

**READ AND SAVE THESE INSTRUCTIONS**

# OPERATION MANUAL

Adiabatic air humidification/air cooling system  
Condair **ME II Control**

# Thank you for choosing Condair

Installation date (MM/DD/YYYY):

Commissioning date (MM/DD/YYYY):

Location ref.:

Model:

Serial number:

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# 1 Introduction

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## 1.1 General

We thank you for having purchased the **Condair ME Control Evaporative Humidifier and Cooler** (Condair ME Control for short).

To ensure a safe, proper, and economical operation of the Condair ME Control, please observe and comply with all information and safety instructions contained in the present documentation as well as in the separate documentations of the components installed in the humidification system. Improper use of the Condair ME Control may result in danger to the user or third parties and/or impairment of material assets.

If you have questions after reading this documentation, please contact your Condair representative. They will be glad to assist you.

## 1.2 Notes on the operation manual

### Limitation

**The subject of this operation manual is the Condair ME Control Evaporative Humidifier and Cooler.** The various options and accessories are only described insofar as is necessary for proper operation of the equipment. Further information on options and accessories can be obtained in the respective instructions.

This operation manual is restricted to the **commissioning**, the **operation**, the **maintenance** and **troubleshooting** of the Condair ME Control and is meant for **well trained personnel being sufficiently qualified for their respective work**.

Please note, some illustrations in this manual may show options and accessories which may not be supplied as standard or available in your country. Please check availability and specification details with your Condair representative.

The operation manual is supplemented by various separate items of documentation (such as the installation manual), which are included in the delivery as well. Where necessary, appropriate cross-references are made to these publications in the operation manual.

## Symbols used in this manual



The catchword "CAUTION" used in conjunction with the general caution symbol designates notes in this operation manual that, if neglected, may cause **damage and/or malfunction of the unit or other material assets**.



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



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

### Safekeeping

Please safeguard this operation manual in a safe place, where it can be immediately accessed. If the equipment changes hands, the operation manual must be passed on to the new operator.

If the operation manual gets mislaid, please contact your Condair representative.

### Language versions

This operation manual is available in various languages. Please contact your Condair representative for information.

## 2 For your safety

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### General

Every person working with the Condair ME Control must have read and understood the operation manual of the Condair ME Control before carrying out any work.

Knowing and understanding the contents of the operation manual 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 components of the Condair ME Control must be observed and kept in readable state.

### Qualification of personnel

All work described in this operation manual **may only be carried out by specialists who are well trained and adequately qualified and are authorized by the customer.**

For safety and warranty reasons any action beyond the scope of this manual must only be carried out by personnel with appropriate industry recognised qualifications or training.

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

The Condair ME Control 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 system. Children must be supervised to make sure that they do not play with the Condair ME Control.

### Intended use

The Condair ME Control is intended exclusively for **air humidification and air cooling in AHU's or air ducts** within the specified operating conditions. Any other type of application, without the written consent of the manufacturer, is considered as not conforming with the intended purpose and may lead to the Condair ME Control becoming dangerous.

Operation of the equipment in the intended manner requires **that all the information contained in this operation manual are observed (in particular the safety instructions).**

## Danger that may arise from the Condair ME Control



**DANGER!**  
Risk of electric shock!

The Condair ME Control unit (and the optional submerged UV system) contain live mains voltage. Live parts may be exposed when the control unit (or the terminal box of the optional submerged UV system) is open. Touching live parts may cause severe injury or danger to life.

**Prevention:** Before carrying out any work on the Condair ME Control switch off the control unit, disconnect it from the mains via the electrical isolator and secure the electrical isolator in "Off" position against inadvertent power-up.



**DANGER!**  
Health risk because of inadequate hygiene!

Inadequately operated and/or poorly maintained evaporative humidification/cooling systems may endanger health. When inadequately operated and/or poorly maintained micro-organisms (including the bacterium which causes Legionnaire's disease) may grow in the evaporative module, the water tank and the water system of the Condair ME Control and may affect the air in the AHU/air duct.

Prevention: the Condair ME Control must strictly be operated and maintained in accordance with this manual.



**WARNING!**

Some types of evaporative material are manufactured from glass fibre. Though this material is not classified as hazardous, it is recommended that Personal Protection Equipment such as gloves, protective clothing and eye protection are used during handling to protect the user from fibres or dust. If dust is generated during handling it is recommended that respiratory protection is worn.

### Correct lifting and handling

Lifting or handling of components always carries an element of risk, and therefore must only be carried out by trained and qualified personnel. Ensure that any lifting operations have been fully planned and risk assessed. All equipment should be checked by a skilled and competent health & safety representative.

It is the customer's responsibility to ensure that operators are trained in handling heavy goods and to enforce the relevant lifting regulations.

### **Preventing unsafe operation**

If it is suspected that **safe and hygienic operation is no longer possible**, then the Condair ME Control should immediately **be shut down and secured against accidental power-up according to [Section 4.6](#)**. This can be the case under the following circumstances:

- if the Condair ME Control is damaged
- if the Condair ME Control is contaminated
- if the electrical installations are damaged
- if the Condair ME Control is no longer operating correctly
- if connections and/or piping are leaking

All persons working with the Condair ME Control must report any alterations to the system that may affect safety to the owner without delay.

### **Prohibited modifications to the unit**

**No modifications must be undertaken** on the Condair ME Control 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 representative.

## 3 Product Overview

---

### 3.1 Model overview

As **standard** the **Condair ME Control** consist of:

- Evaporative module (75%, 85 % or 95 % efficiency depending on the cassette type)
- Hydraulic module (mounted internal or external to the duct)
- Control unit with integrated controller with touch panel

According to your order the Condair ME Control can be equipped with the following **options**:

- Droplet separator
- Evaporative module blanking
- Hydraulic module cover
- Remote operation and fault indication
- BTL Certified BACnet connectivity
- LonWorks connectivity
- Freeze protection stat
- Leak monitoring
- Conductivity monitoring
- Submerged UV or In-Line UV
- Pump fault detection
- PureFlo system
- Dosing pump Condair WET
- Dosing pump disinfection
- Install kit
- RJ45 port lock

### 3.2 Product designation / Which model do you have

The product designation and the most important unit data (e.g. serial number, evaporative module product key, etc.) are found on the rating plates toward the end of the evaporative module, on the hydraulic module fixing tray and on the right side of the control unit.

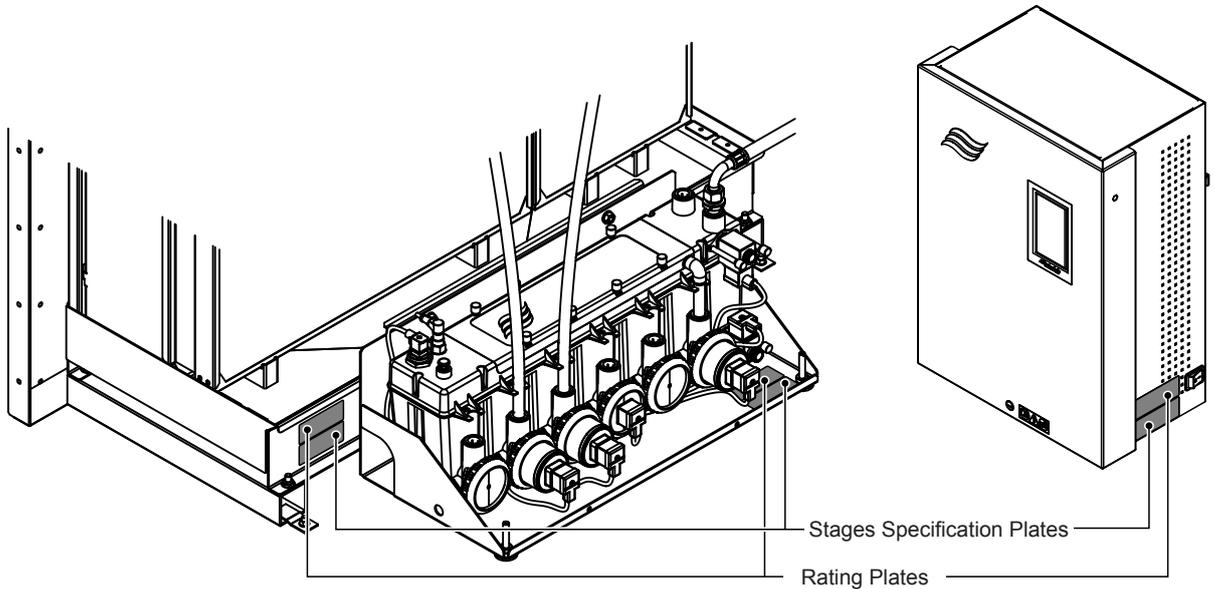


Fig. 1: Position of rating plate

#### Evaporative module product key

Product identification \_\_\_\_\_

**ME** (media evaporator)

Tank spigot position: \_\_\_\_\_

**C**= Center  
**L**= Left (systems ≤3000 mm wide only)  
**R**= Right (systems ≤3000 mm wide only)

Tank spigot diameter: \_\_\_\_\_

**S** = Small = ø50 mm  
**L** = Large = ø54 mm (ø2.125")

**Width** evaporative module in mm \_\_\_\_\_

Tank type: \_\_\_\_\_

**S** = Single spigot tank  
**D** = Double spigot tank (systems >3000 mm wide only)

**Height** evaporative module in mm \_\_\_\_\_

Material type and efficiency evaporative cassettes: \_\_\_\_\_

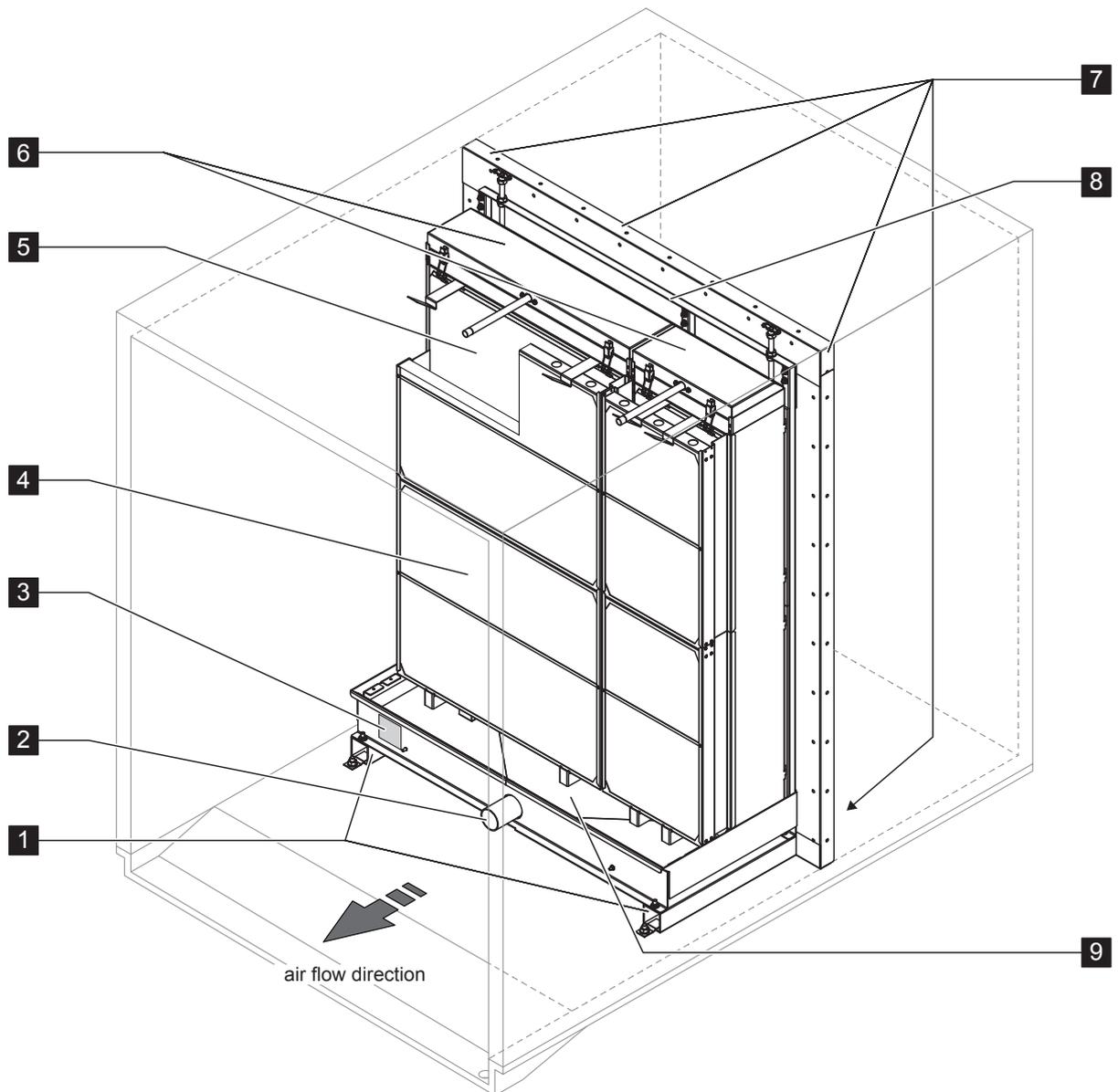
**F75**= F-Type Glass fibre 75 %  
**F85**= F-Type Glass fibre 85 %  
**F95**= F-Type Glass fibre 95 %  
**P85**= Polyester 85 %  
**P95**= Polyester 95 %  
**C85**= C-Type Glass fibre 85 %  
**C95**= C-Type Glass fibre 95 %

