60-1	60-2	13	13	80
	60-2	60-2	13	13	80
070/080	70-1	70-1	2x13	2x13	80
	70-1	70-2	2x13	2x13	80
	70-1	80-1	2x13	2x13	80
	70-1	80-2	2x13	2x16	125
	70-2	70-2	2x13	2x13	80
	70-2	80-1	2x13	2x13	80
	70-2	80-2	2x13	2x16	125
	80-1	80-1	2x13	2x13	80
	80-1	80-2	2x13	2x16	125
	80-2	80-2	2x16	2x16	125

FUSES IN THE ELECTRICAL CABINET
Control current 230 V

GOLD PX+ 040-080:
1 x 2-pole MCB 1 A
1 x 2-pole MCB 6 A

6.3.4 Control Inaccuracy:

Temperature ± 1°C.
Airflow ± 5%.

6.3.5 Earth testing

The air handling unit is earth-tested in the factory before delivery.

Make sure that the sections are correctly assembled according to the instructions before starting the air handling unit.

If unit sections are dismantled by the customer, the customer is responsible for new earth tests.

6.3.6 EMC

The air handling unit with the power supply 3-phase 400 V conforms to IEC 61000-3-12 provided that the short-circuit power Ssc is greater than or equal to the value in the table below for each size/capacity variant.

It is the duty of the installer or user of the equipment to ensure, through consultation with the distribution network operator if necessary, that the equipment is only connected to a supply with the correct short-circuit power Ssc for each unit.

For combinations of different fuse sizes/capacity variants, the short-circuit power for the air handling unit will be equal to the short-circuit power for the largest fan size/capacity variant.

GOLD PX, size -capacity variant	Short-circuit power Ssc MVA
008-2	0,8
011-2	0,8
012-1	0,8
012-2	1,2
014-1	0.8
014-2	1,2
020-1	1,3
020-2	1,7
025-1	1,3
025-2	1,7
030-1	2,0
030-2	2,7
035-1	2,0
035-2	2,7
040-1	3,6
040-2	5,6
050-1	3,4
050-2	5,7
060-1	4,1
060-2	6,5
070-1	4,1
070-2	6,5
080-1	6,6
080-2	11,3

7. Appendices

7.1 Declaration of Conformity

For Declaration of Conformity, see our home page at www.swegon.com.

7.2 Building Materials Declaration

For a complete Declaration of Construction Materials, see our home page at www.swegon.com.

7.3 License

This product contains software licensed under the GNU General Public License (GPL).

In accordance with GPLv2 Section 3(b) and GPLv3 Section 6(b), Swegon offers to provide the complete corresponding source code for the GPL-covered software contained in this product, including any modifications made by Swegon, on request and for a charge no more than the cost of physically performing source distribution.

This offer is valid for three (3) years after the last shipment of this product. Requests may be sent to: Swegon, opensource@swegon.com

7.4 Ecodesign data

The air handling unit complies with regulation (EU) 1253/2014.

Data for sizing are available in the air handling unit selection program AHU Design.

Data for regulation (EU) 2024/1834 are available from QR code on the fan assembly and at web address:
https://www.swegon.com/globalassets/digizuite/17746-en-fan_data.pdf

7.5 Digital Services

Connectivity

The product is equipped with functionality that, when enabled, will connect to the Swegon INSIDE Cloud when given access to the internet. Such connection is made either through the building's local internet access point or by using a supplied modem. When connecting through the building's internet access point, the local firewall must be configured to allow traffic according to the firewall settings. The functionality is by default disabled and can be enabled in the product. By enabling this functionality the customer agrees to the general terms and conditions for Digital Service, DS-23. The customer can disable the connection to the Swegon INSIDE Cloud in the product user interface at any time.

Which data is sent

Through the connection to Swegon INSIDE Cloud, the product will exchange data to Swegon INSIDE Cloud about certain actions and parameter settings of the product. Each data point has different thresholds for when to send data to Swegon, therefore the data sent depends on the data point type and configuration. The data is sent in intervals, at which point the data is aggregated together with other data from that interval.

Who has access to the data

The data sent to Swegon INSIDE Cloud is used by Swegon for purposes of performance, functionality and development of the product. Consequently, Swegon has the right to use the data sent from all products connected to Swegon INSIDE Cloud. The data is used in accordance with Swegon's DS-23 general terms and conditions, and our sales agreement with the customer.

Requirements

To connect a product to Swegon INSIDE Cloud, a secure internet connection via the property's internal network or via Swegon's external modem is required. In addition to a secure internet connection, a valid certificate for each individual product is also required to approve them to share data with INSIDE Cloud. Some products will come with a valid certificate out of the factory, while other products need to be equipped with a certificate to authorize the product to share data.

To find out if the product is INSIDE Ready (i.e. ready to share data) or not visit INSIDE Ready | www.swegon.com.

All documentation is available in digital form and can be downloaded from www.swegon.com