Installation, Mounting and Maintenance

Aquaris Silent

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Contents

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Safety instructions

Prior to installation and commissioning of this device, please read completely through this manual. Please observe in particular the regulations and operating instructions containing the hazard symbols and safety signs. Their non-observance may result not only in damage to the device but also in light and serious personal injury. If, after reading through the manual, you have further questions, please contact the manufacturer or the local sales office.

General information

- The inspection, installation, connection and commissioning of the device must be carried out by qualified skilled personnel only in compliance with the current regulations.
- Do not spray the device with liquids nor operate it with wet or moist hands.
- Establishing the electric and hydraulic connections and ensuring their correct functioning is the responsibility of the installer.
- Do not change any control or safety elements without prior approval by the manufacturer or the local sales office.

SCHAKO cannot be held liable for damage resulting from:

- Improper installation caused by ignoring the instructions given in this manual
- Non-observance of the operating conditions of the device.
- Installation and maintenance by personnel without proper qualification.
- Improper use of the device or operation under conditions not conforming to the manual.
- Use of spare parts that are not original spare parts.

Warranty

The device warranty will be for two years starting from the handover date and shall apply to all production faults. Electric components are excluded from the device warranty. However, they are covered by the corresponding warranty of the relevant manufacturer Also excluded from the warranty is damage to the device unit caused by components that are not part of the device itself. The warranty only covers the return and replacement of defective materials.

Recycling

It is recommended recycling the device components at the end of their service life as much as possible or reuse them. Components that cannot be recycled must be properly disposed of by an authorised disposal company in accordance with current legal regulations.

It is recommended keeping this manual at a safe location after installation, as it may be useful for future maintenance activities.

Hazard warning

Safety information

Important information

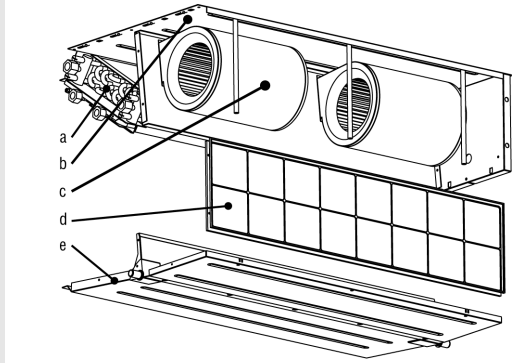
Recycling

Caution, electric power

General information

Identification of the delivered model

The entire fan coil series is manufactured in different models, ranging from devices for installation in false ceilings and floors (horizontal model) to devices with a device casing for installation in open space (horizontal and vertical models).



Register group (a): It consists either of a single register for cooling or heating (connection to two pipelines) or of 2 registers of 3 + 1 pipe rows (connection to 4 pipelines). The registers contain copper pipes, aluminium ribs, a draining or ventilation system and a galvanised steel frame. The water connections are located on the right-hand or left-hand register side. Optionally, an electric heating register can be used to support the heating mode.
Housing (b): Galvanised sheet steel 1 mm in thickness and heat or sound insulation 6 mm in thickness with fire classification M1.
Motorised fan (c):1 The motorised fan consists of 1, 2 or 3 double-sided intake-operated radial blowers with forward curved blades and direct drive. The fan motors are designed as 230V AC or highly efficient EC motors and are equipped with maintenance-free friction bearings for a long service life. For the AC fan motor, 6 steps are made available by a step transformer. The EC fan can be activated by 0-10 V and is almost infinitely variable. The housing and the fan wheel are made of plastic and are optimised for the lowest possible sound pressure.
Filters (d): Their efficiency class is G2 and G3 and they consist of synthetic fabric on a plastic frame.
Condensate pan (e): It is manufactured from galvanised sheet steel and provided with polyethylene heat insulation (thickness: 3 mm, fire classification: B1 (DIN 4102)).

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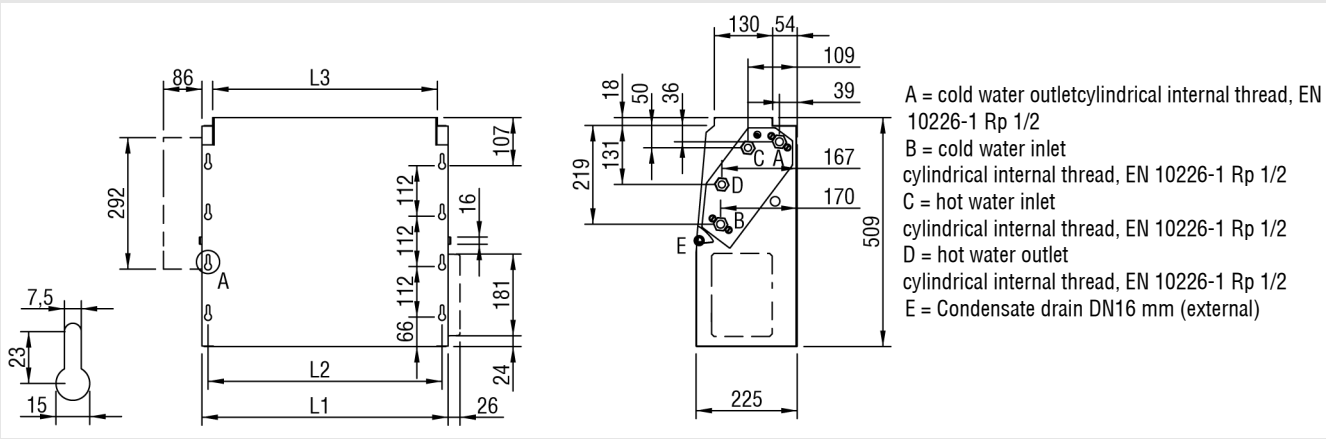
Technical data

	n	10		11		20		21		30		31		40		41		50		51	
		2-pipe	4-pipe	2-pipe	4-pipe	2-pipe	4-pipe	2-pipe	4-pipe	2-pipe	4-pipe	2-pipe	4-pipe	2-pipe	4-pipe	2-pipe	4-pipe	2-pipe	4-pipe	2-pipe	4-pipe
V (m^3/h)	max	385	380	530	520	750	730	835	810	1030	1010	1135	1110	1435	1395	1620	1560	1670	1625	1825	1770
	with	270	265	385	380	485	480	570	555	850	840	970	955	1040	1020	1275	1245	1145	1125	1350	1325
	min	160	160	235	235	305	300	355	345	495	485	575	565	680	670	940	925	775	770	1020	1005
Q_{ges} (kW) (1)	max	2,11	2,09	2,65	2,61	3,70	3,64	3,98	3,9	5,37	5,3	5,75	5,66	6,45	6,33	6,97	6,8	7,81	7,67	8,27	8,11
	with	1,61	1,59	2,11	2,09	2,71	2,69	3,05	2,99	4,68	4,64	5,15	5,09	5,19	5,12	5,96	5,87	6,02	5,94	6,76	6,67
	min	1,06	1,06	1,45	1,45	1,90	1,87	2,14	2,09	3,10	3,05	3,49	3,44	3,82	3,77	4,83	4,78	4,51	4,49	5,54	5,48
Q (kW) (2)	max	2,68	2,12	3,44	2,58	4,83	3,69	5,24	3,86	6,83	5,11	7,35	5,31	8,69	6,36	9,47	6,79	10,32	7,58	11,01	7,98
	with	2,03	1,67	2,68	2,12	3,45	2,82	3,92	3,1	5,89	4,55	6,52	4,94	6,84	5,35	7,97	5,94	7,77	6,15	8,81	6,82
	min	1,29	1,18	1,80	1,54	2,36	2,05	2,68	2,26	3,81	3,15	4,32	3,5	4,93	4,06	6,33	5,02	5,73	4,78	7,10	5,71
W (W)		60		80		86		84		130		142		191		192		221		233	
I (A)		0,26		0,35		0,39		0,43		0,58		0,62		0,85		0,83		0,99		1,02	

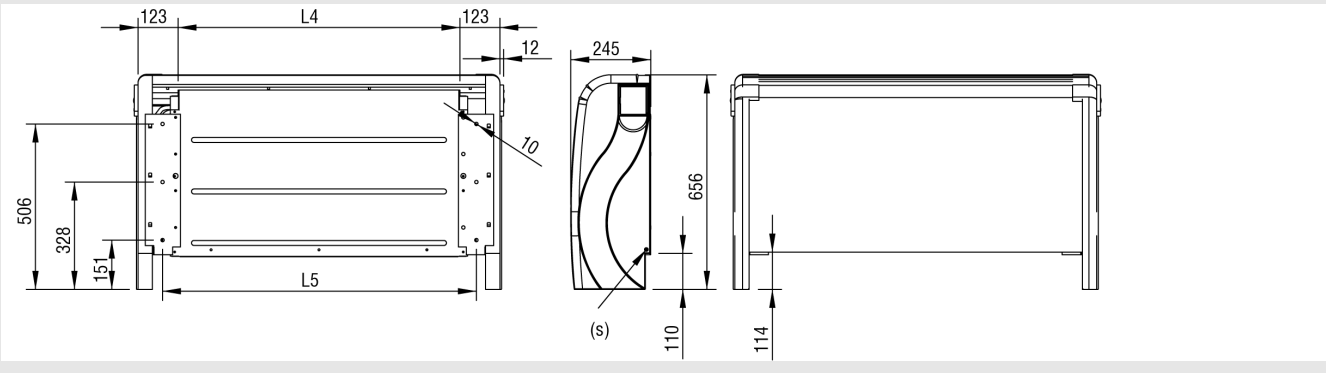
(1) Air inlet temperature = 27°C, water inlet temperature = 7°C, temperature difference = 5°C, SP series
(2) Air inlet temperature = 20°C, water inlet temperature = 50°C, SP series