Indicates a country specific variation: \_\_\_\_\_

Example:  
**ME-CL0900S-1125-F95X**

### 3.3 Construction of the system components

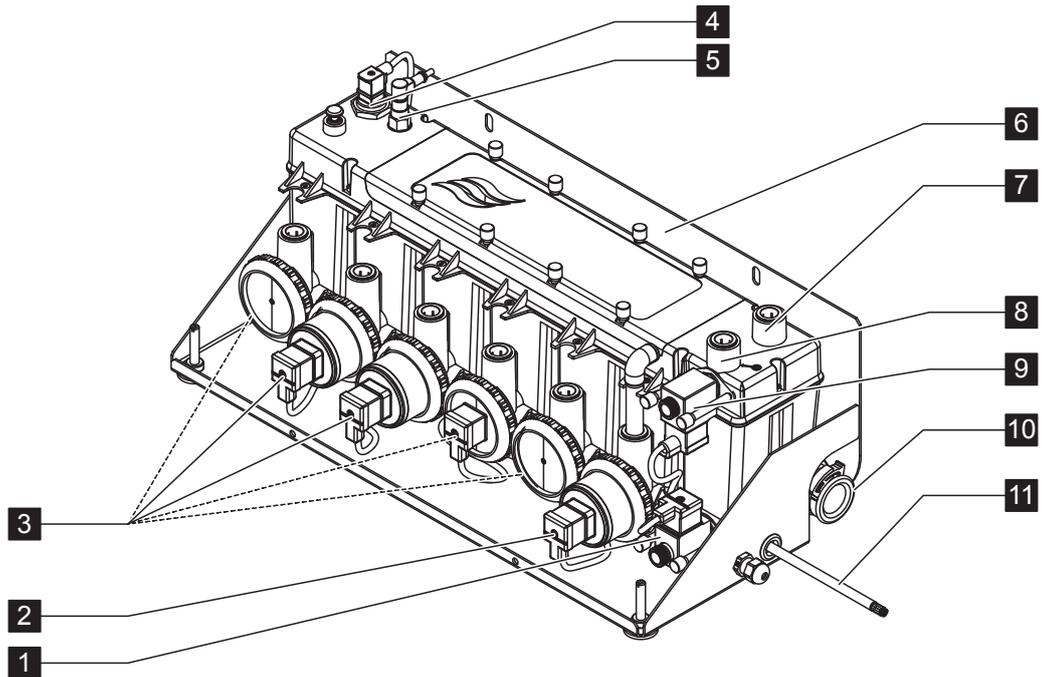
#### 3.3.1 Construction of the evaporative module



- |   |   |   |   |
|---|---|---|---|
| 1 | Upstands  | 5 | Evaporative cassettes (F75, F85, F95, P85, P95, C85 or C95) |
| 2 | Tank connector $\varnothing 50$ mm, or $\varnothing 54$ mm (2.125") as applicable                 | 6 | Distribution heads  |
| 3 | Rating plate  | 7 | Blanking plates (option)                                    |
| 4 | Droplet separator, mandatory for high face velocities (allows velocities up to 4.5 m/s (886 fpm)) | 8 | Mounting frame for evaporative cassettes                    |
|   |   | 9 | Water tank  |

Fig. 2: Construction of the evaporative module

### 3.3.2 Construction of the hydraulic module



- |  |  |
|--|--|
| <ul style="list-style-type: none"> <li>1 Drain valve (normally open)</li> <li>2 Drain pump</li> <li>3 Stage pumps with push-fit connector <math>\varnothing 15</math> mm or <math>\varnothing 16</math> mm (0.625") as applicable.<br/>Note: The number and numbering of the stage pumps depend on the number of stages and the number of hydraulic modules.</li> <li>4 Level sensor</li> <li>5 Conductivity sensor (option)</li> <li>6 Fixing tray</li> <li>7 Push-fit connector (<math>\varnothing 15</math> mm or <math>\varnothing 16</math> mm (0.625") as applicable) for pressure equalisation (only used when mounted outside of AHU)</li> </ul> | <ul style="list-style-type: none"> <li>8 Water supply push-fit connector <math>\varnothing 15</math> mm (module is supplied with a connecting hose that inserts here)</li> <li>9 Inlet valve (normally closed)</li> <li>10 Drain connector <math>\varnothing 28</math> mm (1.125") or <math>\varnothing 32</math> mm (1.25") as applicable<br/>Note: the drain connector can be rotated to drain to the left, or the right, or down.</li> <li>11 Interconnecting cable hydraulic module</li> </ul> |
|--|--|

*Fig. 3: Construction of the hydraulic module (figure shows layout for 2-stage control)*

### 3.4 System overviews / Functional description

#### 3.4.1 Typical system Condair ME Control with center drain tank and one hydraulic module, internal install (evaporative modules up to 4.2 m/165" wide)

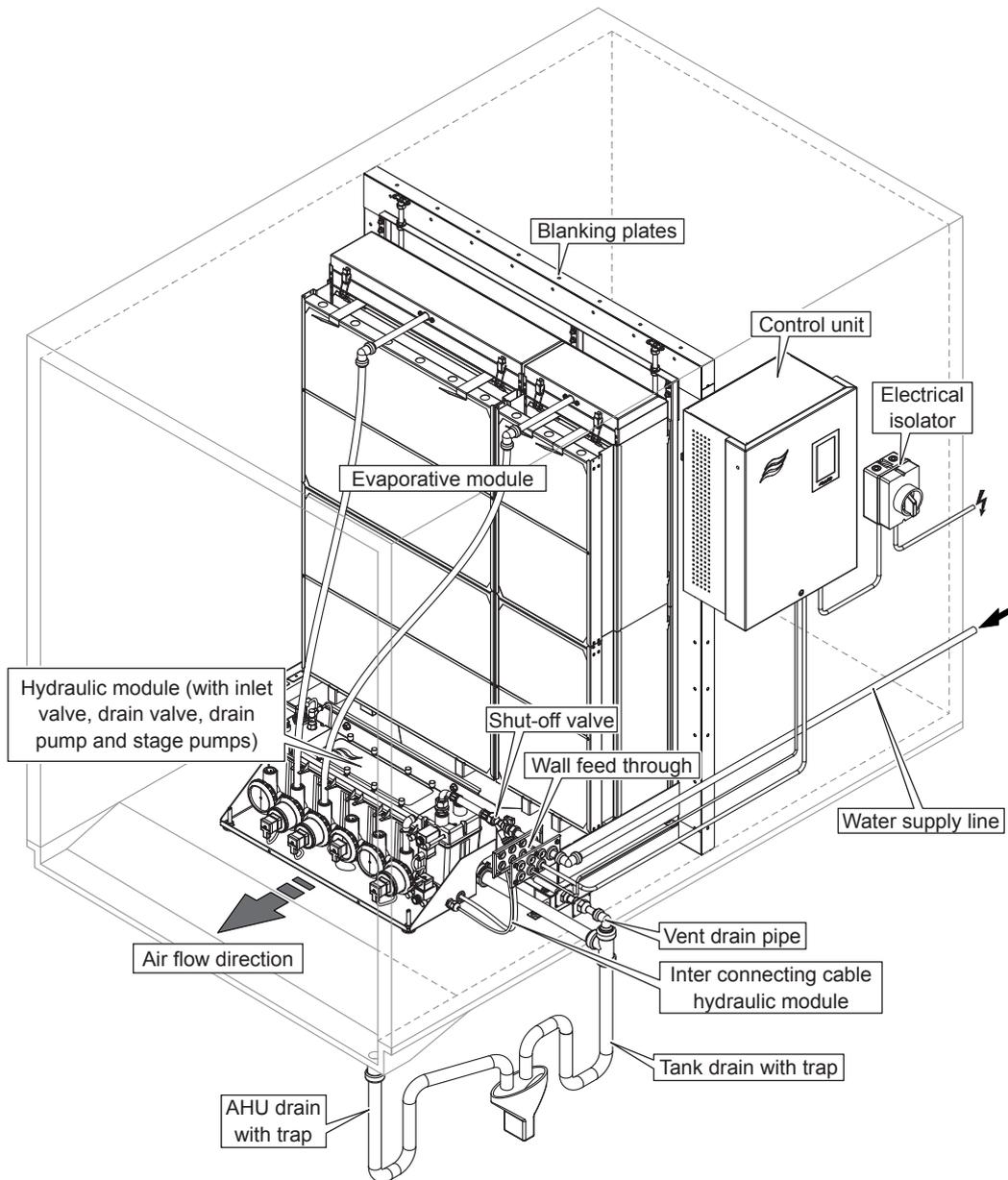
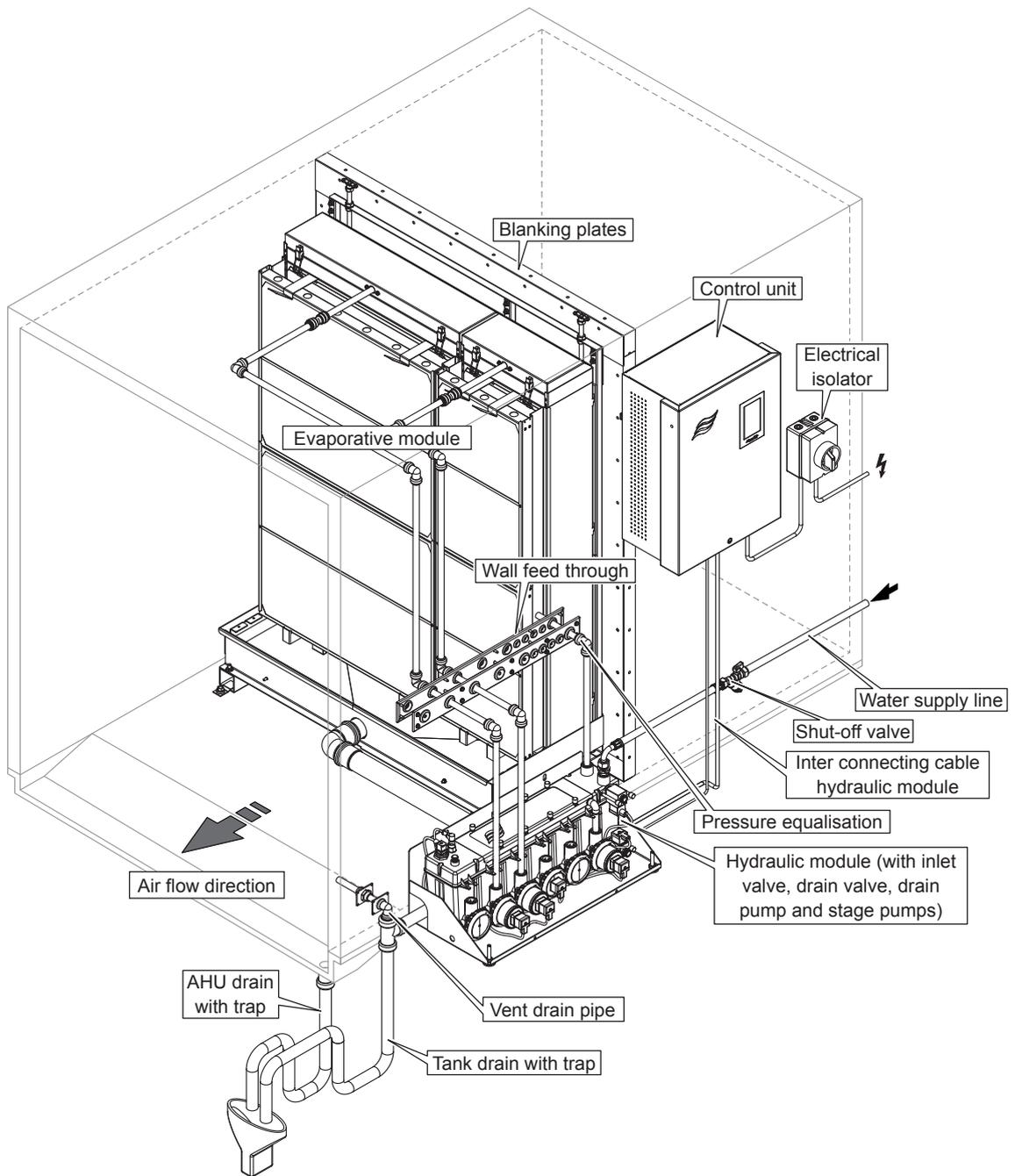


Fig. 4: Typical system Condair ME Control with center drain tank and one hydraulic module, internal install (evaporative modules up to 4.2 m/165" wide)

**3.4.2 Typical system Condair ME Control with center drain tank and one hydraulic module, external install (evaporative modules up to 4.2 m/165" wide)**



*Fig. 5: Typical system Condair ME Control with center drain tank and one hydraulic module, external install (evaporative modules up to 4.2 m/165" wide)*

### 3.4.3 Typical system Condair ME Control with side drain tank and one hydraulic module, external install (evaporative modules up to 3 m/118" wide)

