



INSTALLATION AND OPERATING INSTRUCTIONS

Adiabatic Atomiser Humidifier
Condair **ABS3**

Thank you for choosing Condair

Installation date (MM/DD/YYYY):

Commissioning date (MM/DD/YYYY):

Site:

Model:

Serial number:

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1 Introduction

1.1 To the very beginning

We thank you for having purchased the **adiabatic atomiser humidifier Condair ABS3**.

The Condair ABS3 incorporates the latest technical advances and meets all recognized safety standards. Nevertheless, improper use of the adiabatic air humidifier Condair ABS3 may result in danger to the user or third parties and/or impairment of material assets.

To ensure a safe, proper, and economical operation of the Condair ABS3, please observe and comply with all information and safety instructions contained in the present installation and operating instructions as well as in the separate documentations of the components installed in the humidification system.

If you have questions, which are not or insufficiently answered in this documentation, please contact your Condair supplier. They will be glad to assist you.

1.2 Notes on the installation and operating instructions

Limitation

The subject of these installation and operating instructions is the adiabatic atomiser humidifier Condair ABS3. The various accessories are only described insofar as this is necessary for proper operation of the equipment. Further information on accessories can be obtained in the respective instructions.

These installation and operating instructions are restricted to the **installation, commissioning, operation, servicing, and trouble-shooting** of the Condair ABS3 and is meant for **well trained personnel being sufficiently qualified for their respective work**.

The installation and operating instructions are supplemented by various separate items of documentation. Where necessary, appropriate cross-references are made to these publications in the installation and operating instructions.

Symbols used in this manual



CAUTION!

The catchword "CAUTION" designates notes in this installation and operating instructions that, if neglected, may cause **damage and/or malfunction of the unit or other material assets**.



WARNING!

The catchword "WARNING" used in conjunction with the general caution symbol designates safety and danger notes in this installation and operating instructions that, if neglected, may cause to **injury to persons**.



DANGER!

The catchword "DANGER" used in conjunction with the general caution symbol designates safety and danger notes in this installation and operating instructions that, if neglected, may lead to **severe injury or even death of persons**.

Safekeeping

Please safeguard these installation and operating instructions in a safe place, where they can be immediately accessed. If the equipment changes hands, the documentation must be passed on to the new operator.

If the documentation gets mislaid, please contact your Condair supplier.

Language versions

These installation and operating instructions are available in various languages. Please contact your Condair supplier for information.

Copyright protection

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The manufacturer reserves the right to fully exploit commercial patent rights.

2 For your safety

2.1 General

Every person working with the Condair ABS3 must have read and understood the installation and operating instructions before carrying out any work.

Knowing and understanding the contents of the installation and operating instructions is a basic requirement for protecting the personnel against any kind of danger, to prevent faulty operation, and to operate the unit safely and correctly.

All ideograms, signs and markings applied to the unit must be observed and kept in readable state.

Except for the steps mentioned in this manual, the user must not carry out further operations with the Condair ABS3.

2.2 Qualification of personnel

The Condair ABS3 must be installed, operated, serviced and repaired only by qualified persons familiar with the equipment.

For safety and warranty reasons any action beyond the scope of this manual must be carried out only by qualified personnel authorized by the manufacturer.

It is assumed that all persons working with the Condair ABS3 are familiar and comply with the appropriate regulations on work safety and the prevention of accidents.

Condair ABS3 may not be used by persons (including children) with reduced physical, sensory or mental abilities or persons with lacking experience and/or knowledge, unless they are supervised by a person responsible for their safety or they received instructions on how to operate the unit.

Children must be supervised to make sure that they do not play with unit.

2.3 Intended and non intended use

Intended use

The Condair ABS3 is **exclusively** intended for direct room humidification under strict adherence to the information and notes given in this manual. Any use beyond this scope is considered to be a violation of the intended purpose and may endanger your safety or possibly cause the product to be damaged. Any use other than the intended purpose of the Condair ABS3 is **at customer's own risk and for no means the manufacturer or supplier will be liable for possible damage**.

Operation of the Condair ABS3 in the intended manner requires that all the information contained in this operation manual is observed (in particular the safety and hygiene instructions).

Special care must be observed to properly install, maintain, clean, and disinfect the Condair ABS3 to preserve acceptable levels of hygiene.

Non intended use

The Condair ABS3 is **not suitable for humidification in health-care premises**. Due to the nature of aerosol generating humidification units, it is **not** recommended to use these in environments where the occupants or materials in the space are adversely sensitive to airborne bacteria, viruses, dust, and debris.

The Condair ABS3 must **not be used in hazardous** locations.

Danger that may arise from the unit



DANGER!

Danger of electric hazard

One may get in touch with live parts when the wiring box is open. Touching live parts may cause severe injury or danger to life.

Prevention: before carrying out any work set the Condair ABS3 out of operation as described in [chapter 5.3](#) (switch off the unit, disconnect it from the mains and stop the water supply) and secure the unit against inadvertent power-up.



DANGER!

Health risk because of inadequate hygiene!

Badly maintained humidifiers can endanger the health. If the unit is insufficiently maintained ill-making germs may grow in the water reservoir and the water supply pipe of the Condair ABS3 and may affect the air passing through the humidifier during operation.

Prevention: the Condair ABS3 must be cleaned in the prescribed intervals according to the information given in [chapter 6](#). The cleaning works must be carried out correctly and the air filter must be replaced after his prescribed lifetime has elapsed.



DANGER!

Health risk!

Due to health risks, the silicate content in the supply water – in any form – must not exceed 12 mg/l.

If the silicate content of the supply water is higher a silicate filter must mandatory be installed in the water supply line before the humidifier by the customer.

Behaviour in case of danger

If it is suspected that **safe operation is no longer possible**, then the Condair ABS3 should immediately **be shut down and secured against accidental power-up** according to [chapter 5.3](#). This can be the case under the following circumstances:

- if the Condair ABS3 is damaged
- if the Condair ABS3 is no longer operating correctly
- if connections and/or piping are not sealed
- if electrical cables are defective
- if the Condair ABS3 is no longer fastened correctly.

All persons working with the Condair ABS3 must report any alterations to the unit that may affect safety to the owner without delay.