Dimensions of the base unit



A = cold water outletcylindrical internal thread, EN 10226-1 Rp 1/2
B = cold water inlet
cylindrical internal thread, EN 10226-1 Rp 1/2
C = hot water inlet
cylindrical internal thread, EN 10226-1 Rp 1/2
D = hot water outlet
cylindrical internal thread, EN 10226-1 Rp 1/2
E = Condensate drain DN16 mm (external)

Housing (optional accessories)



NW	Dimensions (mm)					Water capacity of the registers (litres)	
	L1	L2	L3	L4	L5	Register (3 rows)	Register (1 row)
10 / 11	697	670	645	649	755	1.2	0.3
20 / 21	912	885	860	864	970	1.6	0.4
30 / 31	1247	1220	1195	1199	1305	2,3	0.6
40 / 41	1352	1325	1300	1304	1410	2.5	0.7
50 / 51	1597	1570	1545	1549	1655	3.0	0.9

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Installation and commissioning

Operating conditions

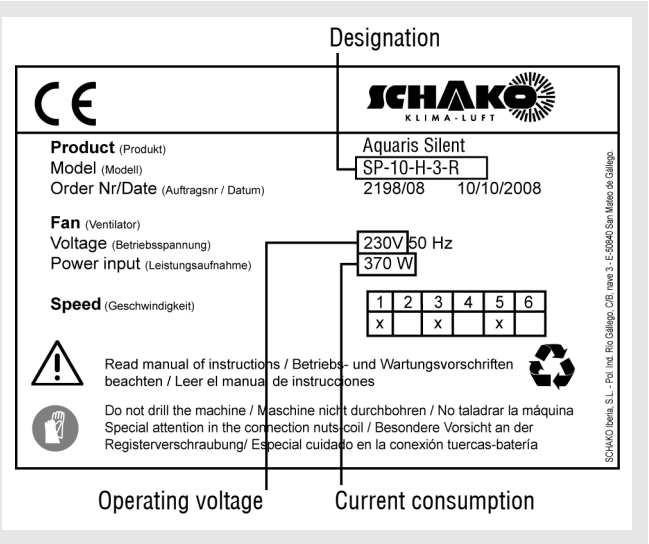
Prior to installation or commissioning of the device, the following operating conditions must be observed:

- Coolant or heating fluid: water or glycols (ethylene or propylene) at a concentration below 60%.
- Water inlet temperature: from 5 to 95°C.
- Air inlet temperature: from 2 to 45°C
- Maximum operating pressure: 8 bar / 95°C
- Operating voltage: 230 V ± 6%, 50/60 Hz.
- Protection class: IP21 (SP series), IP20 (EC series)

To avoid deposits or corrosion, the water quality for filling the registers must meet the requirements according to the regulations VDI 2035 and VDI 50930.

Reception of materials

Upon reception of the materials, the components must be carefully checked, in order to guarantee that no transport damage has taken place. Moreover, the dimensions, composition and number of the identification plate must be checked as to whether they are as ordered. To prevent possible damage during transport, the devices will be delivered ex works on pallets (that correspond to the particular weight and dimensions). When several units are stacked on top of each other, boards are used. The entire delivery is then wrapped with transparent plastic film and secured with tape. It is recommended leaving this protection in place until the device is commissioned.



Designation:

- SP: Fan type
- 10: Size of the fan coil
- H: Model of the unit (horizontal).
- 3: Type of installation (2-pipe installation).
- R: Connection side of the main register (water). right

Should the device exhibit production-related damage, please contact your local sales office prior to installation.

Transport, lifting and handling

Transport and handling of the unit shall take place in the position in which the unit is to be built in later on, unless expressly stated otherwise on the unit. Transport, unloading and lifting of the unit shall take place with the necessary care and using tools that are appropriate for the weight and dimensions.

NW	Weight of the base unit (kg)	Weight of the base unit with housing (kg)
10 / 11	14	20
20 / 21	20	28
30 / 31	25	36
40 / 41	32	46
50 / 51	35	49

SCHAKO cannot be held liable for damage to the unit caused by improper handling or handling not mentioned here, loading or unloading.

The unit shall only be moved by holding on to the housing. When supporting the unit, the weight must never act on the condensate pan or (if available) the water connections.

Storage

If the device is not installed immediately after its reception, it must be stored according to the following instructions:

- The device must be stored at a dry, clean, safe location where no damage to the device can occur, i.e., apart from corrosive atmospheric influences.
- Leave the protections attached ex works (film, tapes, pallets, etc.) on the device, unless they have already been removed beforehand.
- Cover the device with tarpaulins, in order to protect it from dust, moisture and extreme temperatures.
- Rotate the fan rotor at regular intervals.
- Protect the electric components adequately. In case of storage over a prolonged period of time, remove the electric unit and store it at a dry location.
- Entries, openings and pipes must be hermetically sealed.

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Installation site

The Aquaris Silent units are available as horizontal model (for installation of the device unit in false ceilings and floors or free-standing with device casing) and as vertical model (for installation on walls, in niches, with or without device casing). The devices must not be installed in places with extreme moisture (e.g. laundries or swimming pools), with high dust formation, outdoors or in places subject to explosion hazards.
For correct mounting, the following instructions must be followed:

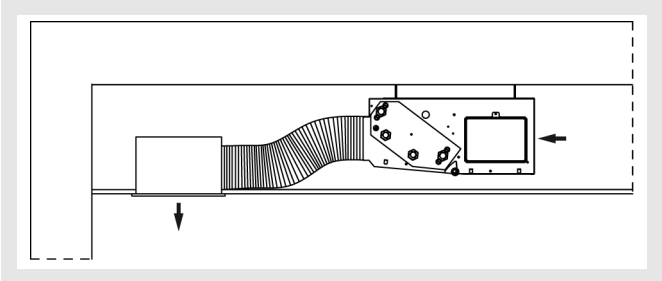
- Make sure that places that are intended as openings for air admission and air discharge are free of pipes, electric cables, crossbeams, stands, etc.
- Install the unit at a site that has good air quality.

- Make sure that wall and ceiling correspond to the weight of the device and also allow correct mounting of the fastening elements.
- Make sure that no obstacles are present on the outside of the wall that could impair optimum air circulation (plants, furniture, curtains, etc.). No objects must be placed on the vertical models of the device. Nor must they be used as seat.

- Install the device such that the air flow is not directed directly at persons staying there.
- The installation site must have sufficient space and the necessary resources for carrying out mounting and maintenance activities of all device components.

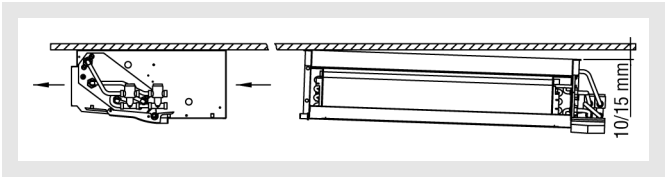
Horizontal mounting

When mounting the fan coil in a false ceiling, the device is fixed at a load-bearing ceiling using threaded bars or other fastening material approved by the building supervisory authorities.

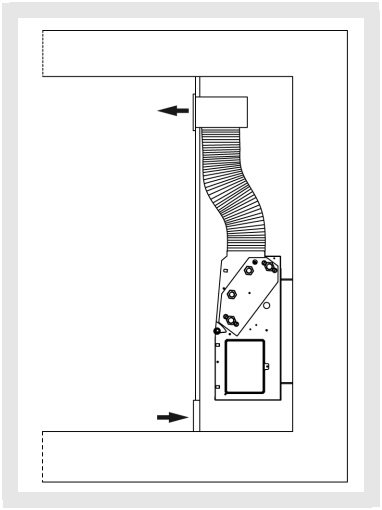


To reduce the noise generated by the fan coil unit, it is recommended fastening the device and the connections of the pipelines by means of sound-insulating elements or vibration dampers.
When the device is installed in false ceilings, the device unit is attached using the anchoring elements of the fan coil. When installed in open space, the device is suspended using additional brackets enclosed with the device housing. This is followed by inserting the device enclosure, which is supported by the housing.

In any form of horizontal installation, the device is mounted at an inclination of 10 - 15 mm to ensure draining of the water of condensation.

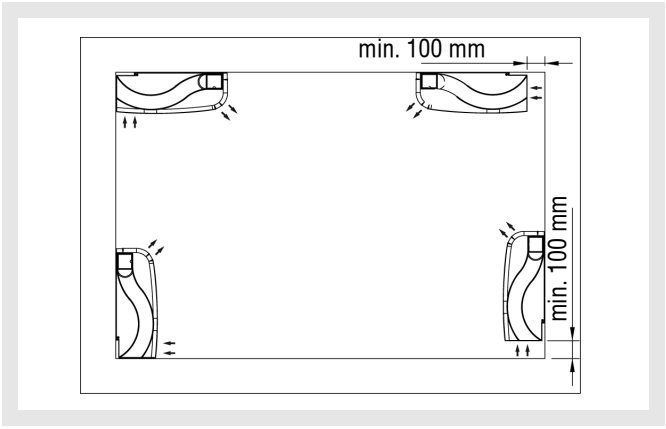


Vertical mounting



The fan coil is mounted vertically on the lateral sheet metal frame using fastening material approved by the building supervisory authorities. If the fan coil has a device enclosure, the latter is fastened to the sheet metal frame of the fan coil by means of the fishplates.