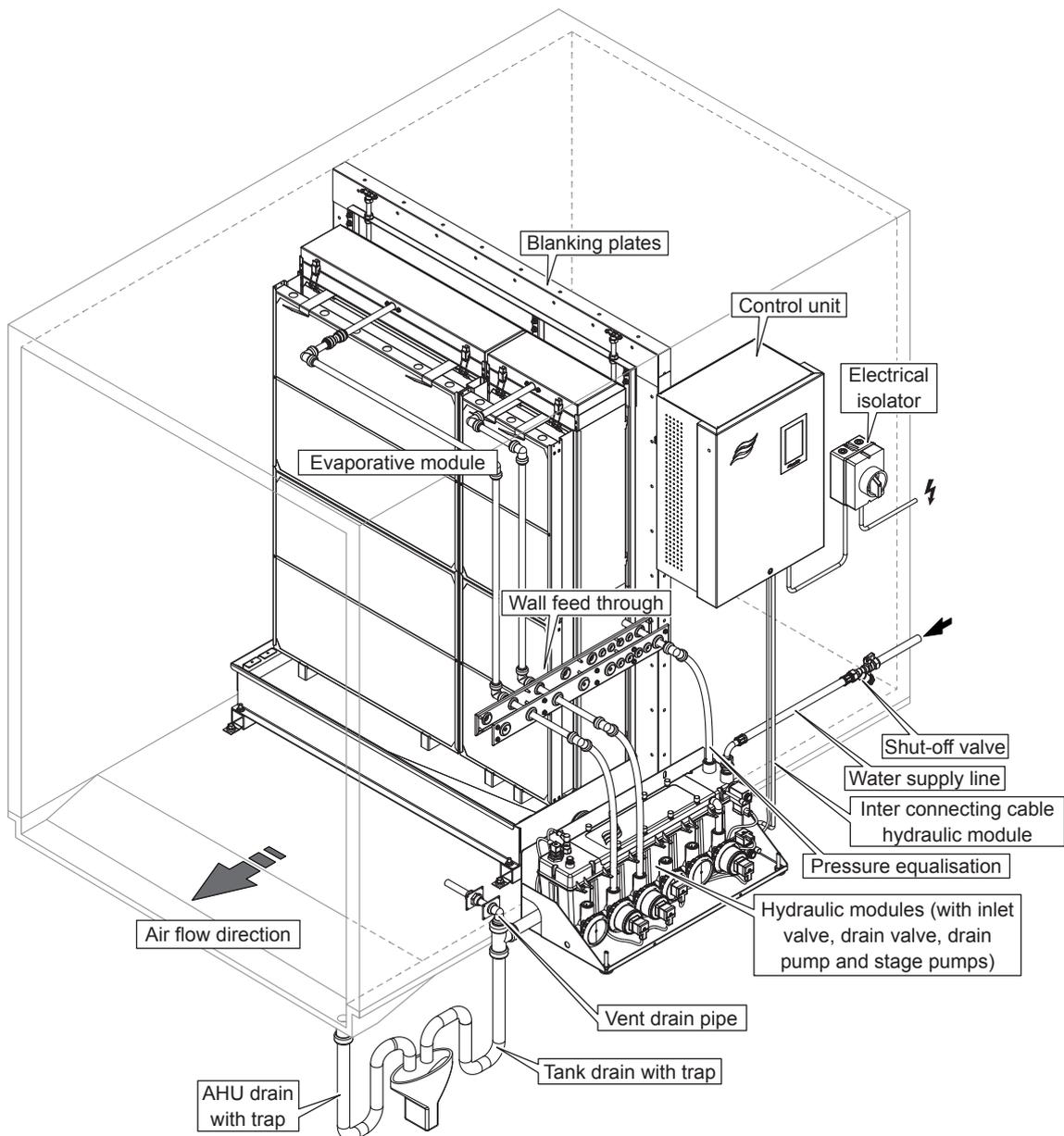
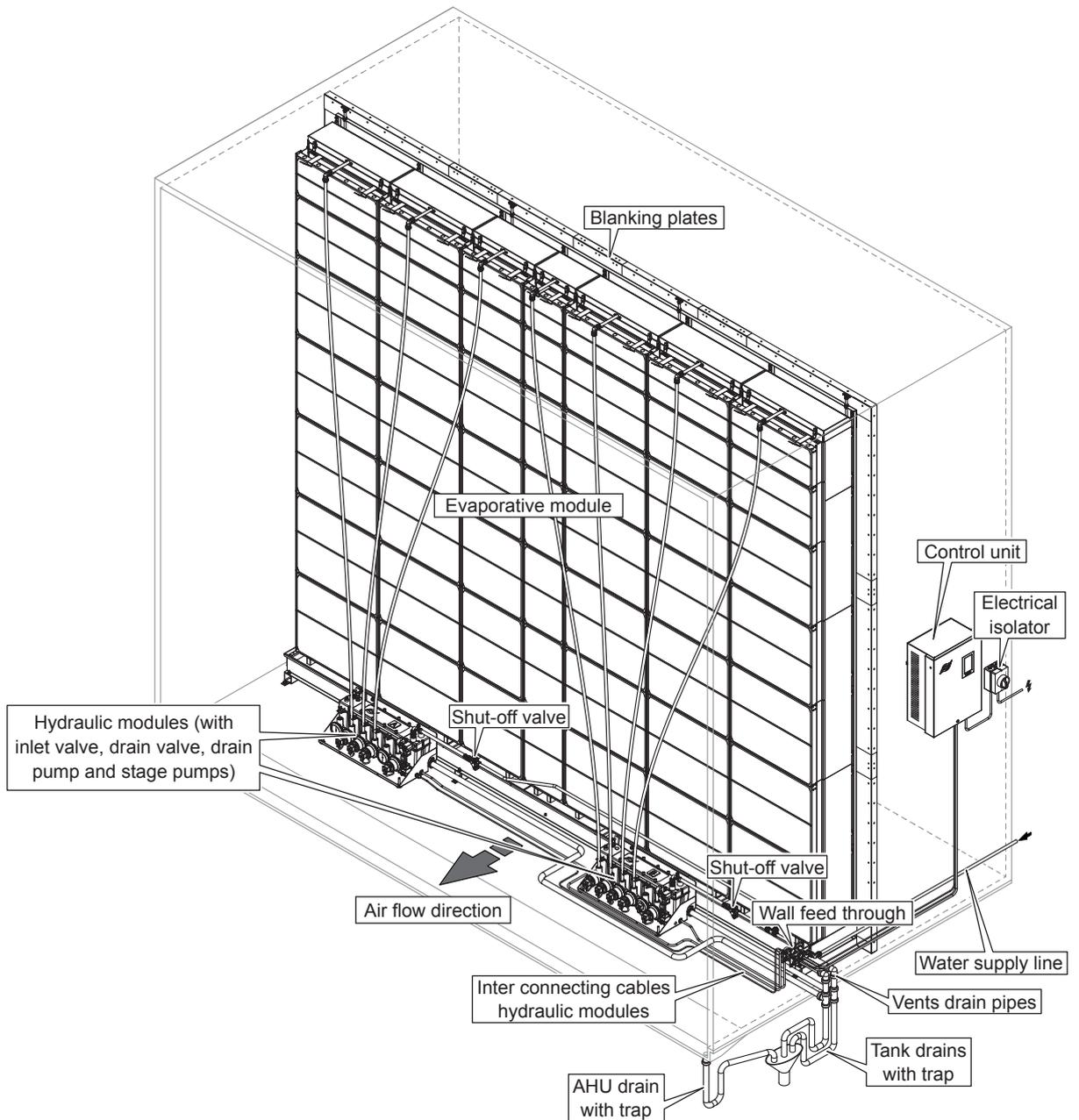


Fig. 6: Typical system Condair ME Control with side drain tank and one hydraulic module, external install (evaporative modules up to 3 m/118" wide)

**3.4.4 Typical system Condair ME Control with two hydraulic modules, internal install (evaporative modules 3.15 m ... 4.2 m/124" ... 165" wide)**



*Fig. 7: Typical system Condair ME Control with two hydraulic modules, internal install (evaporative modules 3.15 m ... 4.2 m/124" ... 165" wide)*

### 3.4.5 Typical system Condair ME Control with two hydraulic modules, external install (evaporative modules 3.15 m ... 4.2 m/124" ... 165" wide)

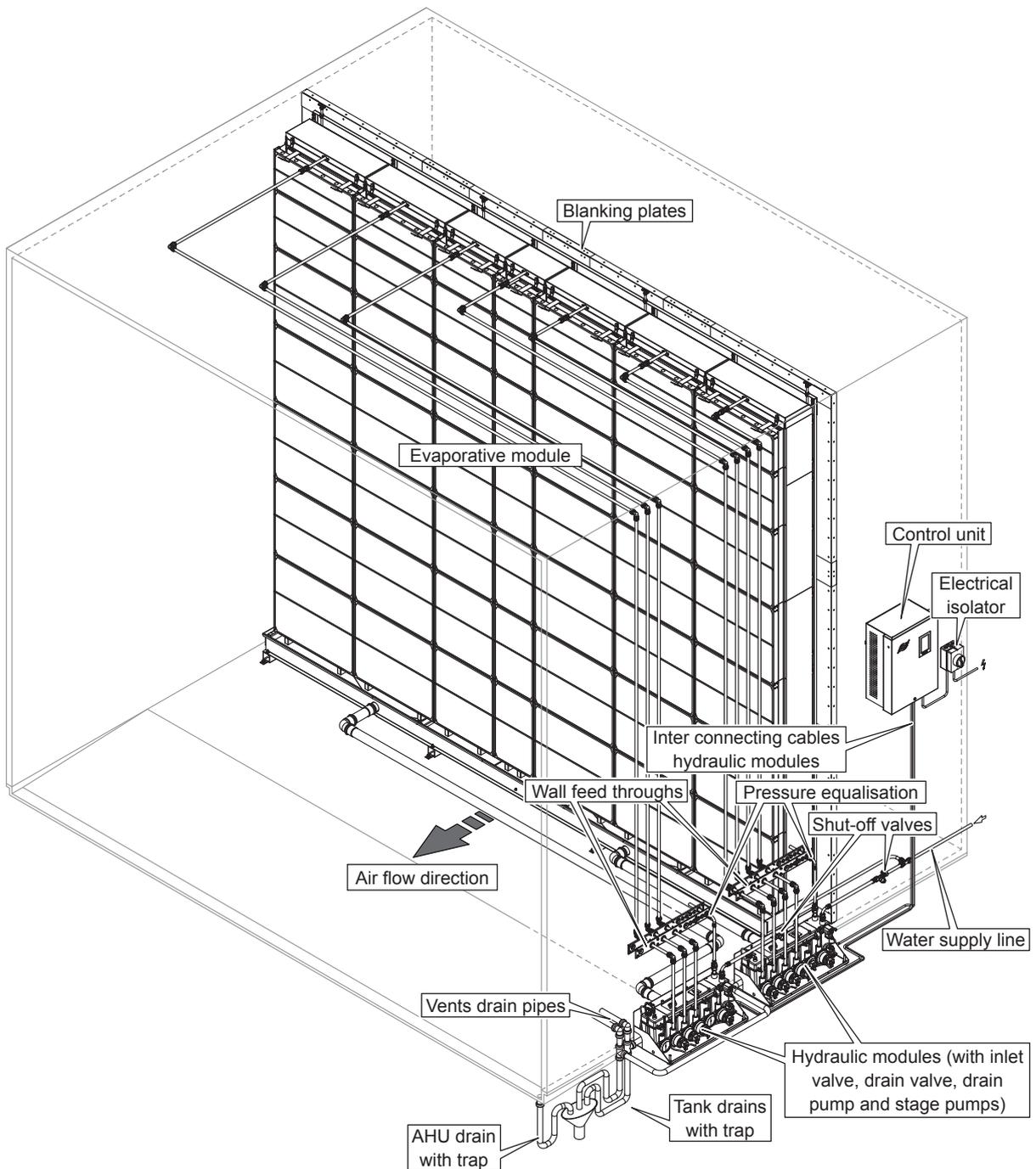


Fig. 8: Typical system Condair ME Control with two hydraulic modules, external install (evaporative modules 3.15 m ... 4.2 m/124" ... 165" wide)

### 3.4.6 Schematic flow diagrams Condair ME Control with one hydraulic module

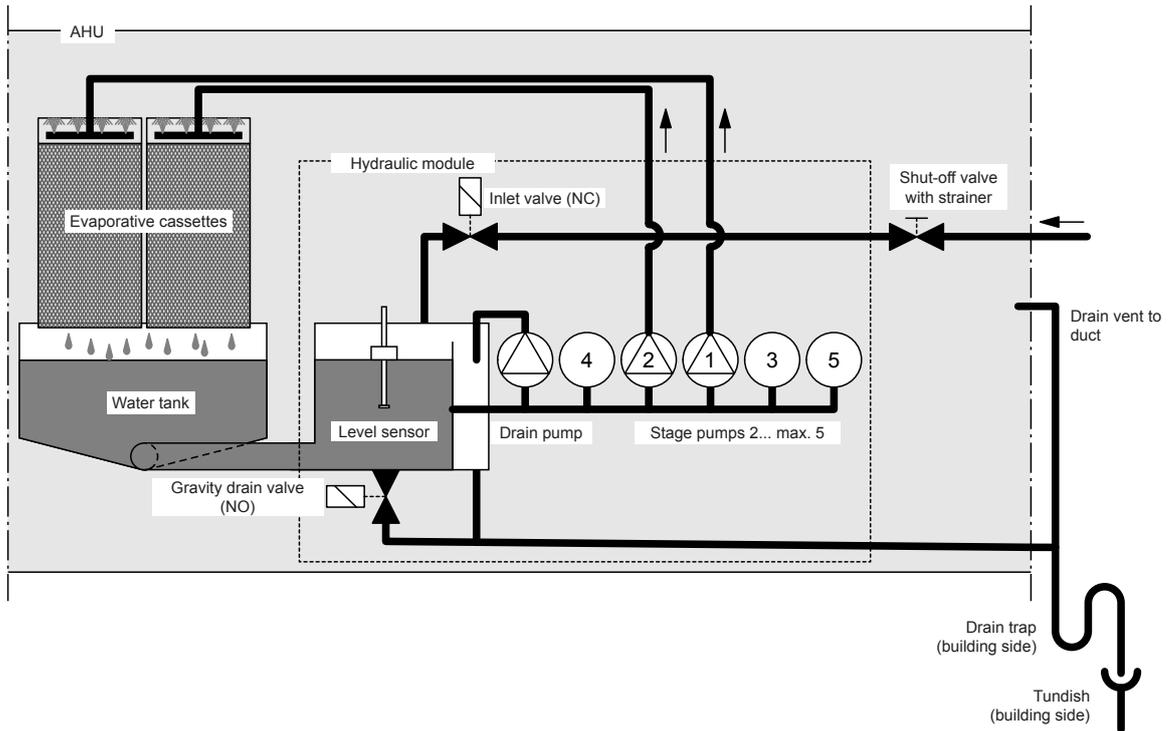


Fig. 9: Schematic flow diagram Condair ME Control with one hydraulic module (internal install)