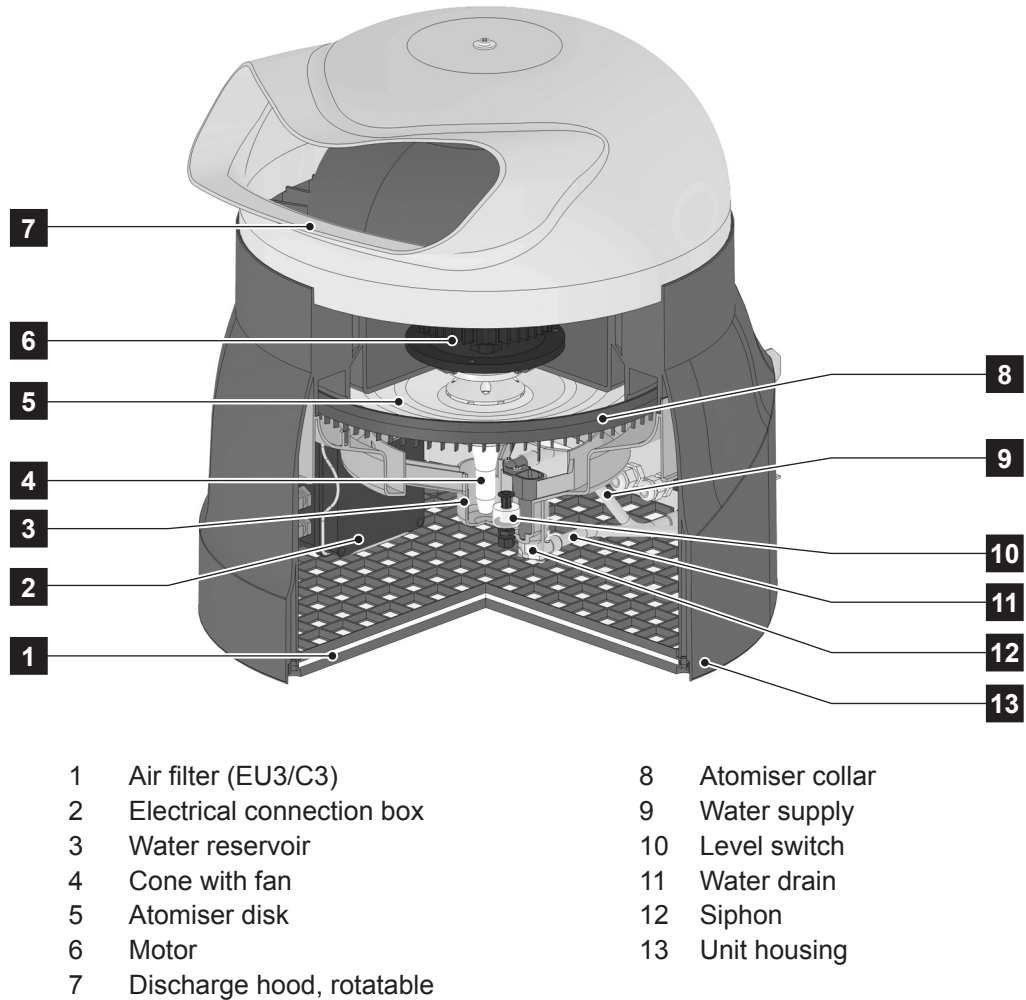
Prohibited modifications to the unit

No modifications must be undertaken on the Condair ABS3 without the express written consent of the manufacturer.

For the replacement of defective components use exclusively **original accessories and spare parts** available from your Condair supplier.

3 Product overview

3.1 Unit construction



3.2 Principle of operation

The Condair ABS3 operates according to the **atomization principle**.

The water is drawn in through cone (4) from the water reservoir (3) and is hurled from the atomiser disk (5) against the atomiser collar (8), thereby producing aerosols (fog). The level in the water reservoir is monitored and controlled with the float switch (10).

The fan attached to the cone draws in room air through the air filter (1) on the bottom of the base unit. This air transports the aerosols to the atomiser outlet (7) and distributes them in the room.

The humidifier is controlled via an external On/Off humidistat or an external 0-10V continuous humidity controller which opens and closes the inlet valve. When controlled via the external continuous humidity controller the inlet valve is opened and closed cyclically, depending on the control signal.

3.3 Identification of the unit

The indication of the unit as well as the most important unit data are found on the type plate:

Type designation	_____	 Condair Group AG CH-8808 Pfäffikon SZ Zerstäuber Atomizer Atomiseur Condair ABS3 120 230V  2543376 230 V ~, 50/60 Hz, 230 W (300 W) Serial Nr.  08/S01776/00001 F3003  Januar 09
Outlet angle in degrees	_____	
Unit voltage	_____	
Unit voltage/power consumption	_____	
Serial number	_____	
Month/Year	_____	
Approval symbols	_____	

3.4 Accessories and options

Accessories

Designation	Code	Description
Filter valve	Z261	Filter valve with G 1/2" internal thread connectors for the installation in the water supply line.
Room humidistat	HSC	On/Off room humidistat
Room humidistat	H5 / H5V	On/Off room humidistat (Note: this humidistat can be used as a maximum humidistat).
Room humidity controller	RCC	0-10 V continuous humidity controller with sensor

Options

Designation	Code	Description
Anti-freeze kit	AFP	Anti-freeze kit for the operation of the Condair ABS3 up to a temperature of -2 °C. The anti-freeze kit consist of a heating element connected to the control board. The Condair ABS3 is prepared for the installation of the anti-freeze kit. The control of the heating element is established via the temperature sensor built into the unit. The temperature sensor switches the heating element on if the ambient temperature drops below 1°C.

3.5 Standard delivery

The standard delivery includes:

- Adiabatic atomiser humidifier ABS3 with options according delivery note.
- Ordered accessories with operating instructions, packed separately
- Installation and operating instructions (this document).
- Fixing set for the wall mounting of the unit (1 pc. wall bracket, 4 screws with dowels ø8 mm, 1 pc. safety screw M6x20 with washer ø6x12)
- Fixing set for the hanging installation (3 pcs. angle brackets)
- Water supply pipe (L: 1.5 m, with G 3/4" union nuts)
- Adapter G 1/2" - G 3/4"
- Water drain pipe (L: 1.5 m, internal diameter: 10 mm)
- 2 pcs. cable straps
- Spare parts list

3.6 Storing/Transportation/Packaging

Storing

Store the unit in the original packaging in a protected area meeting the following requirements:

- Room temperature: 1 ... 40 °C
- Room humidity: 10 ... 75 %rh

Transportation

For optimum protection always transport the unit in the original packaging.

If possible, always transport the unit with the help of another person.

Packaging

Keep the original packaging of the Condair ABS3 for later use.

In case you wish to dispose of the packaging, observe the local regulations on waste disposal. Never dispose of the packaging to the environment.

4 Mounting and installation work

4.1 Important notes for mounting and installation work

Qualification of personnel

All mounting and installation work must be carried out only by **well qualified personnel**, which is familiar with the Condair ABS3.

All work concerning the electric installation must be performed only by adequately qualified personnel (electrician or workman with equivalent training).

Safety

The Condair ABS3 may be connected to electric mains only after all installation work has been completed.

The local regulations relating job safety must be followed and complied with for all installation and mounting work.

General notes

All statements relating to the positioning and installation of the ABS3 as well as to the water and electrical installation must be followed and complied with.

Observe and comply with all local regulations dealing with water and electrical installations.

When installing individual components use **the fixing materials supplied with the unit**. If fixing with the materials supplied is not possible in your particular case, select a method of fixing that is of similar stability. In case of doubt, please contact your Condair supplier.

The connection of the water supply pipe and the water drain pipe on the unit (see [chapter 4.3](#)) as well as the connection of the main cable and the cable of the external humidistat/humidity controller in the unit (see [chapter 4.4](#)) can be done before the unit is mounted to the wall/ceiling.

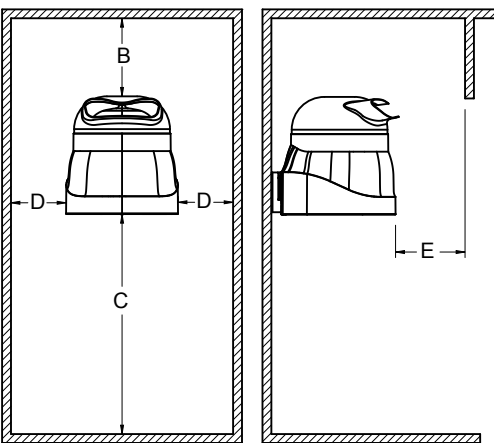
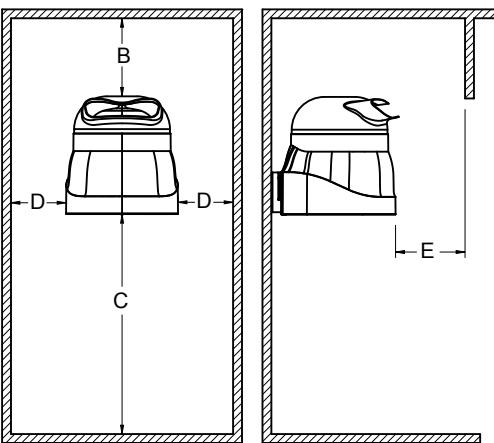
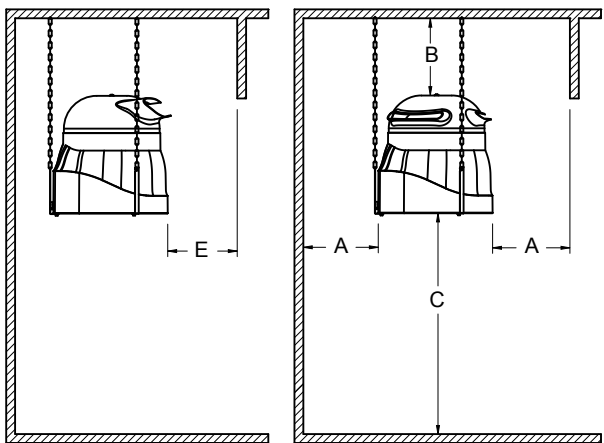
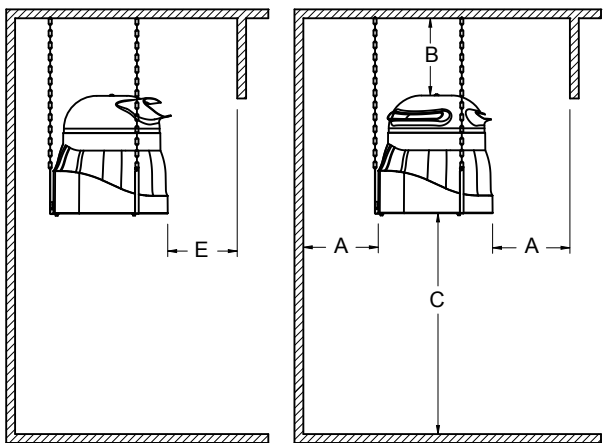
4.2 Mounting the unit