To ensure correct air flow, devices with device enclosure or without return air grilles must be installed at a minimum distance of 100 mm from the wall (horizontal installation) or from the floor (vertical installation).



To avoid damage to the device enclosure, it is recommended first installing only the device unit and to insert the device enclosure not until these activities have been completed.

For maintenance and inspection purposes, a sufficient number of openings with an appropriate size must be provided to ensure access to all components (see also VDI 6022).

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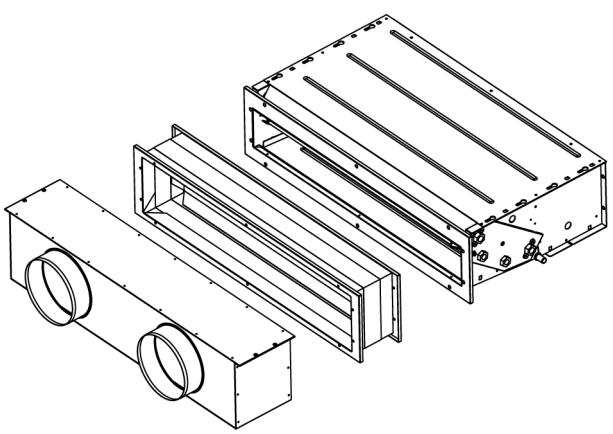
Before making electric or hydraulic connections, the power supply must be disconnected.

Non-observance of the device inclination may result in serious damage to the device and cause water to enter the air ducts.

For installation of the device, use adequate tools, devices and materials and observe the safety regulations and other current regulations.

SCHAKO cannot be held liable for damage resulting from faulty installation or the use of unsuitable fastening devices.



Mounting and connections

The work or support surface used for assembling the device must be smooth and level, to ensure that damaging tensions are avoided when the sub-assemblies are attached.

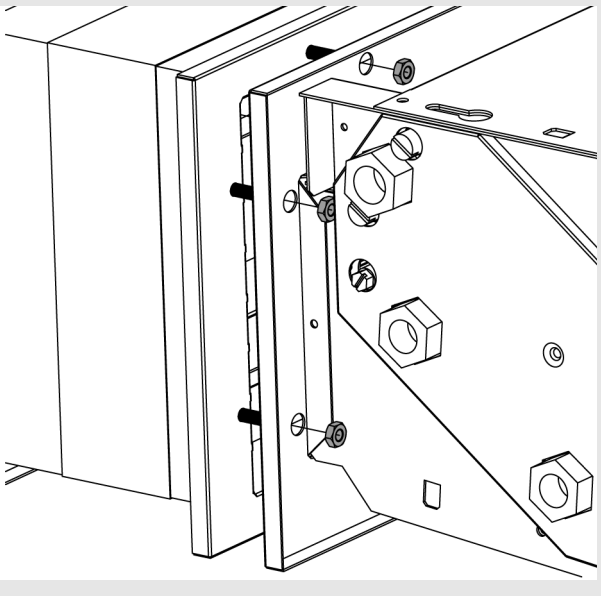
Connecting the sub-assemblies

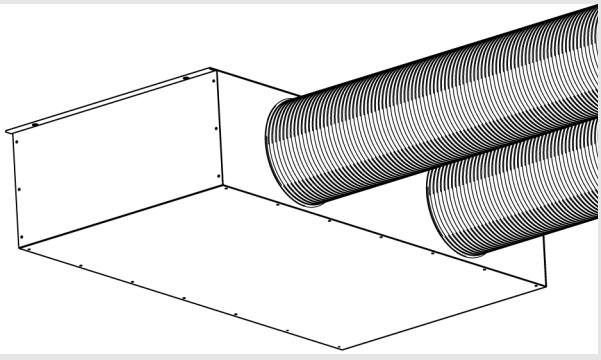
The fan coil base unit (register, filter and motorised fan) is delivered completely mounted ex works. The only connecting work to be done by the installer is attaching the fan coil to the available air ducts or fastening the plenum boxes to the main unit.

Connecting the air ducts

The fan coil is provided with a flange (-FL) (if indicated in the order) on the supply air side for attaching the air duct. For the return air, the fan coil unit has openings in the return air connection piece, which can be screwed to the air duct. For plenum boxes with connection pipe, the air ducts are attached by means of clamps, fishplates or the like.

If on-site components are used, a seal with a thickness of 2 mm between the suction flange and the plenum box is required for the filter change.





Before connecting the plenum boxes, make sure that the insulation at the plenum box frame is in good condition.

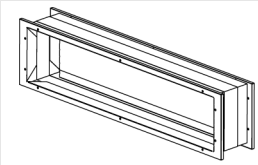
Plenum boxes

The plenum boxes for supply and secondary air are mounted to the main unit using optionally available flexible connection pieces.

Flexible connections

Flexible connections that prevent a transmission of vibrations to the system can be additionally delivered as an option.

They are assembled by screwing the flexible connections to the device unit.



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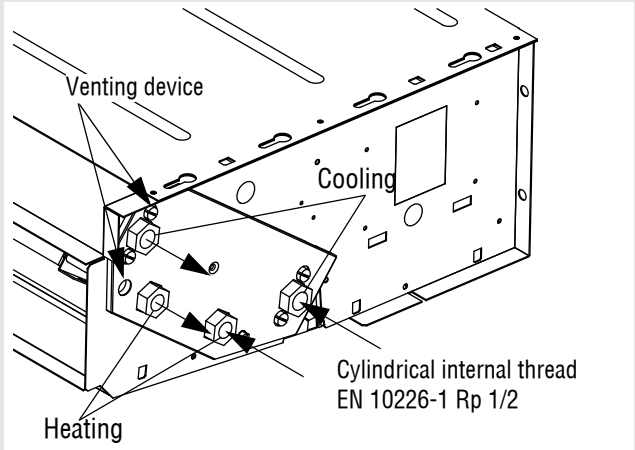
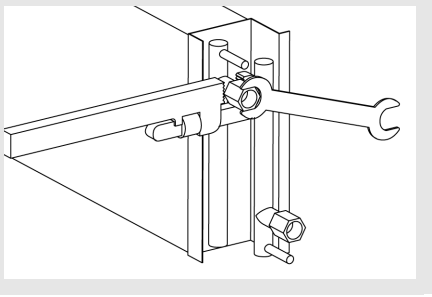
Hydraulic connections

Upon customer request, the water connection to the registers can be established either on the left-hand or right-hand side of the unit. The pipe for the supply of liquids is attached below the collector, and the return flow above the same. The registers are equipped ex works with a manual bleed valve. Any further devices for ventilation must be provided on-site.
If the unit is to be installed at a location having temperatures below zero degrees, glycol must be admixed to the coolant in a suitable ratio, to ensure that the freezing point of this liquid always stays below the minimum temperature of the operating site. Please note that the use of an antifreeze results in a loss in efficiency of the device.
For the mounting of flexible hoses, the current installation guidelines of the manufacturer are valid.





When making the hydraulic connections, suitable tools must be used, to avoid a rotation or other movements of the collector and excessive tightening of the connections.

Avoid putting the register connections under stress as a result of the weight of the connection pipes.

If flexible hoses are to be used, observe the bend radius specified by the manufacturer or the current specifications.

For all accessories, the specifications of the respective manufacturer must be observed.

Ensure that no air remains in the hydraulic circuit by providing venting devices.

Electric connections

Prior to the electrical installation, you have to make sure that the rated mains voltage is 230 V, 50/60 Hz and is single-phase. The delivered motors have insulation of type B and protection class IP21 (SP series) or IP20 (EC series). The electric connections must be made by qualified electricians only, observing current regulations and the low-voltage directive.
SCHAKO recommends using exclusively copper cables, since the device connections have not been designed for accommodating other types of cables. If they are used nevertheless, galvanic corrosion or generation of heat could take place at the connection point.