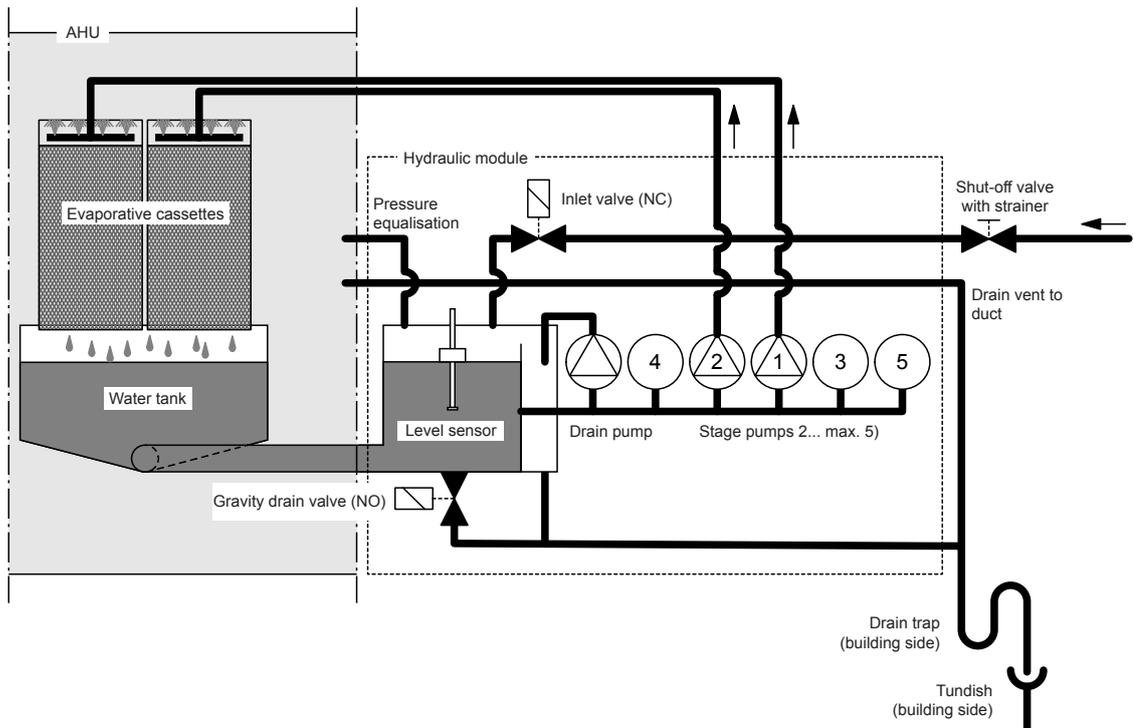


Fig. 10: Schematic flow diagram Condair ME Control with one hydraulic module (external install)

### 3.4.7 Schematic flow diagrams Condair ME Control with two hydraulic modules

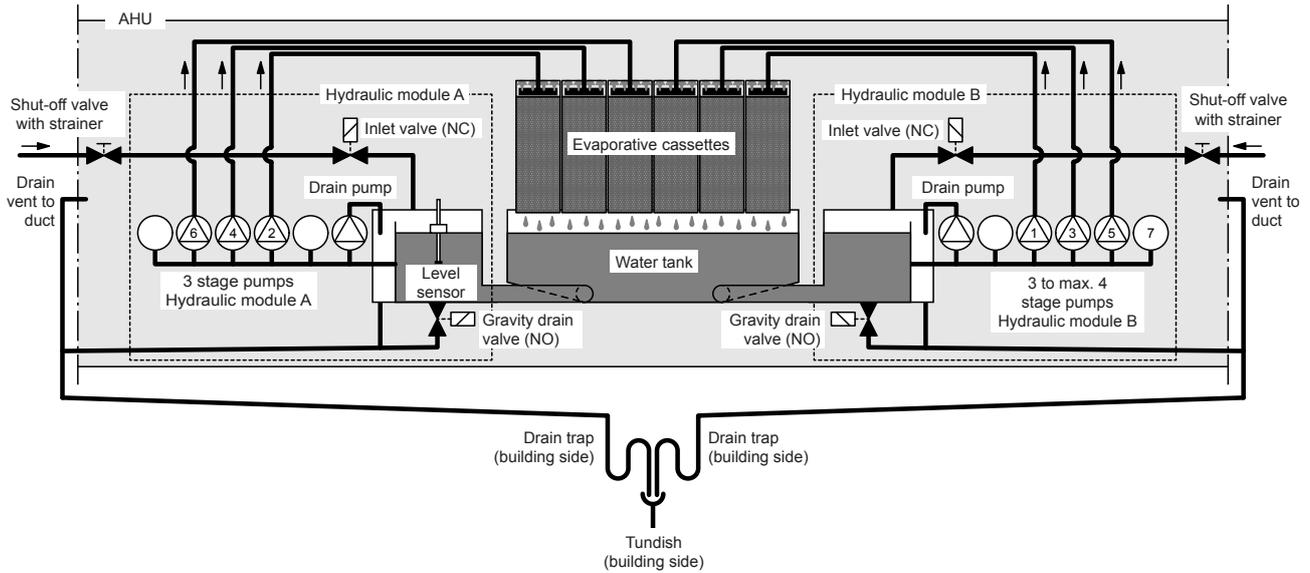


Fig. 11: Schematic flow diagram Condair ME Control with two hydraulic modules (internal install)

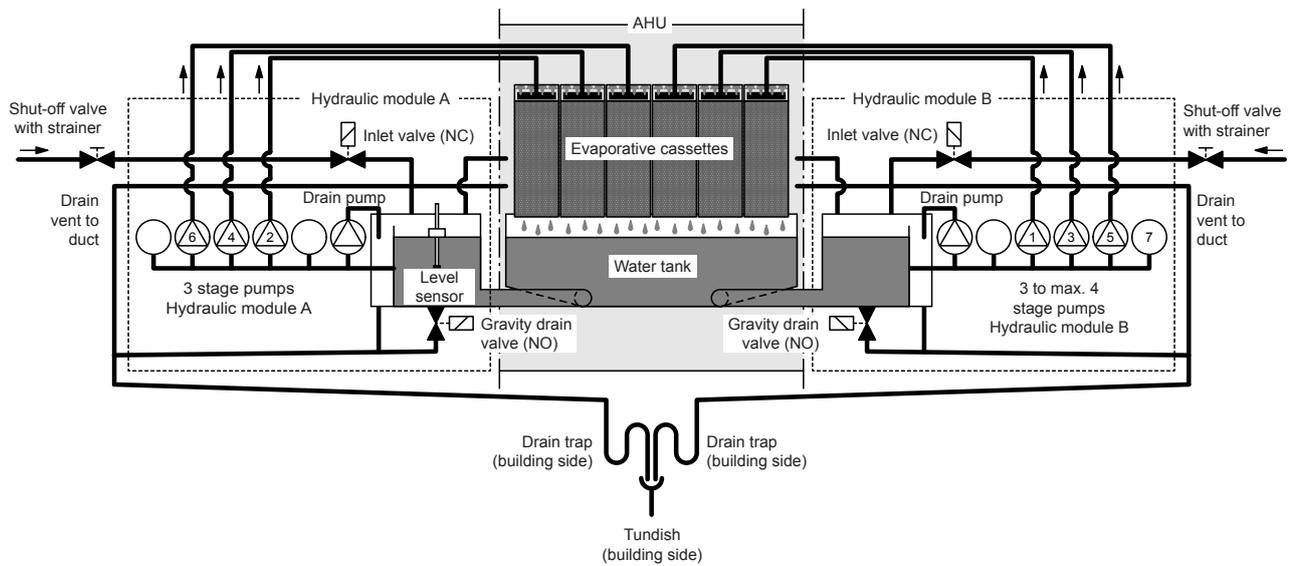


Fig. 12: Schematic flow diagram Condair ME Control with two hydraulic modules (external install)

### 3.4.8 Functional description Condair ME Control

The water tank is filled up to a preset upper level via the level-controlled inlet valve (with one hydraulic module) or via the level-controlled inlet valves (with two hydraulic modules). When the water level in the water tank drops below a certain limit, the level-controlled inlet valve(s) open(s) until the upper limit is reached again.

The Condair ME Control provides On/Off or stage control by means of the Condair ME Control control unit and the stage pumps. The Condair ME Control control unit processes analog sensor/control signals and uses them to control the stage pumps.

In case of a humidification/cooling request with **activated On/Off control** the inlet valve opens (with one hydraulic module) or the inlet valves open (with two hydraulic modules) and all stage pumps start and the water flows to the distribution headers above the evaporative cassettes.

In case of a humidification/cooling request with **activated stage control** the inlet valve opens (with one hydraulic module) or the inlet valves open (with two hydraulic modules), then up to five stage pumps (with one hydraulic module) or up to 7 stage pumps (with two hydraulic modules) start (depending on the demand signal and evaporative module size) and the water flows to the distribution headers above the evaporative cassettes.

The distribution pipes inside the distribution headers evenly supply the water to the entire surface of the evaporative cassettes where it flows down and humidifies the air flowing through the evaporative cassettes. The excess water not used for humidification flows to the water tank.

To prevent accumulation of mineral residues and the formation of germs in the water tank, the tank is completely drained periodically (interval or time controlled). Additionally further hygiene functions can be activated: Operation-dependent draining of the water tank (fill cycle, conductivity, temperature or time controlled).

# 4 Operation

## 4.1 Important notes on operation

### Qualification of personnel

The Condair ME Control must be commissioned and operated only by personnel familiar with the system and adequately qualified for the respective tasks. It is the owner's responsibility to verify proper qualification of the operating personnel.

### General notes

The instructions and details regarding commissioning and operation must be followed and upheld.

The initial commissioning of the Condair ME Control requires appropriately trained technical personnel. It is strongly recommended that your Condair representative commissions your system. Part of this initial commissioning process is a disinfection of the water tank, and if required the evaporative cassettes. Please read this document in full before commencing any work.

Please pay attention to local regulations regarding working at heights and electrical work.

### Safety and hygiene



**DANGER!**

**The Condair ME Control must be operated in accordance with this manual. Failure to do so could result in contamination that might cause Legionnaires' disease, which can be fatal.**



**WARNING!**

**The Condair ME control unit should not be electrically isolated for periods exceeding 24 hours as automatic drain and purge cycles will be disabled.**

## 4.2 Initial commissioning

The initial commissioning of the Condair ME Control may only be carried out by Condair authorized and appropriately trained technical personnel.

### Inspections

Prior to initial commissioning the complete system must be inspected for correct execution of the installations. Proceed as follows:

1. Switch off AHU.
2. **Evaporative module installation:** Check correct selection of evaporative module on rating plate if multiple units on site. Check that the evaporative module has been installed level in all planes with secure blanking plates to prevent air bypass. Check that there is sufficient access for cassette removal during maintenance. Ensure assembly is securely fixed, and that there is no visible damage. Check that the evaporative module is installed in a waterproof section. Check evaporative module (including tank) is free of dirt/ debris and clean as necessary.
3. **Control unit installation:** Check that the control unit is mounted in a convenient dry location outside the AHU/air duct.
4. **Supply water Installation:** Ensure the water system in the building has been subject to a Risk Assessment. The Condair ME Control **must be connected to a clean, wholesome mains water supply**. It is the responsibility of the user to ensure that the water system complies with local regulations and bylaws, particularly those for the control of Legionella microbes. The use of mains water fed tanks and reservoirs is only permitted as part of a managed water treatment system. Check that the evaporative module has a feed water supply between 2 bar (29 psi) and 5 bar (73 psi) connected to the supplied approved filling hose. Ensure that any hygiene options have been correctly installed. Check all joints and fittings for leaks.
5. **Drain installation:** Check that the drain line is made according to the corresponding instructions given in the installation manual. Ensure the drain line is connected to the main building drain and that drain pipework is trapped to a suitable level for the applicable working duct pressure. Check all joints and fittings. Ensure that the drain connection includes an air gap.
6. **Distribution pipework:** Check all water distribution pipework between the hydraulic module and the distribution headers are securely fitted.
7. **Electrical wiring:** Check all electrical connections with reference to the corresponding wiring diagram in this manual. Check that a 100...240V / 10A single phase supply is connected to the control unit. Ensure that this power supply is isolated with an electrical isolator within 1 m (39") of the control unit.
8. **Optional controls:** Check that appropriate controls connections have been made to the control unit. Refer to the controls wiring section of the installation manual.

9. **Flush water supply and test supply water quality:** Disconnect water supply pipe(s) from connector(s) on the hydraulic module(s). Fix hose(s) to free end of supply pipe(s) and lead hose to a drain. Carefully flush supply pipe(s) at least 5 minutes without creating splashing or aerosols.

Take a water quality sample to ensure that supply water meets the requirements specified in the water quality guide. The sample should be tested using a dip slide to indicate the total number of colony forming units per ml (cfu/ml). Generally, levels of  $10^3$  cfu/ml may be considered acceptable for this type of humidifier provided the species of microbes and/or fungi involved are themselves not considered to be harmful. If you are unsure of the quality of your water please consult your Condair distributor for advice.

Then reconnect the water supply pipe(s) to the supply connector(s) on the hydraulic module(s).

10. **Perform pressure test:** Turn on water supply and check for leaks. Ensure shut off valve is installed correctly.