4.2.1 Notes on unit location

In order to ensure the correct function of the humidifier and the accessibility for maintenance, please observe the following locating instructions:

- The Condair ABS3 humidifiers are designed for **wall mounting** or **ceiling mounting** (hanging installation). Make sure that the structure (wall, pillar, ceiling, etc.) on which the unit is to be mounted has sufficient carrying capacity and can accommodate the fastening elements.
- In order to ensure the correct function, the Condair ABS3 must be installed exactly horizontal (with the air filter facing downward against the floor).
- Locate the unit such that the aerosol stream can spread freely. The obstruction of the aerosol stream by objects such as tubular racks, machines, supports, etc., will result in stagnation and the formation of turbulence which could cause condensation. Since the discharge hood of the humidifier can be turned horizontally, the aerosol stream can be directed to bypass any obstructions.

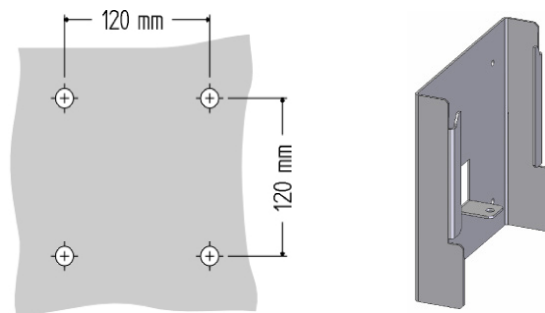
In the following table you find the **minimum distances** (approximate values), which must be maintained when positioning the Condair ABS3. The dimensions relate to a room temperature of 20 °C and a relative humidity of 45 %. At lower temperatures and/or higher relative humidity larger minimum distances must be maintained

Wall mounting		Ceiling mounting			
					
	A	B	C	D	E
Minimum distance in m	≥ 3.0	≥ 1.0	≥ 1.5	≥ 1.0	≥ 5.0

- Mount the unit such that there is **sufficient room for maintenance**. Also make sure that the unit is readily accessible and that there is no accident risk during maintenance.
- If units are to be installed facing each other, make sure that they are **at least 10 m apart**.
- Insulate cold water piping in the vicinity of the aerosol stream (risk of condensation).
- The evaporation process extracts heat from the ambient air. Make sure, therefore, that the aerosol stream is not directed at persons.

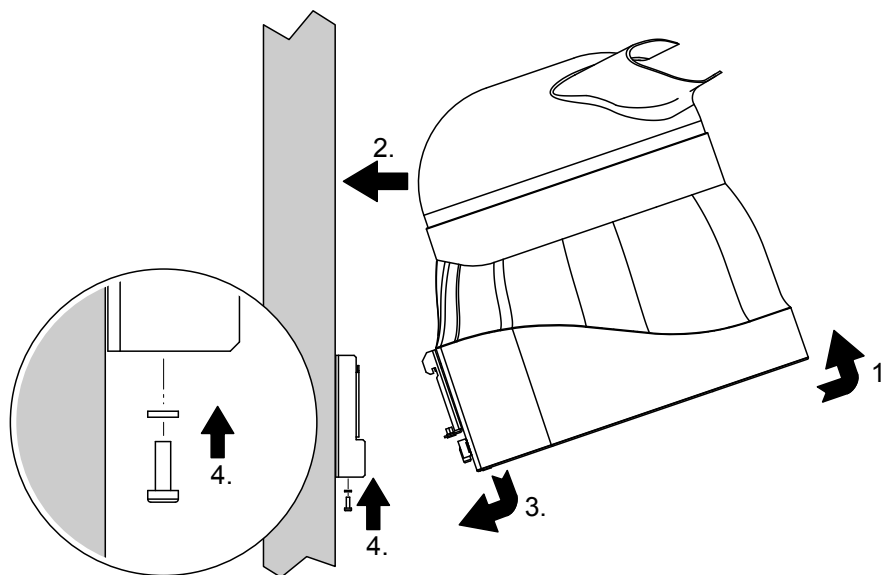
4.2.2 Wall mounting

To fix the humidifier to the wall, use the wall bracket, screws and dowels provided. The wall bracket can be used as template for the fixing holes.



Mounting the wall bracket

1. Mark the fixing holes on the wall using the wall bracket as template. Make sure the wall bracket is aligned exactly horizontal before marking the holes.
2. Drill the four fixing holes (ø8 mm, 45mm deep).
3. Clean the holes and insert the dowels.
4. Fix the wall bracket with four screws to the wall (position of the bracket as shown in the figure above). Before tightening the screws align the wall bracket exactly horizontal.

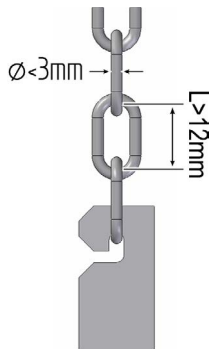


Mounting the unit

1. Lift the unit above the wall bracket and swivel it slightly towards the wall.
2. Move the unit towards the wall into the wall bracket.
3. Swivel the unit to the horizontal position until both brackets are perfectly coupled.
4. Secure the unit in the wall bracket with the safety screw M6x20 and the washer ø6x12 supplied (**mandatory**).

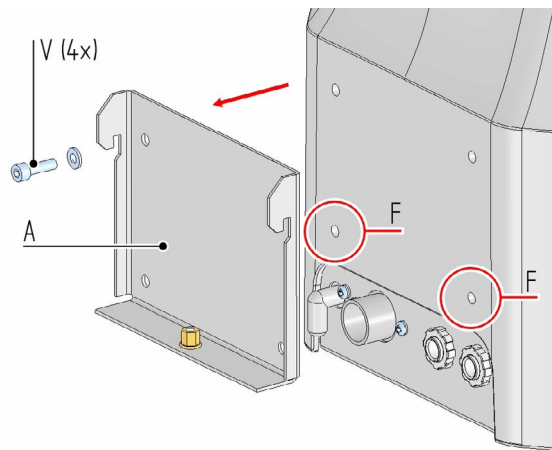
4.2.3 Ceiling mounting (hanging installation)

Ceiling mounting is done with the angle brackets supplied as standard.



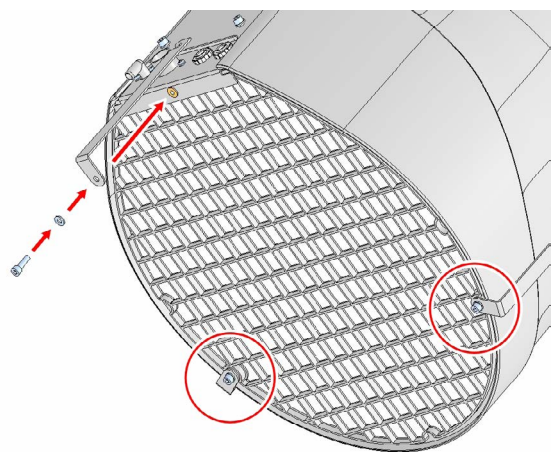
The three chains for hanging up the unit must be provided by the customer. The chains must be fixed at the ceiling exactly perpendicularly above the three angle brackets fixed to the unit. The fixing points and the chains must have a sufficient load-bearing capacity, in order to carry the weight of the unit (see [chapter 9.1](#)).