Connect the fan coil unit via an earthing cable.
Interrupt the power supply, before carrying out any electrical connection work.
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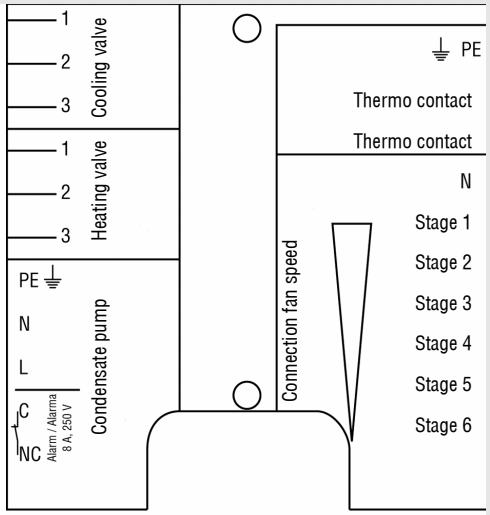
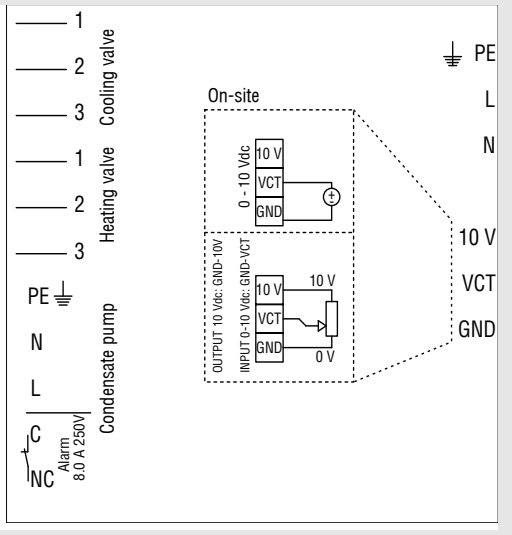
Electric connection diagram (SP series)



Electric connection diagram (EC series)



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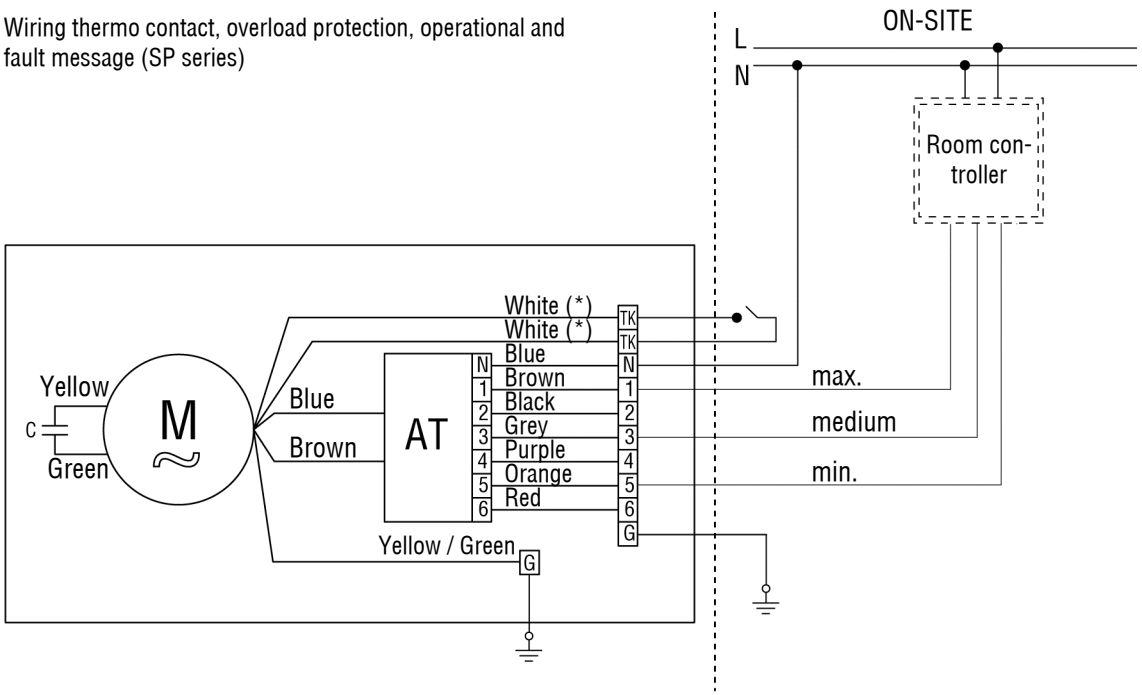
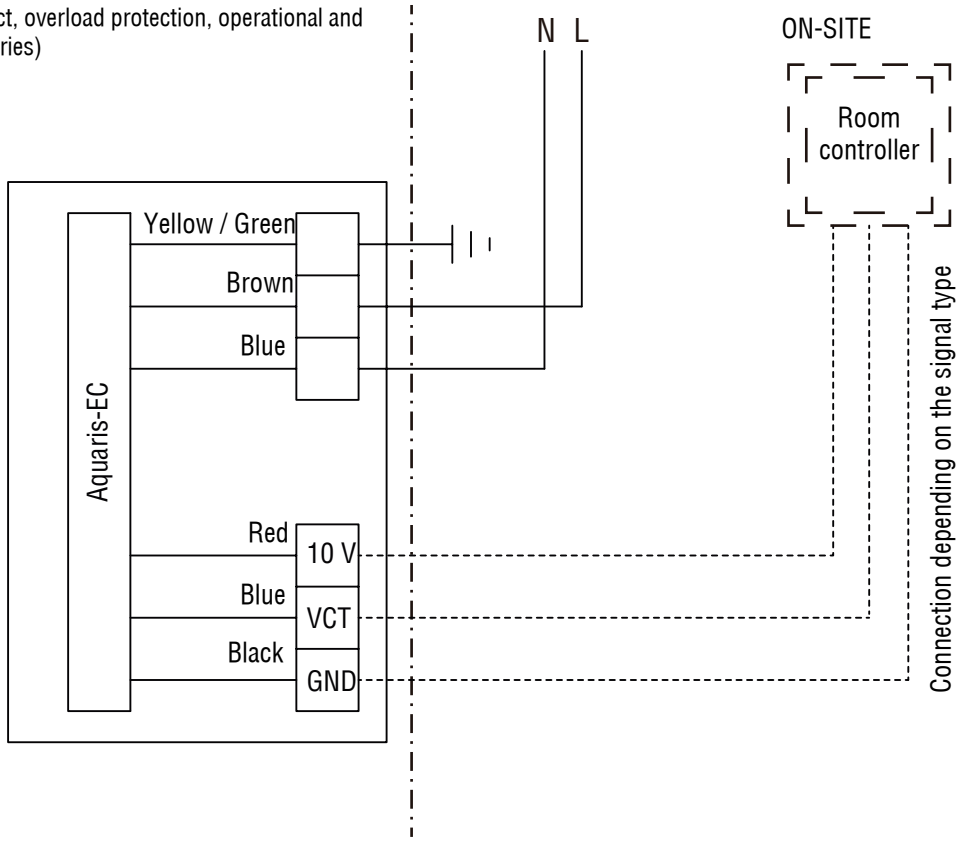
Wiring thermo contact, overload protection, operational and fault message (SP series)



White (*) = potential-free thermo contact as overload protection for motor, to be provided on-site

Wiring thermo contact, overload protection, operational and fault message (EC series)



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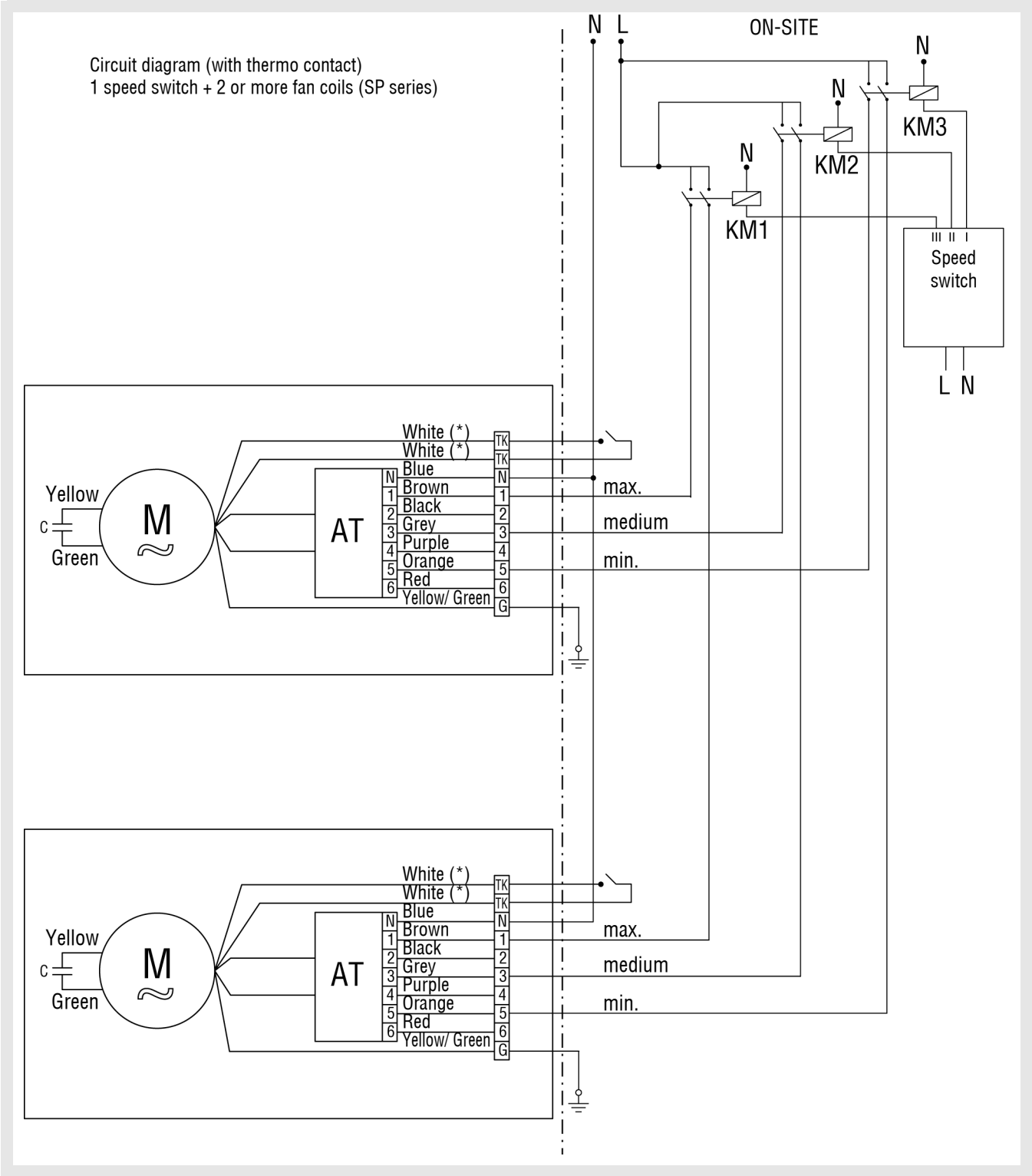