After the system has been inspected and found correct proceed with the initial commissioning:

1. Switch off the AHU.
2. Switch on electrical isolator, and then the **<On/Off>** switch on the control unit.
3. Enter the activation code (if applicable - Path: Menu > Engineering password > Maintenance > Settings > Activation Code").
4. Simulate full demand and check components are operating correctly.
5. Check correct water level and pump activation.
6. Check water can flow to drain correctly.
7. Test correct flow of water to distribution header.
8. Test any fitted options (see relevant option addendum manual).
9. If the evaporative cassettes had become dirty or damp prior to commissioning, follow the disinfection procedure described in [Section 6.3](#) and [Section 6.9](#) of this manual.
10. If the system is equipped with fibre media evaporative cassettes (F75, F85, F95, C85, C95) perform a matrix wash over cycle (see [Section 4.5.5](#)).
11. Switch on fan of AHU and test operation with fans running and validate air conditions against the design data.
12. Test control devices.
13. Correctly configure Condair ME control unit (setpoints, control settings, etc.) according to the situation on site (see [Section 5.3](#)).
14. Switch off AHU, and ensure AHU is locked-off to prevent it from starting.
15. Remove any demand from the ME system.
16. Drain the tank and wipe tank clean.

17. Perform disinfection:

- Send a demand to the unit to make it fill and start running. The demand signal can be overridden for the duration of the disinfection using the "Manual Disinfection Demand" function under "Menu > Engineering password > Maintenance > Manual Disinfection" submenu.
  - Set the duration of the disinfection period using the "Manual Disinfection Duration" function under "Menu > Engineering password > Maintenance > Manual Disinfection". Ensure the disinfection period leaves sufficient time to neutralise the disinfectant if required.
  - Start disinfection process with the "Manual Disinfection Start" function under "Menu > Engineering password > Maintenance > Manual Disinfection", to prevent the Condair ME Control draining the water tank during the disinfection process.
  - Add a disinfection chemical according to tank volume.
  - After the disinfection process has completed, neutralise disinfectant, if required.
18. Power cycle the Condair ME Control to remove the forced disinfection demand (allowing normal control to be resumed) and check correct control operations (signals, fault outputs, Modbus/BACnet).
19. If commissioning has not been completed by an approved Condair representative, it is recommended that records are kept of commissioning date and software settings.
20. Demonstrate system to customer and highlight hygiene and maintenance requirements.
21. Raise any installation concerns.
22. Issue commissioning documentation.

The system is now ready for normal operation.

## 4.3 Display and operating elements

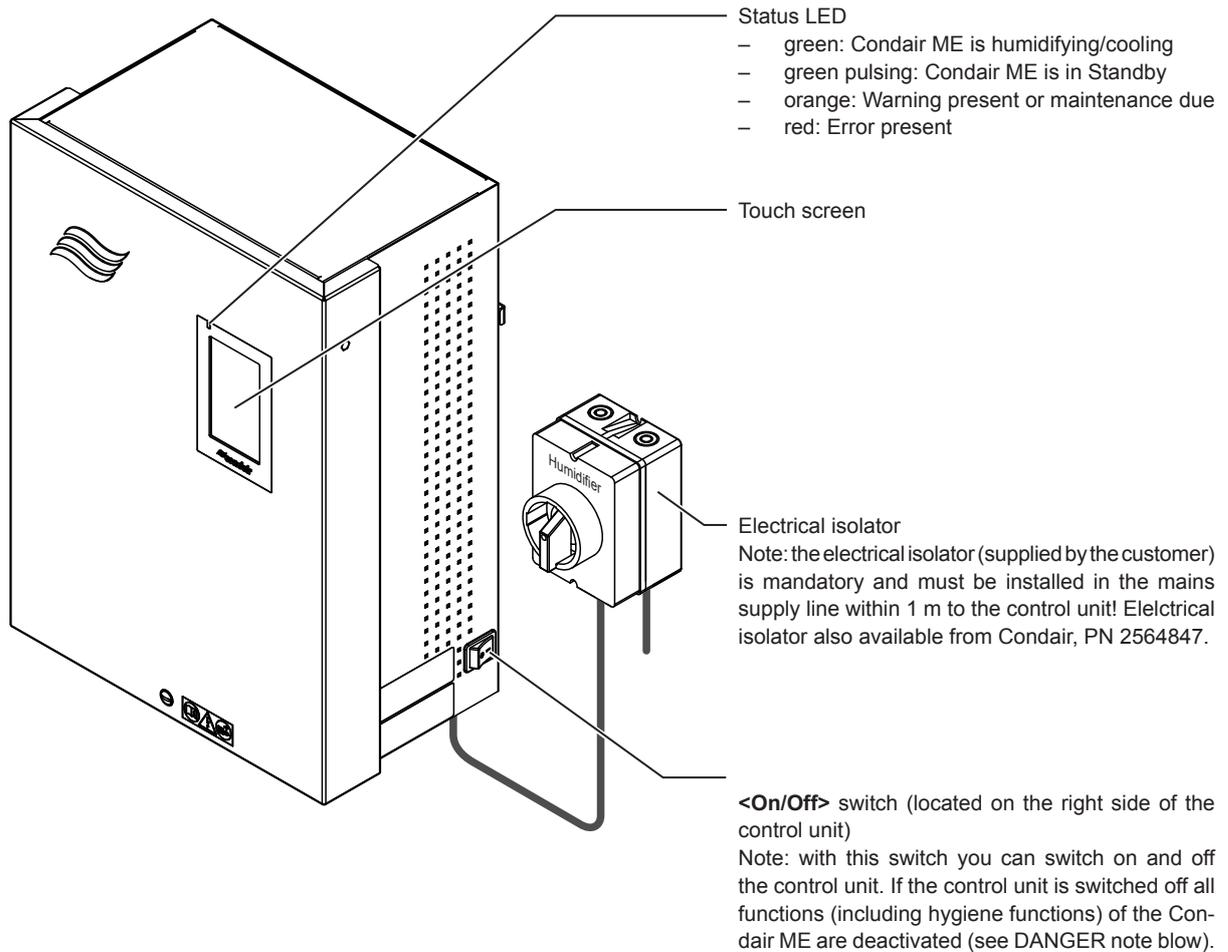


Fig. 13: Display and operating elements Condair ME Control



**DANGER!**  
**Risk of electric shock!**

There is still mains voltage inside the control unit even when you switch off the control unit via the <On/Off> switch. Mains voltage provides a risk of electric shock, therefore the **electrical isolator must be switched off before opening the control unit**. Only qualified personnel should carry out work within the ME control unit.

## 4.4 Start up for normal operation

It is assumed that initial commissioning has been carried out properly by the service technician of your Condair representative.

**If the Condair ME Control has been out of operation for a prolonged period of time, a complete system service has to be performed prior to the start up.**

The following description outlines the start up procedure for normal operation. Proceed as follows to prepare the Condair ME Control for operation:

1. Switch off AHU.
2. Examine the Condair ME Control for possible damage and faulty installation. Ensure tank is empty.



### **DANGER!**

Damaged systems or systems with damaged components or faulty installations may present danger to life or cause severe damage to material assets.

**Damaged systems and/or systems with damaged or faulty installation must not be operated.**

3. Close doors of AHU if open, then switch on AHU.
4. Open shut-off valve in the water supply line.
5. Make sure the front panel of the control unit is mounted and fixed with the retaining screw.
6. **Switch on the electrical isolator in the mains supply line** (mains supply to control unit).
7. Switch the **<On/Off>** switch on the right side of the control unit to **"On"**, and activate control unit via the external enable switch if necessary. Check for any fault or maintenance due message.
8. If Condair ME Control has been disconnected from the mains for more than 48 hours proceed as follows:
  - Switch off control unit via the **<On/Off>** switch.
  - Risk assess the system and check the need for disinfection.
  - Close shut-off valve(s) in the water supply line(s) (switch off the AHU if the shut off valve is located inside the AHU).
  - Disconnect water supply line(s) from the connector(s) on the hydraulic module(s). **Caution should be taken to ensure no splashing is created.**
  - Connect hose to the open end of the water supply line and lead the hose into open tundish outside the AHU.
  - Open shut-off valve(s) in the water supply line(s) and flush water supply line(s) at least 5 minutes. Then, close shut-off valve(s) again, remove hose(s) and reconnect supply line(s) to the connector(s) on the hydraulic module(s).
  - Open shut-off valve(s) in the water supply line(s) and switch on control unit via the **<On/Off>** switch.
9. If the display shows the message "Switched Off" enter the menu of the control software with the Engineering password and set the parameter "Operation" in the "Maintenance > Setting submenu to "On".

The Condair ME Control is now in **normal operating mode** and the **home screen** is shown.

Note: Further information on the operation of the Condair ME control software can be found in [Section 5](#).

## 4.5 Notes on operation

### 4.5.1 Important notes on operation

- For hygiene reasons the inlet valve opens in standby mode **every 12 hours for approximately 20 seconds** in order to flush water supply line.
- If no demand is present for more than 23 hours the tank will be drained.

### 4.5.2 Remote operating and fault indication

The relays on the remote operating and fault indication board indicate the following operating system status:

Activated remote indication relay	When?
"Error"	An error is present, operation is stopped or further operation is possible for a limited period of time only.
"Service"	One of the maintenance counter has elapsed. The corresponding maintenance must be performed.
"Running"	Demand present/system is humidifying/cooling
"Unit on"	The Condair ME is switched on and under voltage
"Furnace"	Not supported!

### 4.5.3 Recommended regular checks during operation

During operation the Condair ME Control has to be checked periodically in accordance with the table below.

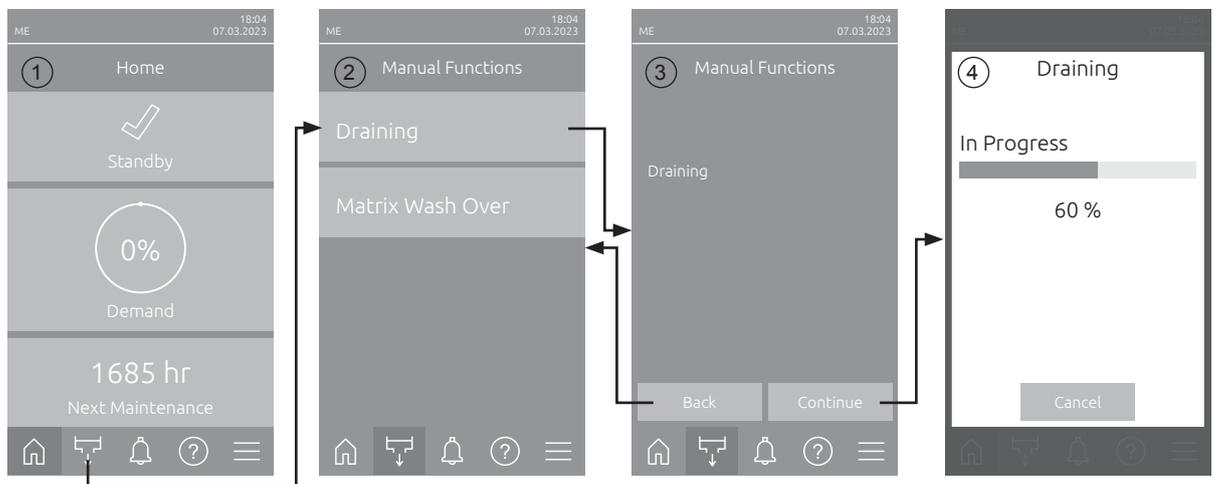
Operations Checks	Daily	Weekly	Monthly	Quarterly
Monitor humidity/temperature control	✓	✓	✓	✓
Check for any low humidity/temperature concerns	✓	✓	✓	✓
Check any alarms on BMS	✓	✓	✓	✓
Visible check for: <ul style="list-style-type: none"> <li>– Units switched on with no fault lights</li> <li>– No water leakage (air on and air off side)</li> <li>– No water flow to drain (water may flow to drain during drain cycle and when unit loses humidity demand)</li> <li>– system components for correct fixing and any damage</li> <li>– electric installation for any damage.</li> </ul>	✓	✓	✓	✓
All UV lamps are active (with water level), if applicable		✓	✓	✓
Matrix media is saturated (relative to demand signal)			✓	✓
Condition of tanks and air on matrix is clean			✓	✓
Inspect and determine replacement frequency of sediment filter			✓	✓

Operations Checks	Daily	Weekly	Monthly	Quarterly
Add disinfection chemical (according to tank volume)			✓	✓
Conductivity (reading below set point)			✓	✓
Correct software settings			✓	✓
Condition of tanks are clean (clean as required)				✓
Water level is correct (ensure unit is not in drain cycle)				✓

If the checks reveal any irregularities (e.g. leakage, error indication) or any damaged components take the Condair ME Control out of operation as described in [Section 4.6](#). Then, have the malfunction eliminated or the damaged component replaced by a well trained specialist or a service technician from your Condair representative.

#### 4.5.4 Manual draining of the water tank

If a manual draining of the water tank is required proceed as follows:

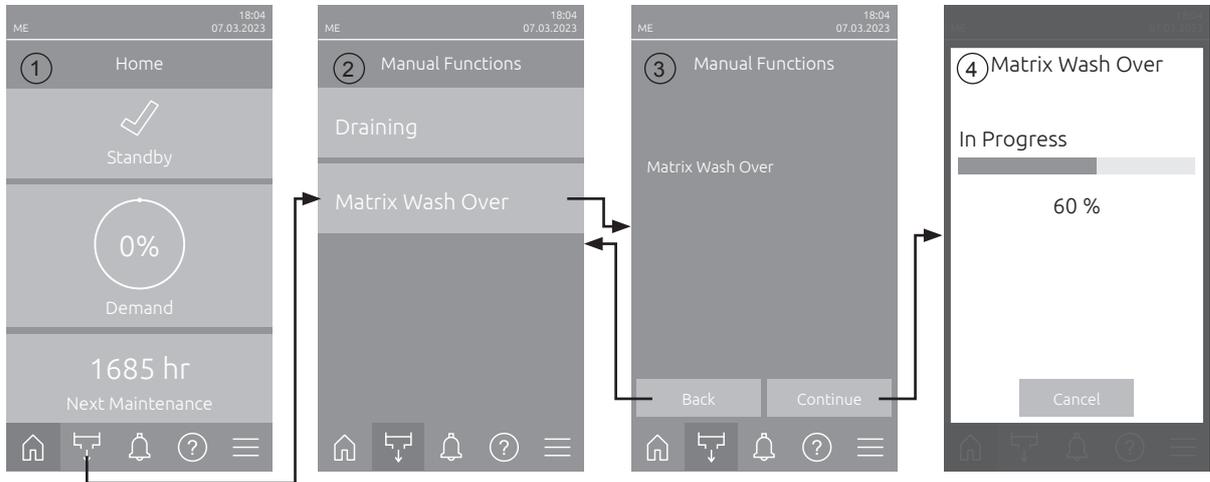


1. Close shut-off valve(s) in the water supply line(s) to the hydraulic module(s).
2. Press on the **<Manual Functions>** button in the home screen (1).
3. The "Manual Functions" submenu (2) appears. Here, press on the **<Draining>** button.
4. The draining confirmation display appears. Here, press on the **<Continue>** button to start the draining of the water tank.  
Note: A possible running humidification/cooling process is interrupted.
5. The draining progress display appears (4) and shows the current status of the draining process. After draining process is finished the home screen is shown again.  
In order to stop the draining process, press the **<Cancel>** button in the draining progress window. The draining process is stopped, and the home screen is shown again.