Use chains made of steel (preferably corrosion-resistant steel). The dimension of the chain links must meet to the specifications in the adjacent figure.



1. Undo the 4 screws "V", and remove the mounting plate "A" on the backside of the unit.
Note: Store the mounting plate "A" for a possible later use.

Now, you have 5 screws with washers (4 from the just removed mounting plate and the safety screw provided). Refit two of the screws and washers into the fixing holes "F".

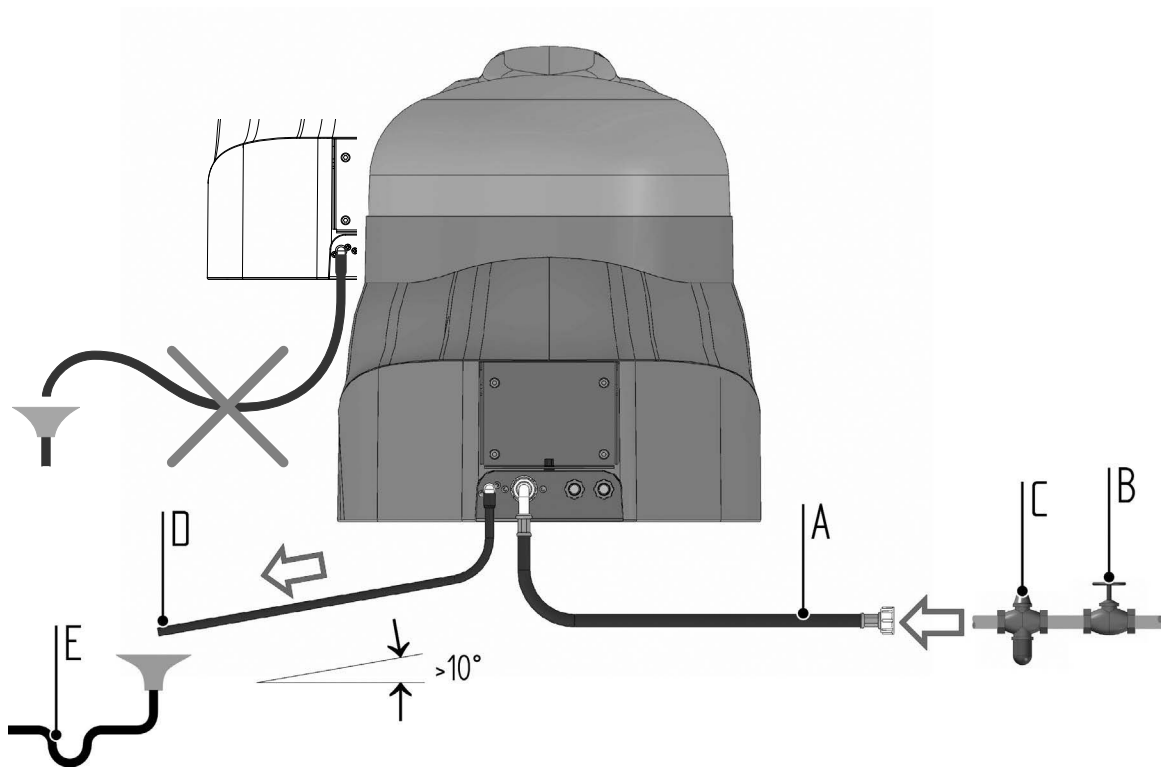


2. Fix the three angle brackets (for hanging installation) with the screws and washers to the unit, as shown in the adjacent figure.

3. Hook the unit with the angle brackets into the chains and check again that the device hangs exactly horizontal.

4.3 Water installation

4.3.1 Overview water installation



- A Water supply pipe (included in the delivery, L: 1.5 m, G 3/4")
- B Stop valve (by client)
- C Water filter (accessory Z261, installation recommended, by client)
- D Drain pipe (included in the delivery, L: 1.5 m) with constant downward slope $>10^\circ$
- E Open drain funnel with siphon (by client)



4.3.2 Notes on water installation

Water supply

The water supply is to be carried out according to the figure found in [chapter 4.3.1](#) and the applicable local regulations for water installations. The indicated connection specifications must be observed.

- The installation of a **stop valve** (mandatory) and a **water filter** (accessory “Z261”, installation recommended) should be made as close as possible to the unit.
- Admissible supply water pressure: 1 to 6 bar
- Admissible water temperature: 5 to max. 20 °C
- **Notes on water quality:**
 - For the water supply of the Condair ABS3, use exclusively **untreated tap water** or **fully demineralized water with a max. silicate content of 12 mg/l and a max. of 150 CFU/ml (no pathogens)**.
 - The use of **additives** such as corrosion inhibitors, disinfectants, etc. is **not allowed**, since these additives may endanger health and affect proper operation.
- The connection material must be **pressure-proof** and **certified for use in drinking water systems**.
- **Important!** Before connecting the water line, **the line should be well flushed out**.



CAUTION!

The thread at the humidifier connection is made of plastic. To avoid overtightening, the union nut of the water pipe must be tightened by hand only.

Water drain

The water drain is to be carried out according to the figure found in [chapter 4.3.1](#) and the applicable local regulations for water installations. The indicated connection specifications must be observed.

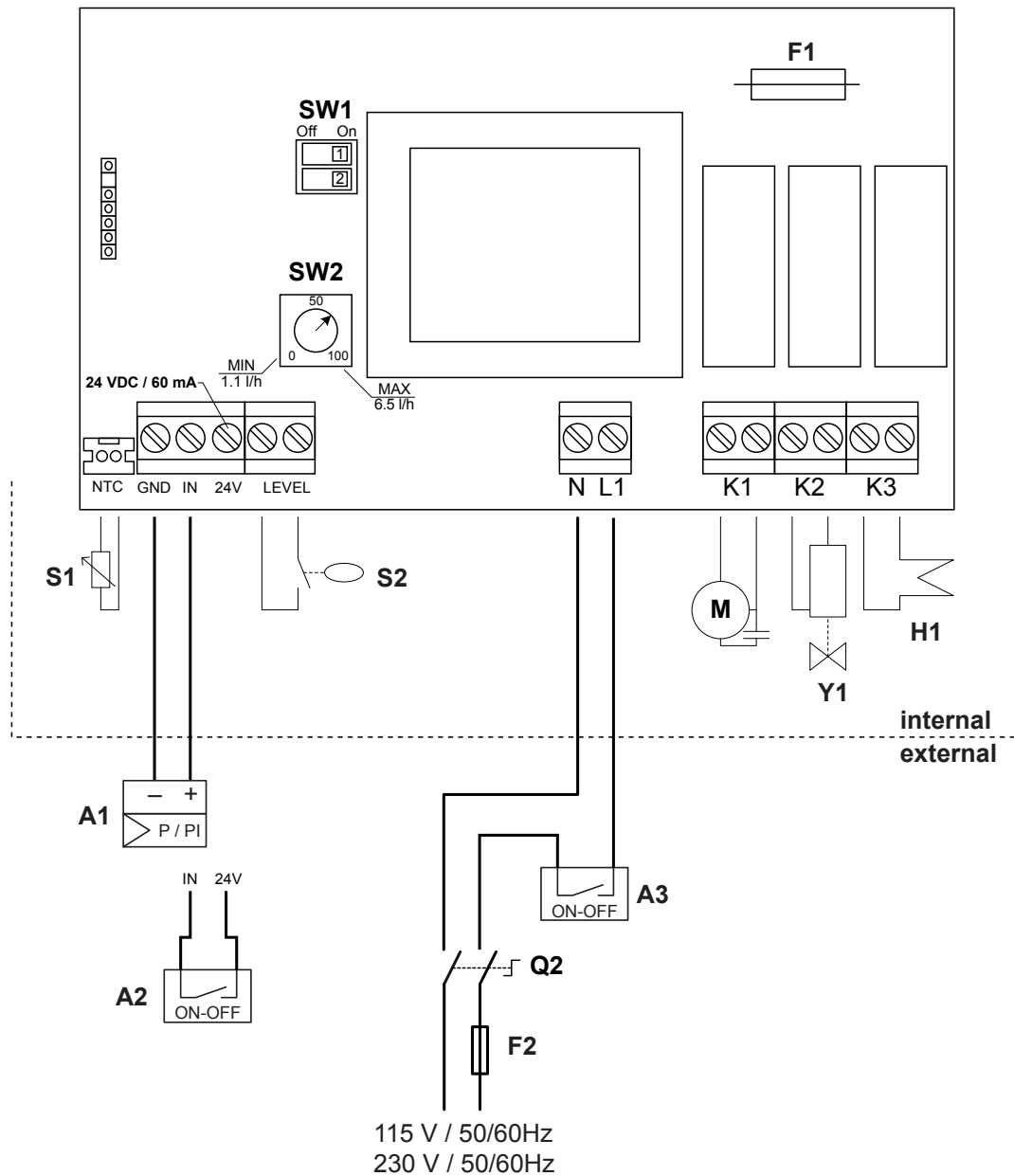
- Make sure that the drain line is routed with a constant downward slope $>10^\circ$ to the drain funnel of the building.
Important: The drain pipe **must be prevented from sagging**; support with brackets, if necessary.
- Make sure that the minimum inside diameter of 10 mm is maintained throughout the entire length of the drain pipe and that the pipe is not kinked.
- Make sure that the drain pipe is correctly fixed and easily accessible for inspections and cleaning purposes.