White (*) = potential-free thermo contact as overload protection for motor, to be provided on-site

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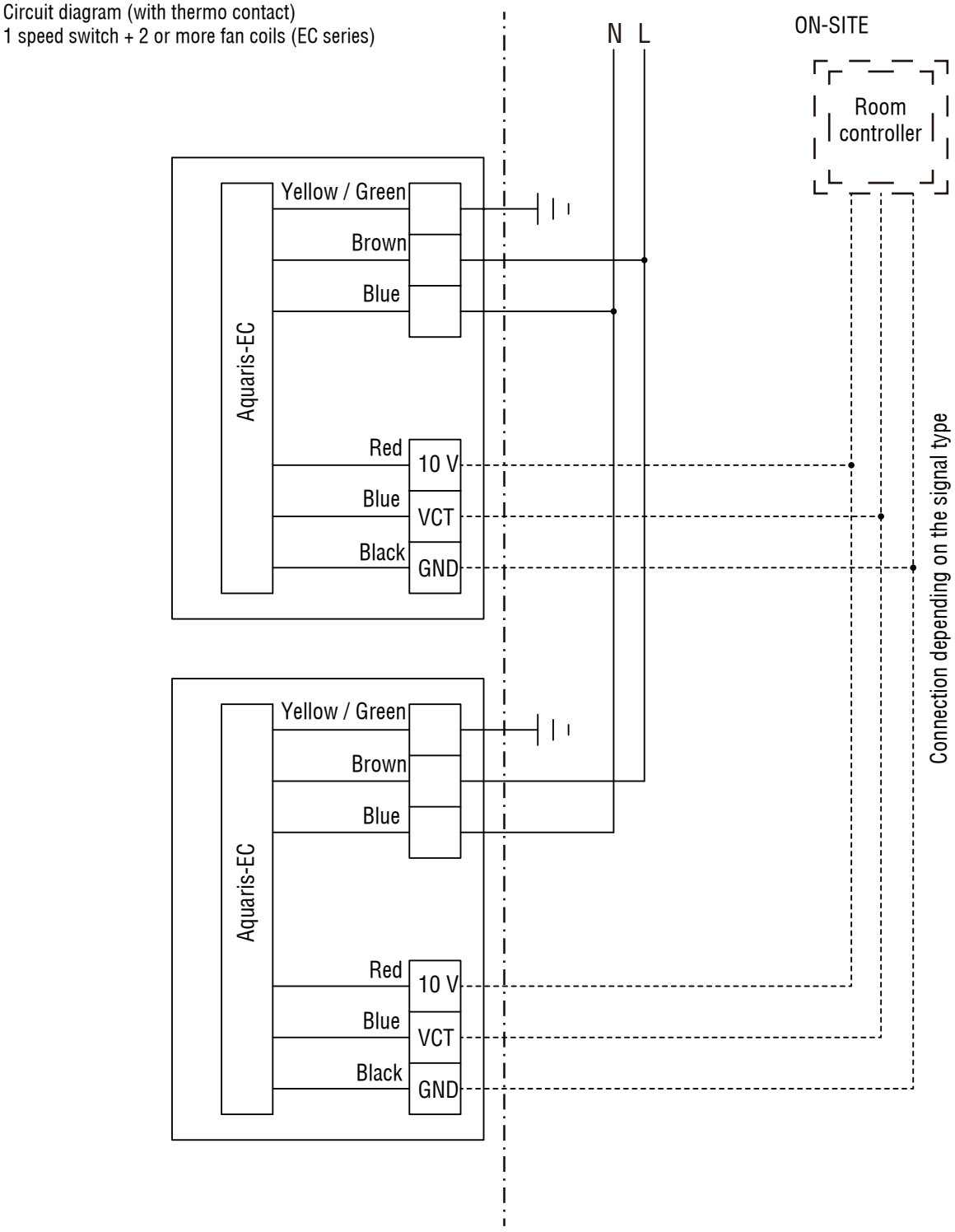
Circuit diagram (with thermo contact)
1 speed switch + 2 or more fan coils (EC series)



SCHAKO cannot be held liable for faulty electrical connections or if the power supply cable is replaced with a different cable having different characteristics.

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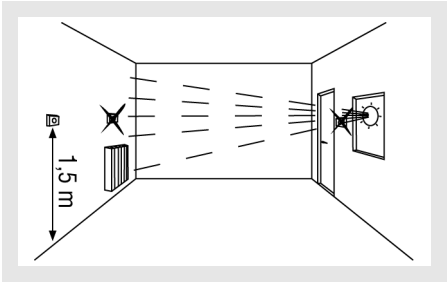
Mounting accessories

Faulty mounting of the sub-assemblies and of the Accessories of the unit can result in a substantial power loss of the unit.

Temperature controls

The temperature controls are mounted in accordance with the selected model. This is why the instructions enclosed with each model must be followed. However, in order to achieve optimum measurement by the sensors, the following basic information should be observed:

- Do not mount the temperature control close to or above a heat source (direct sunlight, lamps, television sets, radiators, etc.), in places with draught air or directly opposite to an air diffuser grille.



- Temperature controls must be mounted at least 1.5 metres above the floor.
- Mounting temperature controls on walls toward the outdoors should be avoided.

Before drilling, make sure that no power, water or gas lines are present where the temperature controls are to be mounted.

Actuators

The installation of the actuators depends on the selected model. Please follow the instructions enclosed with each model.

Valves

The valves are already mounted ex works, no further installation being required. Upon customer request, the device can also be delivered without valves, in which case the instructions of the valve manufacturer have to be followed.

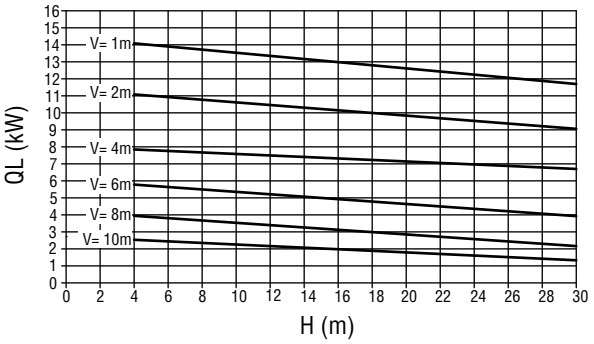
Condensate pump

Installing a condensate pump allows the condensate produced by the Aquaris Silent to be removed, even if the water discharge is higher than the condensate discharge.

If the main water drain is above the level of the Aquaris Silent drain, such a pump has to be mounted. The condensate pump prevents a water overflow of the Aquaris Silent.

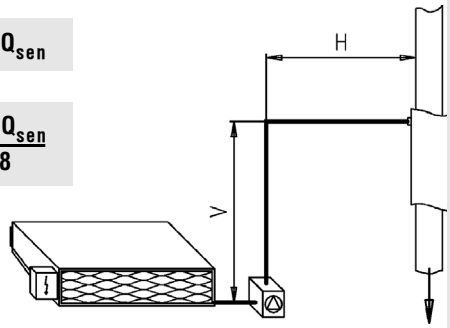
The condensate pump delivered ex works is equipped as standard with a potential-free NC contact acting as a safety switch. If draining is impossible (clogging, excessive formation of condensate, pump failure, etc.), it is possible to trigger a fault message via the safety switch or interrupting the device or the supply of the control valve. This function must be set ex works.

The diagram shows the capacity of the condensate pump as a function of the vertical distance (V) and the horizontal distance H (relative to the latent cooling capacity).



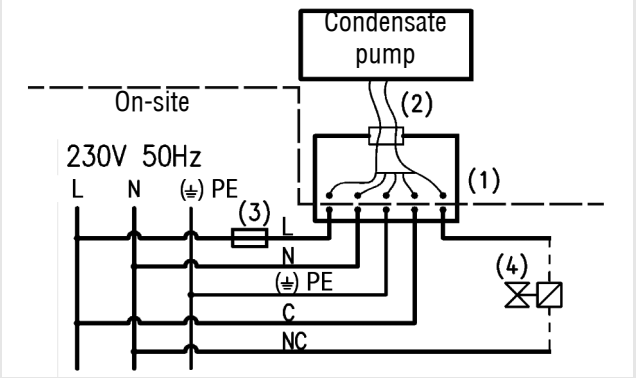
$$Q_L = Q_{ges} - Q_{sen}$$

$$Q_V = \frac{Q_{ges} - Q_{sen}}{0{,}68}$$



Q_L (kW)	= Latent capacity	Q_V (l/h)	= Amount of condensate
Q_{ges} (kW)	= Total capacity	H (m)	= Horizontal distance
Q_{sen} (kW)	= Sensible capacity	V (m)	= Vertical distance

Electric connections of the condensate pump



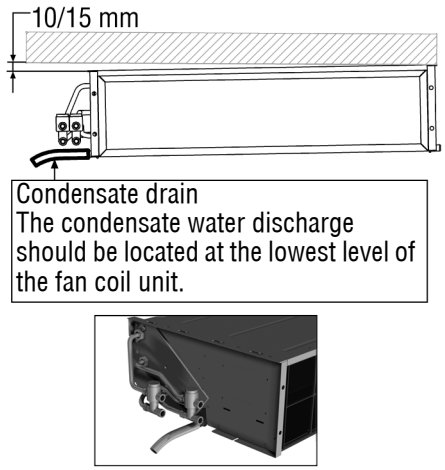
(1)	Electric connection switch	L	= red
(2)	Cable	N	= blue
(3)	630 mA fuse	PE (ground)	= yellow/green
(4)	Aquaris Silent	C	= black
		NC	= black

The condensate pump requires a permanent voltage supply that must not be interrupted by the control functions of the room controller.