## 4.5.5 Performing a matrix wash over

At initial commissioning when the "W49 - Matrix Wash Over" warning message appears or any time new fibre evaporative cassettes have been installed, a matrix wash over cycle has to be performed. If a matrix wash over cycle is required proceed as follows:

Note: The "Matrix Wash Over" function only appears if the function has been activated in the Engineering level of the control software.



1. Press on the **<Manual Functions>** button in the home screen (1).
2. The "Manual Functions" submenu (2) appears. Here, press on the **<Matrix Wash Over>** button.
3. The matrix wash over confirmation display appears. Here, press on the **<Continue>** button to start the matrix wash over.  
Note: A possible running humidification/cooling process is interrupted.
4. The matrix wash over progress display appears (4) and shows the current status of the matrix wash over process. After matrix wash over process is finished the home screen is shown again.  
In order to stop the matrix wash over process, press the **<Cancel>** button in the matrix wash over progress window. The matrix wash over process is stopped, and the home screen is shown again.

## 4.6 Decommissioning the system

In order to decommission the Condair ME Control (e.g. to perform maintenance works, to eliminate a malfunction, etc.) perform the following steps:

1. If the system has to be switched off because of a malfunction, please note the Warning and Fault code(s) of the actual error message(s) shown in the fault history.
2. Close the shut-off valve(s) in the water supply line(s).
3. Empty the water tank with the manual drain function (see [Section 4.5.4](#)).
4. Switch off the control unit via the **<On/Off>** switch on the right side of the unit, and if applicable deactivate control unit via the external enable switch.
5. **Disconnect control unit from the mains:** switch off the electrical isolator in the mains supply to the control unit and secure switch in "Off" position against accidentally being switched on.
6. **Let the fan of the ventilation system run** until the evaporative module is dry.
7. If work has to be carried out on the evaporative module or the hydraulic module(s) mounted inside the duct, switch off the AHU and secure the system against accidentally being switched on.

### Important Notes!

- If the Condair ME Control is in working order, then for hygiene reasons we recommend that the system should be left powered on, even if the Condair ME Control is not going to be used for a prolonged period of time. To prevent the Condair ME from humidifying/cooling set the "Operation" function in the "Maintenance > Settings" submenu to "Off". This keeps the hygiene functions (e.g. periodical flushing of water supply pipe) active and hence the build-up of bacteria is opposed.



### DANGER!

If the Condair ME system is isolated from the mains power for a prolonged period, water stagnation might occur in the supply pipework, and microbial contamination of the supply pipework and Condair ME system could result.

- If the Condair ME system is to be isolated from the mains for a prolonged period, then the ME system and any storage tanks or vessels should be drained and left dry. Before putting the system back in to operation, a full risk assessment should be undertaken to ensure safe operation, with particular attention paid to water supply quality. **Additionally a complete system service has to be performed prior to putting the system back in to operation.**

# 5 Operating the Condair ME control software

## 5.1 Home screen

After switching on the control unit and the automatic system test the control unit is in normal operating mode and the home screen is shown.

Note: the appearance of the home screen depends on the current device and error status and the configuration of the humidity/temperature control of the system. It can deviate from the display shown below.

The home screen is structured as follows:

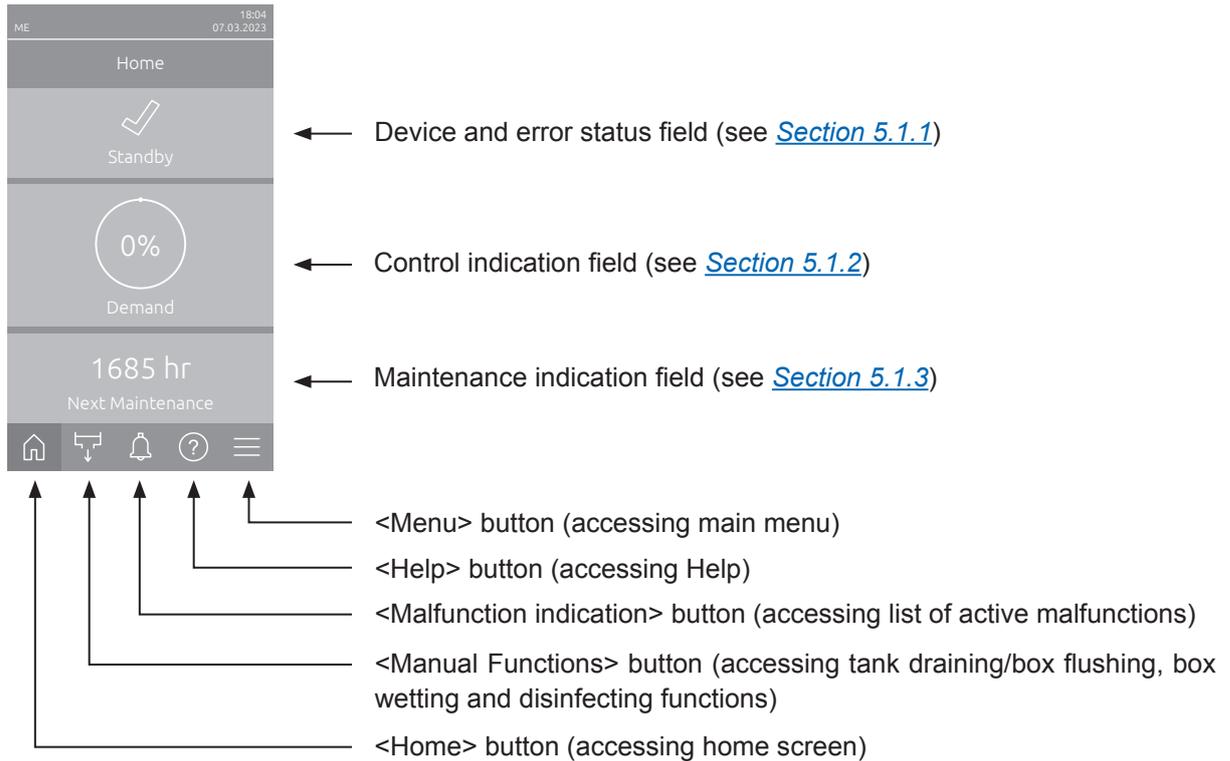
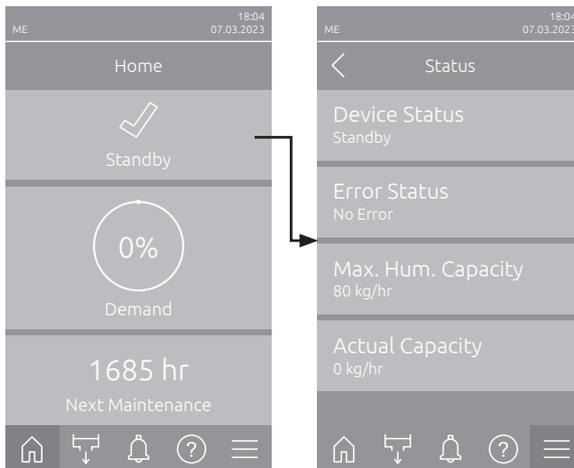


Fig. 14: Home screen

## 5.1.1 Device and error status indication field

If you press the device and error status field in the home screen, a window appears with further information on the device and error status.



- **Device Status:** Shows the current device status.
- **Error Status:** Shows the current error status ("No Error", "Warning" or "Error").
- **Max. Hum. Capacity:** Shows the maximum humidification/cooling output of the Condair ME in kg/hr.
- **Actual Capacity:** Shows the current humidification/cooling output of the Condair ME in kg/hr.

The following error status symbols may be shown:

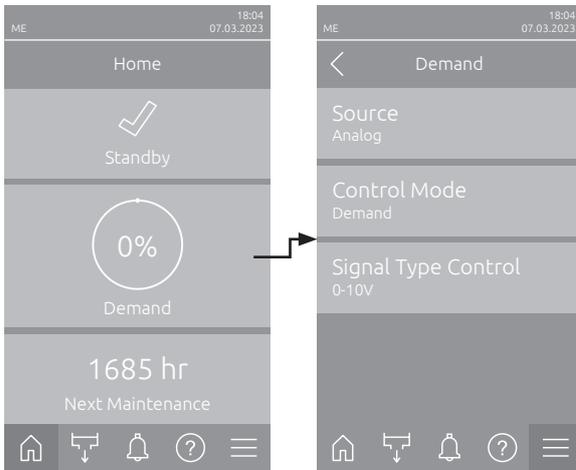
Error status symbol	Description
✓	The Condair ME works perfectly.
!	A malfunction with the status "Warning" has occurred.
✗	A malfunction with the status "Error" has occurred. Depending on the error, the operation of the Condair ME is stopped, or it continues to work to a limited extent.

The following device status indications may appear:

Device status	Description
Initializing	The control is initialising.
Stopped	The Condair ME was stopped due to a malfunction that makes it impossible to continue operation.
Standby	No humidity/cooling demand for more than 60 minutes the Condair ME is in standby mode.
Humidifying	The Condair ME is humidifying.
Cooling	The Condair ME is cooling.
Holding	The Condair ME holds the current water level in the tank to be ready for operation.
Draining	The Condair ME is draining the tank.
Refreshing	If the water conductivity is not decreasing after a dilution, a water refresh cycle will be carried out (refill of the full tank). Note: This message appears only, if the system is equipped with the conductivity monitoring option.
Filling	The Condair ME is filling the tank.
Diluting	The water in the tank is being diluted to minimise limescale.
Assisted Draining	After the demand has dropped to zero, the system drains a small amount of water to give space to the water running out of the matrix.
Drain Check	The Condair ME is draining the tank and uses the first section of the drain procedure to check whether the drain valve is working properly.
Bleeding	During operation the stage pumps are stopped periodically to bleed any air out of the pumps by the water flowing back from the distribution pipes.
Ramping Up	The Condair ME is ramping up the water duty to the matrix.
Purging	The inlet pipework is being purged.
Softstart	The Condair ME is starting the required pumps with reduced speed for a preset time.
Switched Off	The operation of the Condair ME is deactivated via the control software. The hygiene functions (regular flushing of the water system) remain still active.
Remote Off	The Condair ME was stopped via the external enable switch.

## 5.1.2 Control indication field

If you press the control indication field in the home screen, a window appears with further information on humidity/temperature control (control mode: "On/Off" or "Demand") or the setpoint input (control mode: "P-Control" or "PI-Control"), depending on the current control mode.



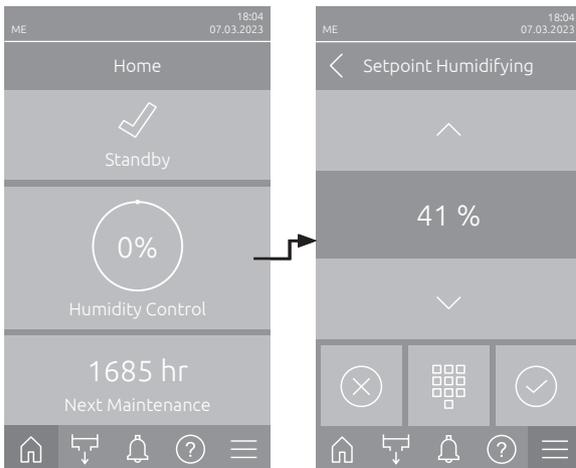
- **Source:** Shows the source of the control signal ("Analog", "Modbus", "BACnet" or "IoT").
- **Control Mode:** Shows the current control mode ("On/Off", "Demand", "P-Control" or "PI-Control").
- **Signal Type Control:** Shows the control signal type used.  
Note: This setting appears if signal source is set to "Analog" and the control mode is set to "Demand".

**Modbus Protocol:** Shows the selected Modbus protocol or whether the Modbus communication is switched off.

Note: This setting appears if signal source is set to "Modbus".

**BACnet Protocol:** Shows the selected BACnet protocol or whether the BACnet communication is switched off.

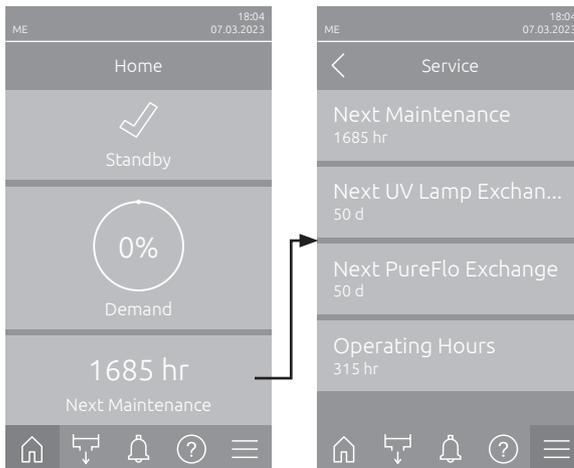
Note: This setting appears if signal source is set to "BACnet".