When operating the Condair ABS3 with fully demineralized water:

Fully demineralized water is aggressive! For this reason, use exclusively installation material made of corrosion-resistant steel (min. DIN 1.4301) or plastic.

4.4 Electric installation

4.4.1 Wiring diagram Condair ABS3



- A1 Continuous humidity controller 0...10 V
- A2 On/Off humidistat
- A3 Maximum humidistat (not mandatory, required contact load: 230V/2A or 115V/4A)
- S1 Temperature sensor (to switch the optional heating H1 on and off)
- S2 Level switch
- H1 Heating (option anti-freeze kit)
- F1 Internal fuse transformer (315 mA, slow acting)
- F2 External fuse voltage supply (2.5 A, slow acting)
- M Fan motor
- Q2 External service switch (with a minimum contact clearance of 3 mm)
- SW1 DIP switches for setting the flushing cycles
- SW2 Rotary switch for setting the power limit
- Y1 Inlet valve

4.4.2 Notes on electric installation

The electric installation must be carried out according to the wiring diagram in [chapter 4.4.1](#) and the applicable local regulations. All information given in the wiring diagram must be followed and observed.

The electrical installation of the Condair ABS3 includes:

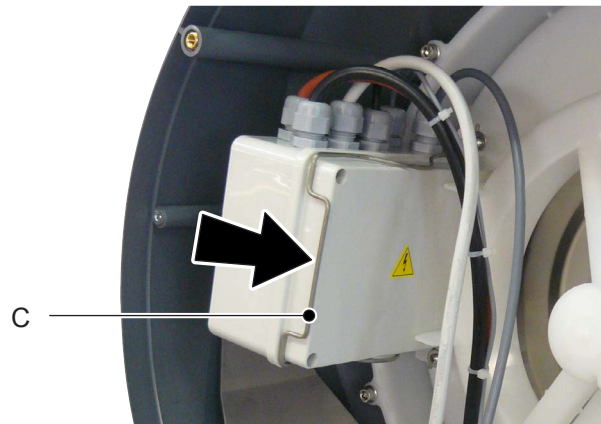
Installation
Power supply 230V/50-60Hz or 115V/50-60Hz Connection of power supply to terminals L1 and N according to the wiring diagram. The service switch Q2 (disconnects all 2 wires with a minimum contact clearance of 3 mm) and the fuses F2 (2.5 A, slow acting) are mandatory. Cable section according to the applicable local regulations.
 CAUTION! Before connecting the power supply cable make sure the local mains voltage meet the value stated on the rating plate of the Condair ABS3.
External humidity controller (A1) or external On/Off humidistat (A2) Connect the external humidity controller 0...10V to terminals IN (+) and GND (–) or connect the external On/Off humidistat to terminals IN and 24V. Note: In locations with electromagnetic interferences use shielded connecting cables.
Maximum humidistat (A3), not mandatory Connect the switching contact of the maximum humidistat to supply line L1 according to the wiring diagram. Required contact load: 230V/2A or 115V/4A

Note: In order to connect the mains cable and the cable of the external humidistat/humidity controller to the control board, the electric connection box in the unit must be dismounted and opened. For this purpose please observe the notes in [chapter 4.4.3](#) and the notes regarding the cabling in [chapter 4.4.4](#).

4.4.3 Dismounting and mounting the electric connection box

Dismounting the electric connection box

1. Undo the three screws at the air filter assembly and remove the air filter assembly.



2. Push fixing clip "C" sideways and carefully pull connection box out of the unit.
 3. Undo the four screws of the connection box and remove the cover.
- Now you can connect the cables on the control board or configure the control.

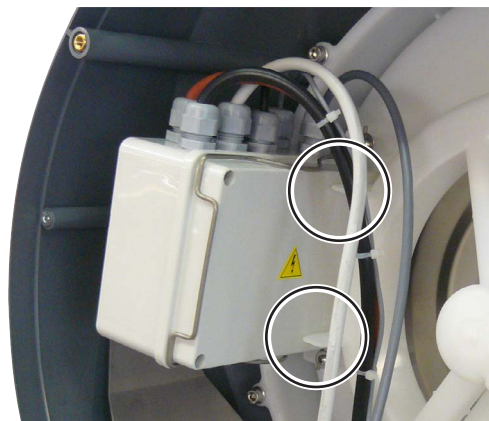


CAUTION!

The **electronic components** inside the electric connection box are **very sensitive to electrostatic discharge**. When the unit is open for installation work, appropriate measures must be taken to **protect these components against damage caused by electrostatic discharge (ESD protection)**.

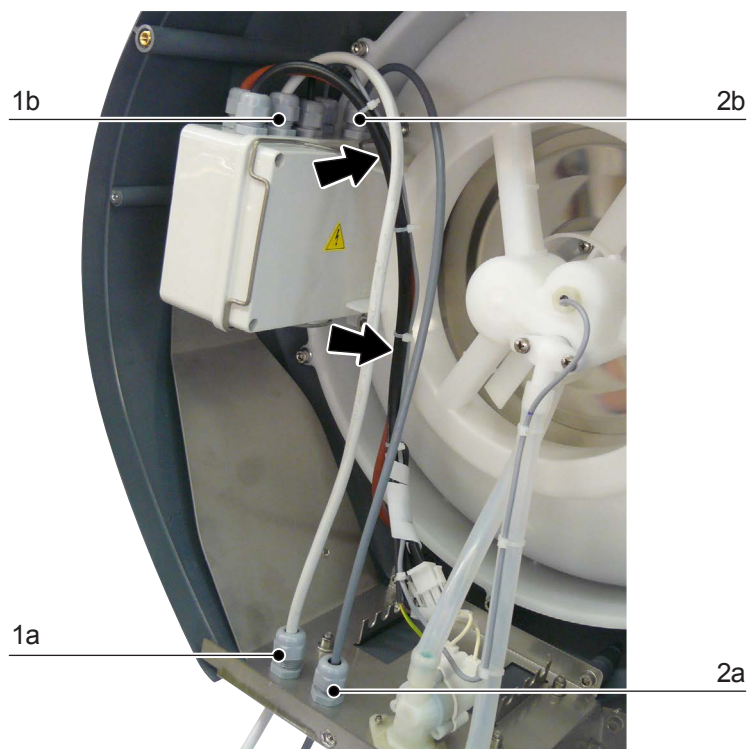
Mounting the electric connection box

1. Re-attach the cover of the connection box and fix it with the four screws.



2. Replace the connection box into the receptacle in the unit and fix it with the fixing clip.
3. Set the air filter assembly (grid-filter-grid) into the bottom of the unit and fix it with the three screws.