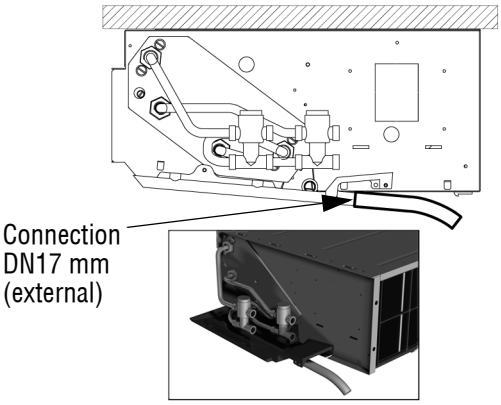
Installation, Mounting and Maintenance Aquaris Silent

Valve kit

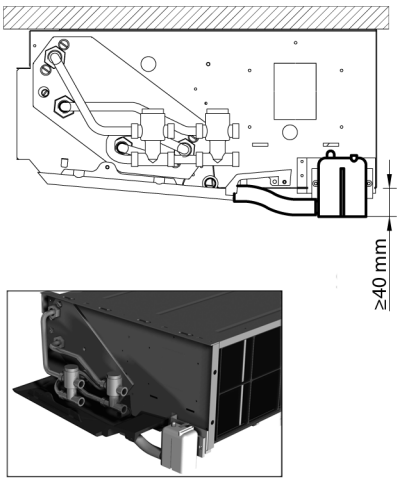
Fan coil unit



Fan coil unit + valve condensate pan



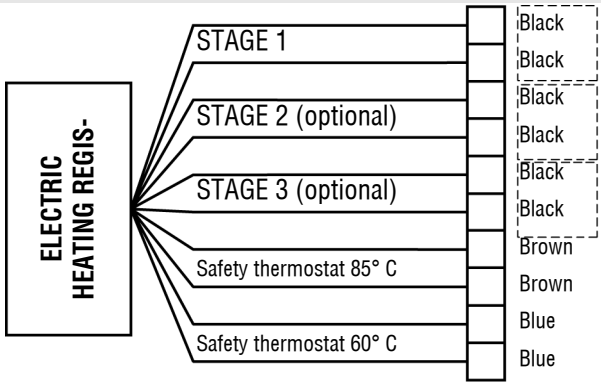
Fan coil unit + valve condensate pan + condensate pump



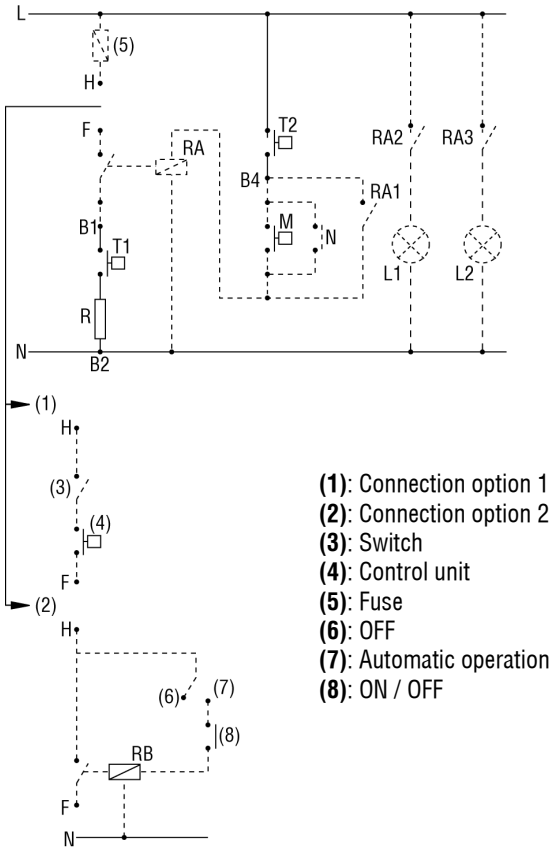
Do not fasten or install a foreign device to the condensate pan.

Electric heating register

The electric register is equipped with a protection mechanism against overheating. No further safety devices have to be mounted.



Example of a connection circuit diagram:

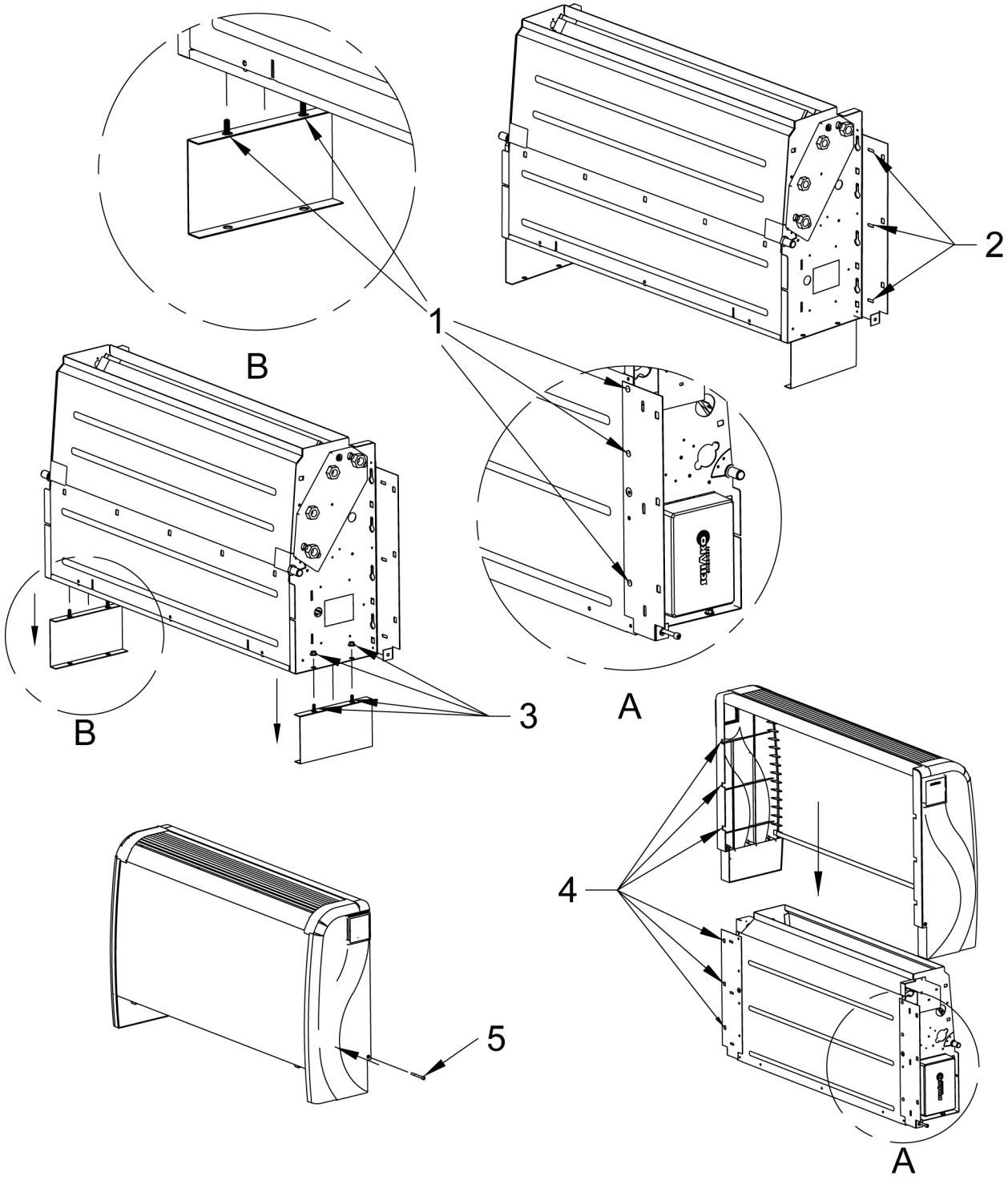


(1): Connection option 1
(2): Connection option 2
(3): Switch
(4): Control unit
(5): Fuse
(6): OFF
(7): Automatic operation
(8): ON / OFF

SCHAKO scope of delivery:
B1/B2/B3/B4: Terminals (in the terminal box of the device)
T1: Temperature control for autom. restart
T2: Safety temperature control, recommended for manual restart
R: Electric register
Not included in the SCHAKO scope of delivery:
M: Pushbutton for manual restart
N: Restart from the control unit
RA/RAB/RA1: Electrical transmitter for control, monitoring, switching on
RA2: "Operation" auxiliary contact L1 // **RA3:** "Fault" auxiliary contact L2
L1: Operation LED // **L2**: Fault LED

Installation, Mounting and Maintenance Aquaris Silent

Mounting the housing



1. Only if the unit is not delivered mounted: screw the mounting plates to the housing (1A) and tighten the nuts (M6) of the mounting base (1B).
2. Fasten the Aquaris-Silent to the wall/ceiling.
3. Unscrew and remove the mounting base from the Aquaris-Silent.
4. Position the housing and fasten it by means of the fastening hooks.
5. Fasten the housing on both sides of the Aquaris Silent using M6x60 screws.