- **Setpoint Humidifying / Setpoint Cooling:** Setting of the desired humidity setpoint value in %rH (for humidifying application) or temperature setpoint value in °C or °F (for cooling application).

### 5.1.3 Maintenance indication field

If you press the Maintenance indication field in the home screen, a window appears with further information on maintenance.

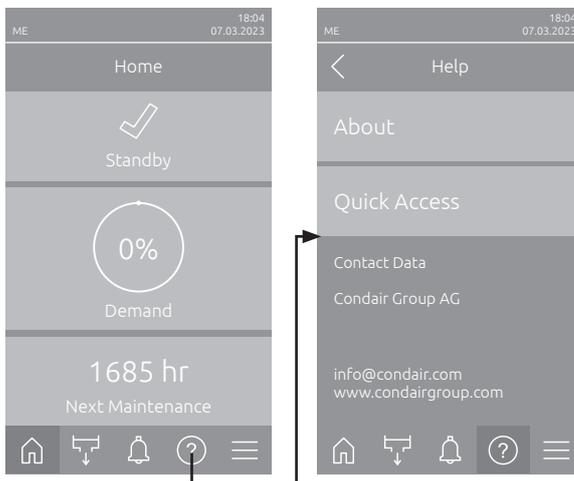


- **Next Maintenance:** Shows the remaining time in hours until the next system maintenance is due.
- **Next UV Lamp Exchange:** Shows the remaining time in days until the next UV lamp(s) exchange is due.  
Note: Only appears if the setting "UV Lamp" has been activated in the Engineering level of the control software.
- **Next PureFlo Exchange:** Shows the remaining time in days until the next replacement of the PureFlo cartridge is due.  
Note: Only appears if the setting "PureFlo" has been activated in the Engineering level of the control software.
- **Operating Hours:** Shows the number of operating hours since initial commissioning.

## 5.2 Information functions in the "Help" Menu

### 5.2.1 Accessing the "Help" menu

Press the <Help> button in the home screen. The help menu with the contact details appears.



## 5.2.2 Query operating states in the "About" submenu



Continued on  
next page

- **Humidifier Model:** Name of the humidifier model.
- **RFI Type:** Shows whether the optional remote operating and fault indication board is installed and activated ("Yes") or not ("No").
- **Software Version:** Actual software versions of the control board ("Device FW Version" and "Bootloader FW Version") and driver boards ("Driver Board", "Conductivity Board" and "RFI Board").
- **Serial Number:** Serial number of the humidification system.
- **Actual Stages:** Actual number of currently operating stages of the system.
- **Max. Stages:** Number of maximum stages set to operate.
- **Incoming Air Temperature:** Actual temperature of the air before the evaporative cassettes.  
Note: This information field appears only if optional freeze protection sensor is installed and the optional freeze protection function is activated in the Engineering level of the control software.
- **Water Sensor:** Indicates whether the water sensor is currently active ("On" - monitoring the water conductivity & temperature) or inactive ("Off" - water level is too low to monitor).  
Note: This information field only appears if the control software has been configured accordingly in the technical level.
- **Water Temperature:** Actual temperature of the water in the tank in °C or °F.  
Note: This information field only appears if the control software has been configured accordingly in the technical level.
- **Water Conductivity:** Actual conductivity of the water in the tank in µS/cm.  
Note: This information field only appears if the control software has been configured accordingly in the technical level.
- **Dilution Interval, Dilution Fill Cycle, Dilution Conductivity Limit or Dilution Water Temperature:** Current set value for the selected dilution mode, after which a dilution cycle is triggered when it is expired or is exceeded.  
Note: If Conductivity & Temperature dilution is selected, the value for the water temperature dilution is displayed in an additional parameter line under the conductivity dilution.
- **Periodic Drain Interval or Periodic Drain Time:** Actual set interval time in hours or time of day, for periodic draining of the water tank.
- **Speed Pump 1:** Actual speed of stage pump 1 in % of the maximum speed.
- **Speed Pump 2:** Actual speed of stage pump 2 in % of the maximum speed.
- **Speed Pump 3:** Actual speed of stage pump 3 in % of the maximum speed.
- **Speed Pump 4:** Actual speed of stage pump 4 in % of the maximum speed.
- **Speed Pump 5:** Actual speed of stage pump 5 in % of the maximum speed.

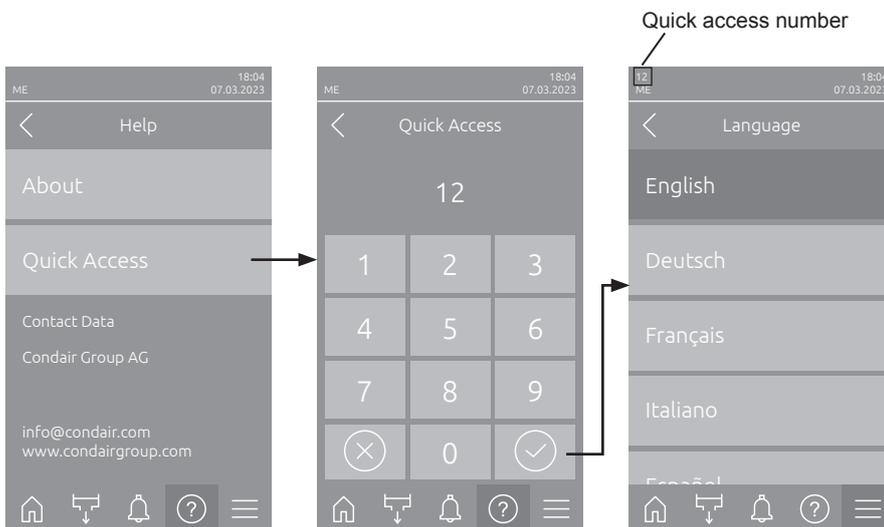
Speed Pump 6 0 %
Speed Pump 7 0 %
Stage Pump 1 0.0 kg/hr
Stage Pump 2 0.0 kg/hr
Stage Pump 3 0.0 kg/hr
Stage Pump 4 0.0 kg/hr
Stage Pump 5 0.0 kg/hr
Stage Pump 6 0.0 kg/hr
Stage Pump 7 0.0 kg/hr

- **Speed Pump 6:** Actual speed of stage pump 6 in % of the maximum speed.  
Note: Appears only for Condair ME systems over 3 m wide with 6 or 7 pumps.
- **Speed Pump 7:** Actual speed of stage pump 7 in % of the maximum speed.  
Note: Appears only for Condair ME systems over 3 m wide with 7 pumps
- **Stage Pump 1:** Actual flow rate of stage pump 1 in kg/hr or lb/hr.
- **Stage Pump 2:** Actual flow rate of stage pump 2 in kg/hr or lb/hr.
- **Stage Pump 3:** Actual flow rate of stage pump 3 in kg/hr or lb/hr.
- **Stage Pump 4:** Actual flow rate of stage pump 4 in kg/hr or lb/hr.
- **Stage Pump 5:** Actual flow rate of stage pump 5 in kg/hr or lb/hr.
- **Stage Pump 6:** Actual flow rate of stage pump 6 in kg/hr or lb/hr.  
Note: Appears only for Condair ME systems over 3 m wide with 6 or 7 pumps.
- **Stage Pump 7:** Actual flow rate of stage pump 7 in kg/hr or lb/hr.  
Note: Appears only for Condair ME systems over 3 m wide with 7 pumps.

### 5.2.3 Quick access to setting parameters in the "Quick Access" submenu

Press the <Quick Access> button in the "Help" menu. Then enter the quick access number of the desired setting parameter. You will find this number in the top left corner in the setting window of the corresponding parameter. Confirm the entry and the setting dialog for the corresponding parameter appears.

Note: If the parameter is password protected, after entering the quick access number, the password "8808" must first be entered before the setting dialog for the parameter appears.

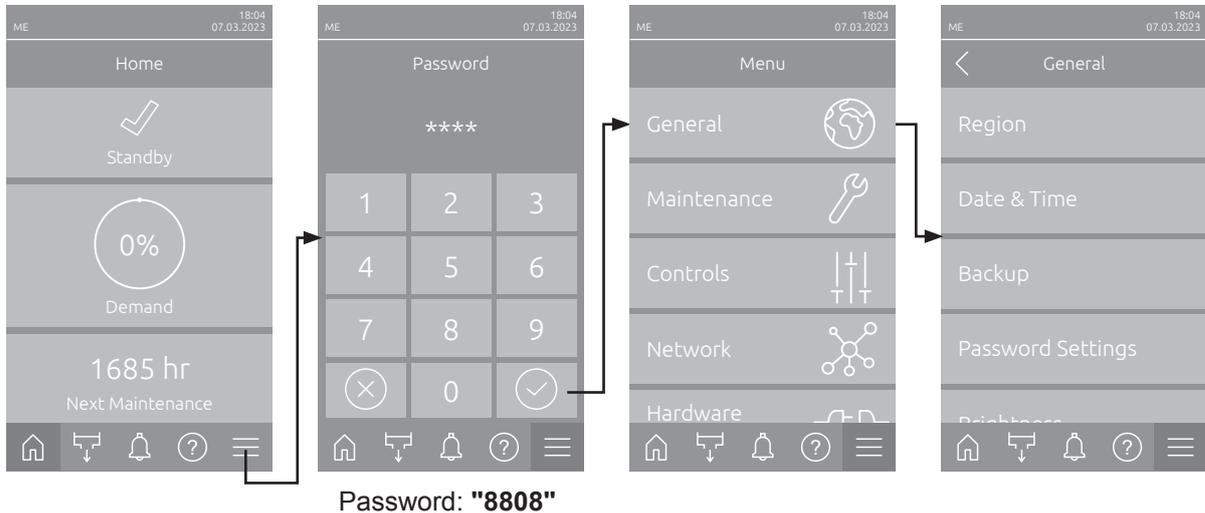


## 5.3 Configuration

### 5.3.1 Settings and features in the "General" submenu

#### 5.3.1.1 Accessing the "General" submenu

Access the "General" submenu as shown below.



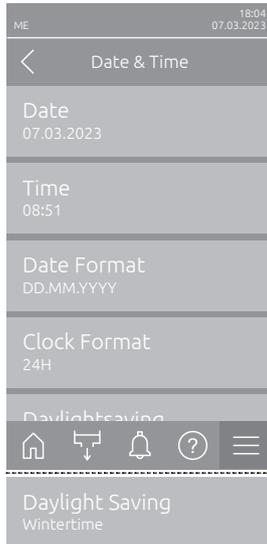
#### 5.3.1.2 Determine language and system of units in the "Region" submenu



- **Language:** With this setting you determine the language.  
Factory setting: **depending on the country**  
Options: **different languages**
- **Units:** With this setting you determine the desired unit system.  
Factory setting: **depending on the country**  
Options: **Metric or Imperial**

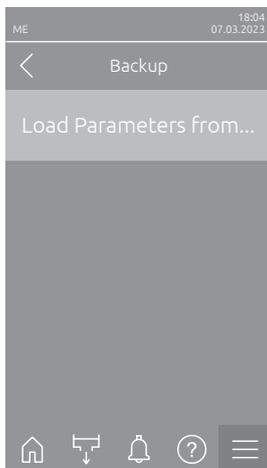
### 5.3.1.3 Date and time settings in the "Date & Time" submenu

Note: The date and time must be entered correctly, as these are used for the entries in the malfunctions and maintenance history list.



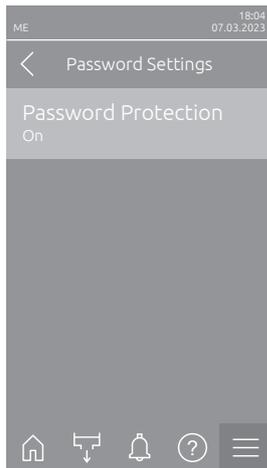
- **Date:** With this setting you determine the current date in the set format ("MM/DD/YYYY" or "DD.MM.YYYY").  
Factory setting: **01/01/2020**
- **Time:** With this setting you set the current hour of the day in the set time format ("12H" or "24H").  
Factory setting: **12:00**
- **Date Format:** With this setting you determine the desired date format.  
Factory setting: **DD.MM.YYYY**  
Options: **DD.MM.YYYY** or **MM/DD/YYYY**
- **Clock Format:** With this setting you determine the desired time format.  
Factory setting: **24H**  
Options: **24H** (24 hours, display 13:35) or **12H** (12 hours, display: 01:35 PM)
- **Daylight Saving:** With this setting you determine the daylight saving time summer time / winter time).  
Factory setting: **Wintertime**  
Options: **Summertime** or **Wintertime**

### 5.3.1.4 Read in parameter settings in the "Backup" submenu



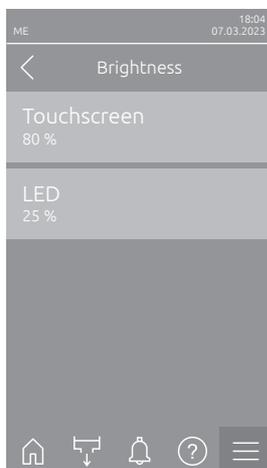
- **Load Parameters from USB:** With this function you can read in parameter settings that were previously saved on a FAT32 formatted USB stick. To do this, the USB stick with the parameter settings must be inserted into the USB interface on the control board. After pressing the selection field, a confirmation dialog appears in which you have to confirm the loading of the parameter settings again.