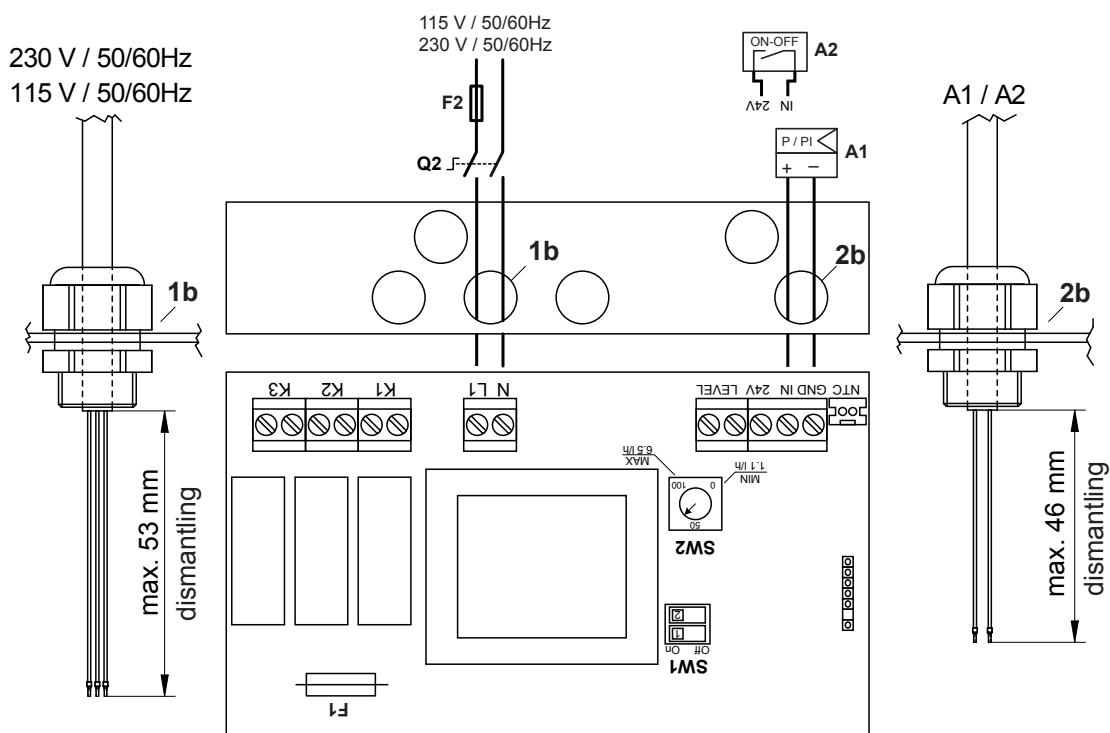
4.4.4 Notes regarding the cabling



Pass the power supply cable through the cable gland “1a” into the unit and through the cable gland “1b” into the electric connection box and connect it to the control board according to the wiring diagram.

Pass the cable of the external controller/humidistat through the cable gland “2a” into the unit and through the cable gland “2b” into the electric connection box and connect it to the control board according to the wiring diagram.

Fix both cables with the cable straps provided to the existing cables at the places marked with arrows. Finally, tighten the four cable glands.



4.4.5 Configuration

For the configuration the electric connection box in the unit must be dismantled and opened. For this purpose please observe the notes in [chapter 4.4.3](#).

4.4.5.1 Setting the flushing cycles

The flushing cycles are set via the DIP switches SW1 on the control board:



SW1	On	Off
1	During operation a flushing cycle is performed every 6 hours.	The 6 hours flushing cycle during operation is deactivated (e.g. for the operation with fully demineralized water).
2	After 72 hours without humidity demand a flushing cycle is performed before the next humidification cycle.	72 hours flushing deactivated.

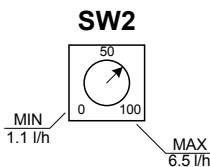


DANGER! Hygiene problems

If DIP switches SW1-1 and SW1-2 are set to “Off” the flushing cycles are deactivated! Thus germs can form in the water reservoir and in the water supply pipe due to stagnant water, which can lead to hygiene problems.

It is strongly recommended to keep the flushing cycles always activated!

4.4.5.2 Setting the humidification capacity limitation



The humidification capacity limitation is set via the rotary switch SW2 on the control board.

Setting range: 0 (1.1 l/h) ... 100 (6.5 l/h)
Factory setting: 100 (6.5 l/h).

5 Operation

5.1 Setting the unit into operation

Proceed as follows when putting the Condair ABS3 into operation:

1. Check the Condair ABS3 and the installations for possible damage.



DANGER!

A damaged unit or an unit with damaged installation may present danger to human life or cause severe damage to material assets.

A damaged unit and/or an unit with damaged or faulty installation must not be operated.

2. Make sure that the electric connection box is closed, correctly set in the receptacle of the unit and secured and that the air filter assembly is correctly mounted and fastened.
3. Open the stop valve of the water supply line and check water system for leakages.



CAUTION!

An unit with leakages must not be operated.

4. If necessary, turn outlet openings of the diffusor into the desired blow-out direction.
5. Verify the set humidity value at the external humidity controller/humidistat, and readjust as required.
6. Turn on the service switch in the mains supply line.

The unit performs a flushing cycle, which takes approx. 1 minute. Then, the unit is ready for operation. As soon as the external humidity controller or the humidistat requires humidity the motor starts and the atomization begins.

5.2 Inspections during operation

During operation the Condair ABS3 and the humidification system have to be inspected weekly. On this occasion check the following:

- the water installation for any leakage.
- the humidifier and the other system components for correct fixing and any damage.
- the electric installation for any damage.

If the inspection reveals any irregularities (e.g. leakage, irregular running) or any damaged components take the Condair ABS3 out of operation as described in [chapter 5.3](#). Then, let the damage or malfunction be resolved by a qualified specialist or a service technician of your Condair supplier.

Note: During operation individual drops are carried along by the air flow and thrown against the hood. This causes an audible noise, which is completely normal.

5.3 Taking the unit out of operation



DANGER! Hygiene problems

If the Condair ABS3 is switched on, the unit is flushed in regular intervals independent of the humidity demand (if flushing cycles are activated, see [chapter 4.4.5.1](#)). This reduces germs formation in the water reservoir and in the water supply pipe caused by standing water.

Therefore let the Condair ABS3 always switched on unless you have to perform work on the unit (e.g. performing maintenance, eliminating faults, etc.).

Proceed as follows to put the Condair ABS3 out of operation (e.g. for maintenance work, elimination of a malfunction):

1. If the Condair ABS3 humidifies right now: Set the humidity reference value on the external humidity controller/humidistat to 0 %rh and wait until the unit has finished the flushing cycle (approx. 1 minute).
2. Turn off the service switch in the mains supply line, then secure the service switch against inadvertent switching on.
3. Close the stop valve of the water supply line.

Note: If the Condair ABS3 is not used for prolonged period of time, clean and disinfect the unit, and cover the unit with a plastic hood.

6 Maintenance

6.1 Important notes on maintenance

Qualification of personnel

All maintenance work must be carried out only by **well qualified and trained personnel authorized by the owner**. It is the owner's responsibility to verify proper qualification of the personnel.

General note

The instructions and details for maintenance work must be followed and upheld.

Only the maintenance work described in this documentation may be carried out.

Only use original Condair spare parts to replace faulty parts.

Safety



DANGER!

Before maintenance is initiated, the Condair ABS3 must be taken out of operation in accordance with instructions in [chapter 5.3](#) and protected against unintentional switching on.



DANGER!

Health risk because of inadequate hygiene!