The installer is responsible for the correct mounting. The M6x60 screws are not delivered by Schako.

Installation, Mounting and Maintenance Aquaris Silent

Checks

Prior to commissioning, the following items must be checked or guaranteed:

- The air flow through the filters is not impaired by foreign material (paper, packaging residues, etc.).
- The current consumption of the device is not higher than the power of the electric circuit it is connected to.
- The electrical properties of the device correspond to those of the electrical connection circuit.
- Hydraulic connections were tightened properly and exhibit no leaks.
- Electrical connections were made in compliance with the current regulations.
- Connecting and fastening elements have been sufficiently tightened.
- The drain pipe of the condensate pan is not clogged.
- There is a sufficient gradient for the condensate pan to be emptied correctly. (Check whether it is completely emptied by partly filling it.)
- The insulation kit was attached correctly to the pipes of the condensate pan.
- Adequate access for carrying out the maintenance activities has been provided.

After carrying out the activities described above, the correct installation of the unit must be checked.

During commissioning itself, the following items must be guaranteed:

- The motorised fan does not exhibit any vibrations or excessive noise.
- The connecting and fastening elements have been sufficiently tightened.
- The condensate pan is emptied correctly.
- In heating mode, the temperature of the discharged supply air is not above 40°C.

Maintenance

For reasons of safety, the power supply and hydraulic circuit must be disconnected prior to any maintenance activity.
If the unit was operated in heating mode, you have to wait until the register has cooled down.

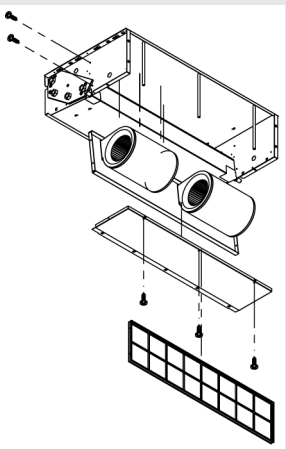
When performing maintenance activities, it is recommended wearing personal protective equipment, in order to avoid cuts and other injuries produced by sharp and pointed parts.

Disassembling the units

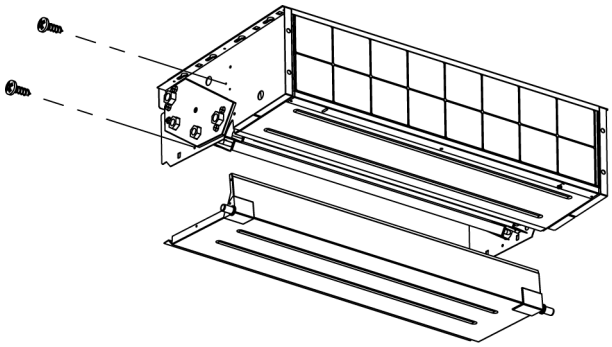
Access to the device for carrying out maintenance activities is made available by unscrewing and taking off the appropriate metal sheets.

In doing so, the following instructions must be followed:

- Take out the filter by folding it downward
- Unscrew the lateral screws (2x) and the screws on the connecting pipes
- Removing the metal sheet
- Disconnect the electrical connections (boxes) and unscrew the screws (4x) of the fan unit

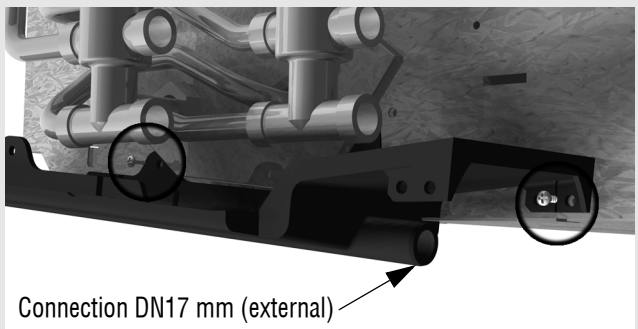


Dismounting the condensate pan



When the metal sheets are removed, the unit must not be in operation.

Dismounting the additional condensate pan



Motorised fan

The motorised fan does not require any special maintenance, as it is equipped with self-lubricating bearings. However, the blades and the rotor of the motor must be checked at regular intervals as to whether they are free of dirt.
If required, it is cleaned with compressed air or by carefully brushing the motor surface or the housing.

Installation, Mounting and Maintenance Aquaris Silent

If you want to change the operating conditions of the fan (speed, pressure, temperature, etc.), first contact your local SCHAKO sales partner, in order to find out whether the unit can be safely operated under the changed conditions.

Registers

To guarantee the technical characteristics of the device, the registers and heat exchangers must be kept in good clean condition. To ensure this, the following maintenance activities must be carried out:

- Check the condition of the register at least each time the filter is changed.
- Should the register be soiled, clean it by spraying it with water or with compressed air or by suction.
- If there are larger differences in distance between the ribs, they must be "combed".
- Once a year, the condensate pan must be checked for formation of algae, to prevent possible clogging of the drain pipe. Check whether the pan is completely emptied by partly filling it.
- Ventilate the hydraulic circuits of the register. In doing so, watch out for possible leaks of the hydraulic system.

When decommissioning the unit or shutting it down for a longer period in winter, the water must be drained from the unit, in order to avoid damage to the register due to the formation of ice. If you want to use antifreezes, you must first determine the freezing point.

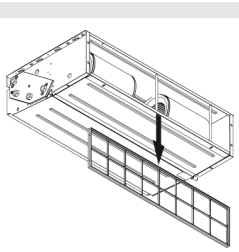
The maintenance activities must be carried out according to current standards, for example: VDI

Filter

Filter maintenance is limited to cleaning or replacing it as soon as a certain pressure drop value is reached. The service life of the filter depends on its efficiency and on the degree of soiling of the air arriving there. This is why it is recommended to check it once every three months. In the absence of a recommendation on the part of the manufacturer, the maximum pressure drop value must conform to current regulations (see UNE EN 779).

To precisely monitoring the pressure loss of the filter, it is recommended using differential manometers or pressure monitors.

If there are any devices in the surroundings that exhibit high dust formation, a monthly check and cleaning must be carried out (smoking rooms, kitchens, etc.).

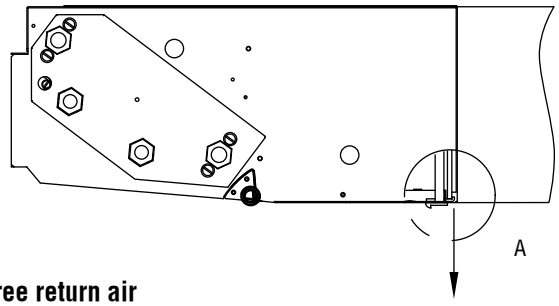


The reconditioning and replacement of the filters are described in chapter "Removing the filters". In doing so, make sure that the dust is not distributed in the surroundings.

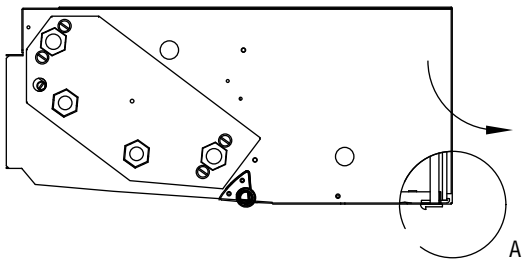
The filter is cleaned with compressed air or by washing it with warm water and a mild detergent. Before mounting it again, the filter must be dried completely.