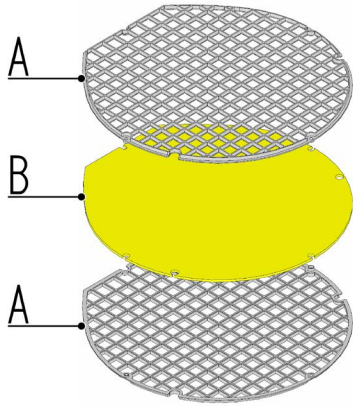
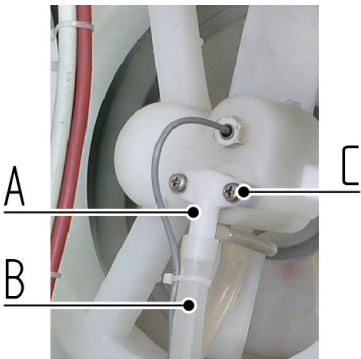
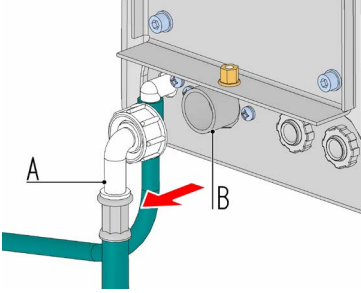
Badly maintained humidifiers can endanger the health. If the unit is insufficiently maintained, ill-making germs may grow in the water reservoir and the water supply pipe of the Condair ABS3 and may affect the air passing through the humidifier during operation.

Prevention: the Condair ABS3 must be cleaned in the prescribed intervals according to the information given in [chapter 6](#). The cleaning works must be carried out correctly and the air filter must be replaced after its prescribed lifetime has elapsed.

6.2 Maintenance intervals

In order to maintain operational safety the Condair ABS3 must be maintained in regular intervals. **The time interval for the maintenance is to be adapted to the operating conditions.** The hygiene status depends mainly on the quality of the humidifier water and the micro-biological and chemical composition of the supply air. Therefore the maintenance intervals must be determined for each system separately. **The first visual check must be carried out after 200 operating hours.** Depending on the encountered hygiene status during this first check the maintenance interval time must be decreased or increased. **However the Condair ABS3 must be maintained at least every three months (maintenance work see [chapter 6.3](#)).**

6.3 Maintenance work

Component	Work to be carried out
Air filter 	1. Undo the three screws and remove the air filter assembly downwards. 2. Clean filter mat on both sides with a vacuum cleaner. 3. Place the cleaned filter mat between the two filter grids, then insert the filter assembly from downside into the unit and fix it with the three screws. Note: If the filter mat is heavily contaminated, replace the filter mat (EU3/C3).
Interior of the unit and discharge hood	Check the interior of the unit and the discharge hood for dirt and clean them if necessary with a damp rag soaked with a accepted disinfectant (see chapter 6.4). Caution: if the interior of the unit is heavily soiled the Condair ABS3 must be disassembled (see exploded view in the spare parts list) and all parts must be cleaned, descaled and disinfected with an accepted disinfectant (see chapter 6.4).
Drain siphon 	1. Undo the three screws and remove the air filter assembly downwards. 2. Remove pipe "B" from the connector. 3. Undo the two screws "C", then remove the connection piece "A" from the siphon. 4. Clean siphon and connection piece. 5. Assemble the unit in reverse order of steps 1... 4.
Sieve in the inlet valve 	1. Remove supply pipe "A". 2. Pull the sieve out of the inlet valve. 3. Clean sieve and water supply pipe "A". 3. Insert the sieve into the inlet valve. 5. Re-connect supply pipe "A" and tighten union nut by hand. Note: If the sieve must be cleaned often, a water filter should be installed in the water supply line (see chapter 4.3.1).

6.4 Cleaning and disinfection

Proceed as follows to clean and disinfect the parts coming in contact with water:

- Use lukewarm soapy water to clean the interior and parts in contact with air and water (water reservoir, atomizer disk, atomiser collar, aerosol discharge hood etc.). Then thoroughly rinse all components with fresh cold tap water.
Note: If the components are heavily encrusted with lime, soak them in citric acid until the lime layer is dissolved. Finally, clean the components as described above.
- Use an accepted disinfectant (see notes on cleaning agents below) to disinfect all parts cleaned before. Let the disinfectant work for minimum 30 minutes. Then, rinse all parts with fresh cold tap water. Make sure the parts are properly rinsed and all disinfectant has been removed, before reassembling the unit.

When cleaning make sure:

- not to damage the outer edges of the atomizer disk. A defective disk reduces the efficiency of the humidifier and can cause damage to the bearing (unbalance).
- not to bend the lamellas of the atomizer collar. Bent lamellas adversely affect the atomization process.
- the inlet of the suction piece is open so that the water may pass through.

Use a cloth or a sponge moistened with soapy water to clean the **motor housing**. Then rub the components with a wet cloth (clean water) several times.

If the components are heavily encrusted with lime, rub them with a cloth soaked in a citric acid solution. Allow the acid to act for some time and then thoroughly clean the motor housing with water.



CAUTION!

Prevent the cleaning agent from getting into the electric motor. Never clean the motor housing under the tap and never dip it in liquids of any kind.

Notes on cleaning and disinfection agents:

- Citric acid is available at pharmacies.



WARNING!

Citric acid can cause skin and serious eye irritation and can attack the mucous membranes. Therefore wear protective gloves and eye protection and work in a well-ventilated room or outdoors. Observe manufacturer's safety instructions.

– **Accepted disinfectants:**

- 3 % Hydrogen Peroxide solution (available at pharmacies)
- 0,1 % Sanosil S003 solution (available from Condair, order no. 2590544)
Active ingredients: 1.5% hydrogen peroxide, 0.003g/100g silver

After disinfection the components must be thoroughly rinsed with fresh cold tap water.

- **Do not use solvents or other aggressive liquids for cleaning.**
- **Do not use** scouring equipment (wire brush, scouring cloth, etc.) for cleaning because they leave scratches that encourage the growth of microorganisms.

7 Troubleshooting

7.1 Important notes on troubleshooting

Qualification of personnel

Have faults eliminated by adequately qualified and trained personnel only. Malfunctions caused by the electrical installation must be repaired by authorized personnel (e.g. electrician) only.

Repair work and the replacement of defective parts may only be carried out by your Condair representative's service technician.

Safety

In order to eliminate faults, the Condair ABS3 must be **set out of operation as described in [chapter 5.3](#), disconnect the unit from the mains and secure the unit against inadvertent power-up.**

7.2 Malfunction list

Important! Most operational malfunctions are not caused by faulty equipment but rather by improper installation. Therefore, a complete fault diagnosis always involves a thorough examination of the entire system.

Malfunction	Cause	Remedy
The atomiser does not run, although the service switch in the mains supply line is switched on.	The current humidity in the room is higher than the set reference humidity value.	None, wait.
	Fuse F2 in the mains supply line defective.	Check/replace fuse F2.
The atomiser keeps running and cannot be switched off by reducing the reference humidity value.	Air humidity very low (<45 %rh)	None, wait.
	External humidity controller/humidistat defective.	Check/replace external humidity controller/humidistat
The set reference humidity value is not reached. The atomiser runs continuously.	Air filters heavily contaminated.	Clean air filter.
	Room too large.	Contact Condair dealer.
	Suction tube of atomiser unit blocked.	Check suction cone. Clean if necessary.
The atomiser runs noisily.	Atomiser assembly not correctly installed.	Check atomiser assembly. Mount parts correctly.
	Suction cone has become undone.	Tighten the suction cone.

8 Taking out of service/Disposal

8.1 Taking out of service

If the Condair ABS3 must be replaced or if the humidification system is not needed any more, proceed as follows:

1. Take the unit out of operation as described in [chapter 5.3](#).
2. Have the unit (and all other system components, if necessary) unmounted by a qualified service technician.

8.2 Disposal/Recycling



In conformance with the European Directive 2002/96 EC on Waste Electrical and Electronic Equipment (WEEE) this device may not be disposed of in domestic waste.

This also applies to countries outside the EU, per their specific requirements.

Please dispose of this product in accordance with local regulations at the collecting point specified for electrical and electronic equipment.

If you have any questions, please contact the responsible authority or the distributor from which you purchased this device.

Should this unit be passed on to other parties (for private or professional use), the content of this regulation must also be related.

Thank you for your contribution to environmental protection.

9 Product specifications

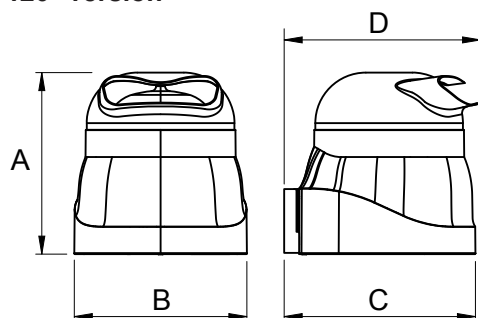
9.1 Technical data

Humidification capacity	1.1 ... 6.5 l/h
Unit voltage	230V / 50/60Hz or 115V / 50/60Hz
Power consumption	0.23 kW (0.3 kW with optional anti-freeze kit)
Air circulation	280 m³/h (77.8 l/s)
Content water reservoir	0.055 l
Unit weight	17.6 kg
Connector water supply	R 3/4" outside thread
Connector water drain	ø 10 mm
Admissible pressure water supply	1...6 bar (0.1...0.6 MPa)
Admissible temperature water supply	5...20 °C
Water quality	Tap water or fully demineralized water with max. silicate content of 12 mg/l and max. 150 CFU/ml (no pathogens)
Admissible operation temperature/humidity	+2 ... +35 °C / 0 ... <100 %rh **
Admissible operation temperature/humidity (with optional anti-freeze kit)	-2 ... +35 °C / 0 ... <100 %rh **
Admissible storage temperature/humidity	-10 ... +60 °C / 0 ... 80 %rh **
Sound pressure level	71 dBA
Type of protection	IPX4
Conformity	CE mark

** non-condensing

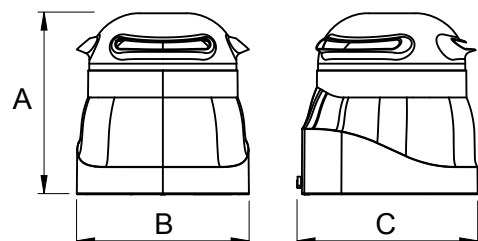
9.2 Dimensions

120° version



	A	B	C	D
Dimensions in mm	565	ABS3	530	610

360° version



	A	B	C
Dimensions in mm	565	ABS3	530

9.3 EC Declaration of conformity



EC

Konformitätserklärung

Declaration of conformity

Déclaration de conformité

Wir,
Condair Group AG
CH-8808 Pfäffikon SZ
erklären in alleiniger Verantwortung,
dass das Produkt

We,
Condair Group AG
CH-8808 Pfäffikon SZ
declare under our sole responsibility, that
the product

Nous,
Condair Group AG
CH-8808 Pfäffikon SZ
déclarons sous notre seule
responsabilité, que le produit

Condair ABS3

auf das sich diese Erklärung bezieht,
mit den folgenden Normen oder
normativen Dokumenten
übereinstimmt

to which this declaration relates is in
conformity with the following standards or
other normative standards

auquel se réfère cette déclaration est
conforme aux normes ou autres
documents normatifs

EN 61000-6-2
EN 61000-6-3
EN 60335-1
EN 60335-2-98

und den Bestimmungen der folgenden
Richtlinien entspricht

and is corresponding to the following
provisions of directives

et est conforme aux dispositions des
directives suivantes

2014 / 35 / EU
2014 / 30 / EU

2546297 DE/EN/FR 1905

Pfäffikon, May 01, 2019

Condair Group AG

Robert Merki
Head of Engineering

Condair Group AG
Gwattstrasse 17
8808 Pfäffikon, Switzerland
Tel. +41 55 416 61 11, Fax +41 55 588 00 07
info@condair.com, www.condair-group.com

10 Hygiene

10.1 Important notes on hygiene

Observe the local health and safety executive's technical guidance on the control of Legionella in water systems.

The user is responsible for ensure that the water system complies with local regulations, bylaws, and guidelines (such as the HSE ACoP L8, ASHRAE 188, VDI 6022, ISO 22000, HACCP, or equivalent). If inadequately maintained, water systems, of which any humidifier is a part, can support the growth of microorganisms, including the bacterium responsible for Legionnaires' disease.

Any risks or hazards relating to the system, including during installation and maintenance, should be identified by a competent health and safety representative who is responsible for introducing effective control measures.

10.2 Hygiene risk management

If cold water humidification systems are not maintained according to this manual, they present the risk of spreading pathogenic microorganisms into the air. The Humidifier distribute tiny water droplets (mist) that are blown into the space before being absorbed into the air. If the mist was contaminated before leaving the unit and then evaporates, these contaminants are deposited onto surfaces in the space, or can be inhaled by occupants in the room.

Pathogens include, but not limited to, Legionella, E. coli, and viruses, may originate from contaminated water or the equipment.

Therefore regular cleaning and disinfecting is required to reduce health risks. Refer to [chapter 6](#) in this manual. Do **not** miss or ignore the warnings in this manual.

Follow all safety precautions and local regulations.

Supply Water

Pathogens can originate from the water supply, such as a tank or water line. It is important that standing water in a tank or in the water line is flushed frequently to prevent the buildup of contaminants, and the water is filtered and treated.

Pathogens may also enter the humidification system from the air. A fan blows air over the water reservoir and is mixed with aerosols when blown into the room.

Inside the Humidifier

A small risk of contamination may occur during manufacture, testing, delivery, and commissioning. Any water that was present during these processes is considered stagnant. Ensure that all applicable components (i.e. wet surfaces, such as mist pipes, reservoirs, and hoses) of the humidification system has been cleaned and disinfected before installation. Refer to the maintenance routines as described in [chapter 6](#).

Note: Stagnant water may also be formed after shutting down the humidifier (and after inactivity). Ensure that the humidifier is air dried for inactivity, and cleaned before restarting.

10.2.1 Guidelines to keep a clean system and prevent legionella growth

- Perform a risk assessment of the water system using a competent person, and implement an appropriate monitoring and control program.
- Connect a RO-U system to a clean, potable main water supply.
- Enter a service contract that suits the needs of the company.
- Stop the system if polluted drinking water is found in the area.
- Avoid water temperatures between 20-40 °C (50-140 °F) that favor the growth of Legionella.
- If the system was stopped for more than 48 hours, complete a total system cleaning and disinfection.
- Disinfect at least once per month- and/or after every maintenance or repair.
- Analyze the water and test for harmful bacteria at least once per year.
- Conduct follow-up measurements until the system is clean if bacteria has been detected in the system.

The Condair service team can help with expert technicians who can provide:

- Bacteriological troubleshooting on-site. ¹⁾
- Cleaning and disinfecting.
- Preventative maintenance.
- Repair and fault finding.
- Training and guidance.

¹⁾ Note: Condair uses a quick method for measuring bacterial activity in the water with the use of BactiQuant. Once the water sample has been taken, the bacteriological quality of the water is read within 30 minutes, and the Condair service team will disinfect the system if necessary.

Condair follows the guidelines in VDI 6022 for CFU counts in humidifiers. The CFU count in the humidification water must not exceed 150 CFU/ml, corresponding to a maximum BQ value of 40.

Please contact your local Condair representative for further information about our services.

10.2.2 Risk Monitoring and Assessment

Water hygiene assessments must be performed at the site to determine the risk and severity of hygiene hazards that affect the health and safety of the public. Performing a risk assessment with regular monitoring will allow procedures to be adjusted.

Ensure that the person conducting the assessment is qualified.

A typical assessment inspects the following:

- Supply water quality.
- Environment around the humidifier.
- Maintenance procedures.
- Water pre-treatment options (such as using UV light, using reverse osmosis or deionized water, etc.).

Proper maintenance procedures along with recommended site controls will help ensure compliance to local regulations and protect the public.

It is recommended to monitor the humidification system monthly. Ensure that the results of every assessment is recorded.

Failure to make adequate provision against the outbreak of disease, such as Legionnaires' disease, may cause fatalities, illness, and liabilities.

Notes

Notes

CONSULTING, SALES AND SERVICE:



CH94/0002.00

Condair Group AG
Gwattstrasse 17, 8808 Pfäffikon SZ, Switzerland
Phone +41 55 416 61 11, Fax +41 55 588 00 07
info@condair.com, www.condairgroup.com