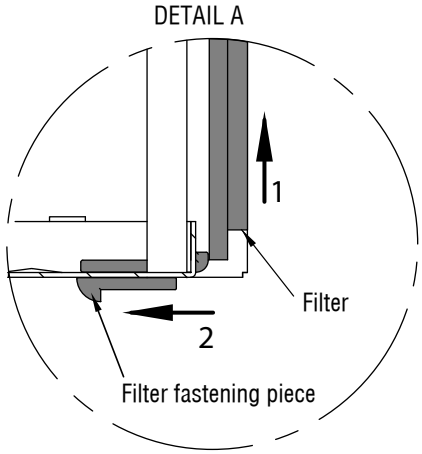
Removing the filters

Conducted return air



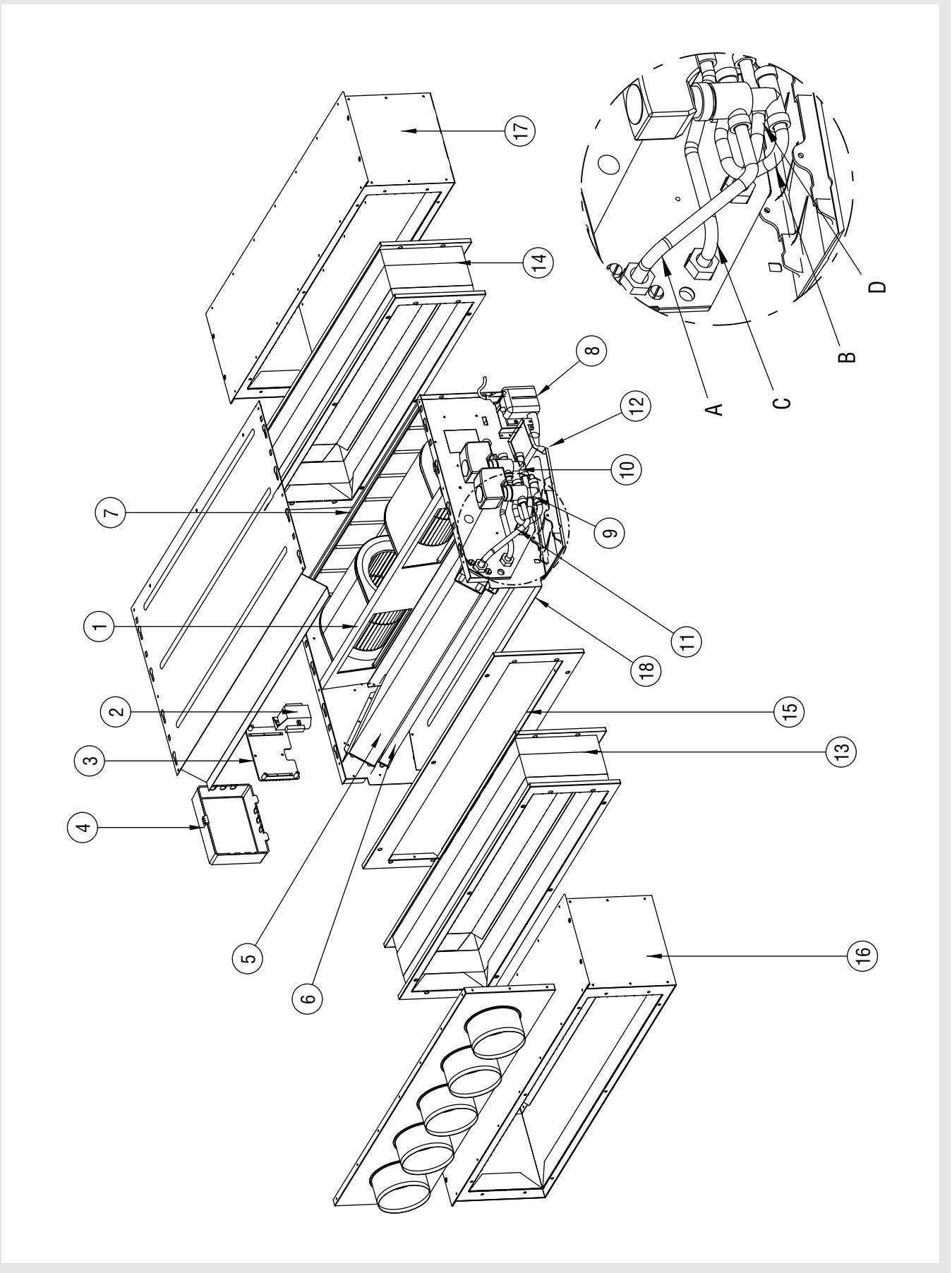
Free return air





Installation, Mounting and Maintenance Aquaris Silent

Spare parts list



Installation, Mounting and Maintenance Aquaris Silent

Nº		Article	Model	Ref.
1	1.1	Motorised fan	SP 10/11	101969
			SP 20/21	101971
			SP 30/31	101973
			SP 40/41	101975
			SP 50/51	101977
			EC10	106176
			EC 20	106177
			EC 30	106178
			EC 40	106179
			EC 50	106180
	1.2	Capacitor	SP 10	102110
			SP 20/40	102112
			SP 11/21/50	102113
			SP 30/41	102114
			SP 31/51	102115
2		Transformer	SP 10/11	102327
			SP 20/21/30/31 SP 40/41/50/51	102328
3	3.1	El. connecting plate	SP	104630
	3.2		EC	501830
4		El. terminal box	(all)	105790
5		Cooling register	10/11	101980
			20/21	101981
			30/31	101982
			40/41	101983
			50/51	101984
6	6.1	Heating register	10/11	101986
			20/21	101987
			30/31	101988
			40/41	101989
			50/51	101990
	6.2	Electric register	10/11	103646
			20/21	103647
			30/31	103648
			40/41	103649
			50/51	103650
	6.3	Electric register with blades	10/11	103940
			20/21	103941
			30/31	103942
			40/41	103943
			50/51	103944
7	7.1	Filter G2	10/11	103283
			20/21	103284
			30/31	501637
			40/41	501638
			50/51	501639
	7.2	Filter G3	10/11	105315
			20/21	105316
			30/31	501740
			40/41	501741
			50/51	501742

Nº		Article	Model	Ref.
8	8.1	Condensate pump	(all)	102116
	8.2	Mounting plate		102117
	8.3	90° angle		103893
	8.4	Hose		103894
9		Valve	(all)	(enquire)
10		Drive	(all)	(enquire)
11		Copper pipe A/right	(all)	102634
		Copper pipe B/right		102635
		Copper pipe C/right		102636
		Copper pipe D/right		102637
		Copper pipe A/left		102638
		Copper pipe B/left		102639
		Copper pipe C/left		102640
		Copper pipe D/left		102641
12		Plastic pan	Horizontal (-H)	105393
			Vertical (-V)	104061
13		Flexible connection piece supply air	10/11	FAN_0789
			20/21	FAN_0783
			30/31	FAN_0820
			40/41	FAN_0822
			50/51	FAN_0824
14		Flexible connecting piece return air	10/11	FAN_0850
			20/21	FAN_0851
			30/31	FAN_0821
			40/41	FAN_0823
			50/51	FAN_0825
15		Flange	10/11	8862_0318
			20/21	8862_0363
			30/31	8862_0306
			40/41	8862_0307
			50/51	8862_0340
16		Supply air box	(all)	(enquire)
17		Return air box	(all)	(enquire)
18		Condensate pan	10/11	3301_0015
			20/21	3301_0016
			30/31	3301_0017
			40/41	3301_0018
			50/51	3301_0019

Installation, Mounting and Maintenance Aquaris Silent

Troubleshooting

Problem	Possible cause	Solution
The unit is not working	Power supply missing	Establish power supply
	Residual current device switch was tripped	Please inform the customer service
	Motorised fan clogged by foreign material	Remove the foreign material
	Motorised fan is not working	Please inform the installer
The unit does not cool or heat sufficiently	Air filter dirty or clogged	Please clean or replace the air filter
	Motorised fan is not working	Please inform the installer
	Air inlet and outlet of the inner unit clogged	Remove foreign material and clean the unit
	Air in the interior of the register	Ventilate the register Please inform the installer
	Temperature control or measuring device attached to an unfavourable location or defect of same	Check and/or change the installation site
	Air or volumetric flow insufficient	Select a higher speed
Insufficient volumetric flow	Filter dirty or clogged	Clean or replace filter
	Accidental clogging in the interior of the unit or at the air inlet	Remove foreign material and clean the interior of the unit
The unit is losing water	Condensate pan flows over	Check whether the drain is clogged
	The unit has not been installed with the correct inclination	Correct the inclination. Please inform the installer
	Water is draining from the condensate pan	Please inform the installer
	The water circuit of the register is leaking	
	Register damaged	
	Incorrect hydraulic connection or incorrect mounting of the valve kit	
Control unit effects continuous starts and stops	Temperature control or measuring devices attached to an unfavourable location	Check and/or change the installation site
	Temperature deviations of the coolant or heating fluid	Please inform the installer
	There are different units with local control elements that use coolant or heating fluid of the same circuit	
	The control is connected incorrectly	Interrupt the power supply of the unit and inform the installer
The unit is working with too much noise	The air intake or supply air openings or lines are clogged	Remove foreign material and clean the unit
	Loose screws and fastening elements	Tighten screws
	Filter dirty or clogged	Clean or replace filter
	Loose connecting cables	Reconnect
	Foreign material or dirt on register surface	Remove foreign material by careful brushing

EC Declaration of Conformity

[FOR CE MARKING]

FERDINAND SCHAD KG WITH THE COMPANY HEAD OFFICE IN
Steigstraße 25-27
D-78600 Kolbingen
(GERMANY)

HEREBY DECLARES THAT THE DESIGN AND CONSTRUCTION OF THE AQUARIS SILENT:

Model:	SP-EC
Type:	10-51
Register type:	3 - 4
Position:	HT - VT
Model:	RR - LL
Year of manufacture:	2013

COMPLY WITH THE FOLLOWING REGULATIONS:

- Machinery Directive: (2006/42 EC)
- Low Voltage Directive: 2006/95/EC
- Directive on Electromagnetic Compatibility: 2004/108/EC
- Directive on General Product Safety: 2001/95/EC

APPLICABLE HARMONISED REGULATIONS

- **DIN-EN-ISO 12100 SAFETY OF MACHINERY** - Safety of Machinery - Basic terms, general principles of design - Part 1: Basic terminology, methodology
- **DIN-EN-ISO 12100 SAFETY OF MACHINERY** - Safety of Machinery - Basic terms, general principles of design - Part 2: Technical guiding principles
- **EN-ISO 13857:2008 SAFETY OF MACHINERY** - Safety distances to prevent hazard zones from being reached by upper and lower limbs
- **EN 60204-1 SAFETY OF MACHINERY** - Electrical Equipment of Machines - Part 1: Specifications for General Requirements
- **EN ISO 14121-1:2007 SAFETY OF MACHINERY** - Risk assessment - Part 1: Guiding principles
- **DIN-EN 1886 VENTILATION FOR BUILDINGS** - Ventilation for buildings - Air handling units - Mechanical performance, testing

Signed:

Dr. Marcus Müller
Kolbingen, 2013