### 5.3.1.5 Activate/Deactivate password protection in the "Password Settings" submenu



- **Password Protection:** With this function you can protect the access to the main menu with the user password "8808" against unauthorized access ("On") or not ("Off").  
Factory setting: **On**  
Options: **Off or On**

### 5.3.1.6 Set the brightness of the touchscreen and the LED in the "Brightness" submenu



- **Touchscreen:** With this setting you determine the desired value for the display brightness.  
Factory setting: **80 %**  
Settings range: **15 ... 100 %**
- **LED:** With this setting you determine the desired value for the brightness of the status LED.  
Factory setting: **25 %**  
Settings range: **25 ... 100 %**



### 5.3.2.3 Software update in the "Update" submenu



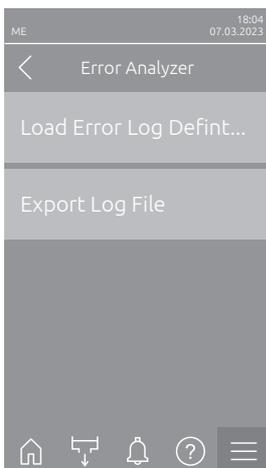
- **Update from USB:** With this function you can update the control software. The software is downloaded directly from the USB stick and then installed. Please note the information in [Section 6.11](#).
- **Update from Remote:** With this function you can update the control software. The software must already be downloaded before the update can be started. Please note the information in [Section 6.11](#).

### 5.3.2.4 View and export malfunctions and maintenance histories in the "Histories" submenu



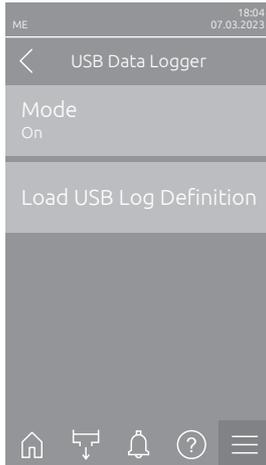
- **Error/Warning History:** With this function you can view the error and warning history list.
- **Maintenance History:** With this function you can view the maintenance history list.
- **Export Error/Warning History:** With this function you can save the error and warning history list on a USB stick.  
Note: Before you carry out this function, you must insert a FAT32 formatted USB stick into the USB interface on the control board.
- **Export Maintenance History:** With this function you can save the maintenance history list on a USB stick.  
Note: Before you carry out this function, you must insert a FAT32 formatted USB stick into the USB interface on the control board.

### 5.3.2.5 Load and export the error log file in the "Error Analyzer" submenu



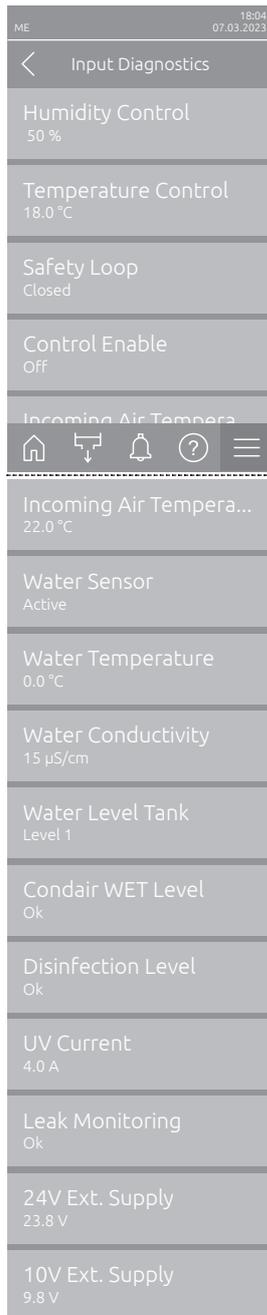
- **Load Error Log Definition** (carried out ex works): With this function you can load an "Error Log Definition file" available from Condair on a USB stick for recording malfunctions. Once the "Error Log Definition file" has been loaded, an error log file is created as soon as an error occurs during operation. This file can then be saved on a USB stick using the "Export Log File" function.  
Note: Before you carry out this function, you must insert a USB stick with the "Error Log Definition" file into the USB interface on the control board.
- **Export Log File:** With this function you can save an error log file created by the control on a USB stick and send it to Condair for further analysis.  
Note: Before you carry out this function, you must insert a FAT32 formatted USB stick into the USB interface on the control board.

### 5.3.2.6 Start operating data recording in the "USB Data Logger" submenu



- **Mode:** With this function you can switch the operating data recording on a USB stick on or off. A new csv file is created for each day and stored on the USB stick.  
Note: Before you carry out this function, you must insert a FAT32 formatted USB stick into the USB interface on the control board.  
Factory setting: **Off**  
Options: **Off or On**
- **Load USB Log Definition** (carried out ex works): With this function you can load a "USB log Definition file" available from Condair on a USB stick. This file determines which parameters are recorded via the USB data logger as soon as data logging is started with the "Mode" parameter.  
Note: Before you carry out this function, you must insert a USB stick with the "USB log Definition file" into the USB interface on the control board.

### 5.3.2.7 View operating states in the submenu "Diagnostics > Input Diagnostics"



*Continued on  
next page*

- **Humidity Control:** Actual demand signal in %.  
Note: Appears only if system mode in the "Controls" submenu is set to "Humidifying".
- **Temperature Control:** Temperature of area being controlled in °C or °F.  
Note: Appears only if system mode in the "Controls" submenu is set to "Cooling".
- **Safety Loop:** Shows the current status of the safety loop.
- **Control Enable:** Enable signal present at X16 ("On") or not ("Off").
- **Incoming Air Temperature:** Actual temperature of the air before the evaporative cassettes.  
Note: This information field appears only if optional freeze protection sensor is installed and the optional freeze protection function is activated in the Engineering level of the control software.
- **Water Sensor:** Indicates whether the water sensor is currently active ("Active" - monitoring the water conductivity & temperature) or inactive ("Inactive" - water level is too low to monitor).  
Note: This information field only appears if the control software has been configured accordingly in the technical level.
- **Water Temperature:** Actual temperature of the water in the tank in °C or °F.  
Note: This information field only appears if the control software has been configured accordingly in the technical level.
- **Water Conductivity:** Actual conductivity of the water in the tank in µS/cm.  
Note: This information field only appears if the control software has been configured accordingly in the technical level.
- **Water Level Tank:** Actual level (0 to 7) in the tank of the evaporative module captured by the level sensor.
- **Condair WET Level:** Actual level in the Condair Wet container (Ok = Sufficient liquid in the container, Empty = Container empty).  
Note: This information field only appears if the Condair WET dosing option is installed and activated in the Engineering level of the control software.
- **Disinfection Level:** Actual level in the Disinfection chemical container (Ok = Sufficient chemical in the container, Empty = Container empty).  
Note: This information field only appears if the disinfection dosing option is installed and activated in the Engineering level of the control software.
- **UV Current:** Actual current draw of the submerged UV lamps, if the submerged UV option is installed and activated in the Engineering level of the control software.
- **Leak Monitoring:** Actual status of the leak monitoring option (Leak = leak present, Ok = no leak).  
Note: This information field only appears if the leak monitoring option is installed and activated in the Engineering level of the control software.
- **24V Ext. Supply:** Effective voltage of the 24 V DC supply.
- **10V Ext. Supply:** Effective voltage of the 10 V DC supply.

Inlet Valve Closed
Drain Valve Closed
Drain Pump Off
Speed Pump 1 0 %
Speed Pump 2 0 %
Speed Pump 3 0 %
Speed Pump 4 0 %
Speed Pump 5 0 %
Speed Pump 6 0 %
Speed Pump 7 0 %

- **Inlet Valve:** Actual status of inlet valve ("Open" or "Closed").
- **Drain Valve:** Actual status of gravity drain valve ("Open" or "Closed").
- **Drain Pump:** Actual status of drain pump ("On" or "Off").
- **Speed Pump 1:** Actual speed of stage pump 1 in % of the maximum speed.
- **Speed Pump 2:** Actual speed of stage pump 2 in % of the maximum speed.
- **Speed Pump 3:** Actual speed of stage pump 3 in % of the maximum speed.
- **Speed Pump 4:** Actual speed of stage pump 4 in % of the maximum speed.
- **Speed Pump 5:** Actual speed of stage pump 5 in % of the maximum speed.
- **Speed Pump 6:** Actual speed of stage pump 6 in % of the maximum speed.  
Note: Appears only for Condair ME systems over 3 m wide with 6 or 7 pumps.
- **Speed Pump 7:** Actual speed of stage pump 7 in % of the maximum speed.  
Note: Appears only for Condair ME systems over 3 m wide with 7 pumps.

### 5.3.2.8 Checking the relays of the remote operating and fault indication board in the "Diagnostics > RFI Diagnostics" submenu

Note: This submenu is only accessible if the remote operating and fault indication board has been installed and activated in the Engineering level of the control software.

ME 18:04 07.03.2023
< RFI Diagnostics
Error Off
Service Off
Running Off
Unit On Off
Furnace
Home, Back, Bell, Question mark, Menu icons
Furnace Off

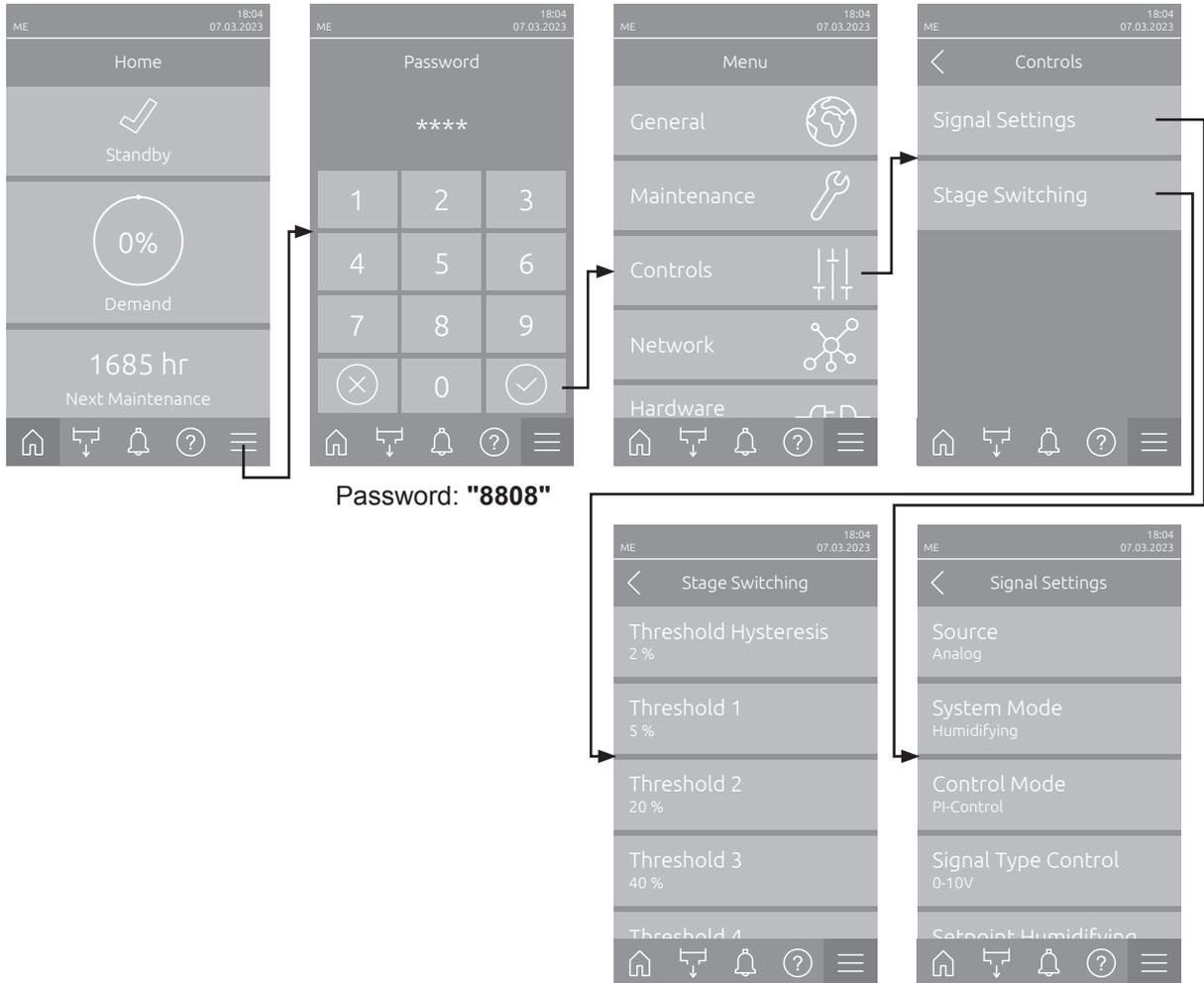
- **Error:** Activation and deactivation of the "Error" relay.
- **Service:** Activation and deactivation of the "Service" relay.
- **Running:** Activation and deactivation of the "Running" relay.
- **Unit On:** Activation and deactivation of the "Unit On" relay.
- **Furnace:** Activation and deactivation of the "Furnace" relay.

### 5.3.3 Settings and features in the "Controls" submenu

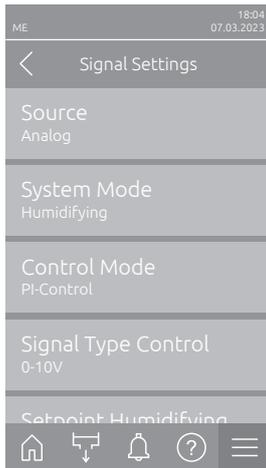
In the "Controls" submenu you determine the control settings for the humidification system Condair ME. The control settings available depend on the selected signal source and the control mode.

#### 5.3.3.1 Accessing the "Controls" submenu

Access the "Controls" submenu as shown below.



### 5.3.3.2 Control settings in the "Signal Settings" submenu



- **Source:** With this setting you determine whether the control signal comes from an analog source "Analog" (humidity/temperature sensor, demand signal from an external humidity/temperature controller), a BMS (building management system) via "Modbus", "BACnet" or via "IoT".

Factory setting: **Analog**

Options: **Analog** (Analog demand signal or humidity/temperature signal)

**Modbus** (Signal via Modbus)

**BACnet** (Signal via BACnet)

**IoT** (Signal via IoT)

- **System Mode:** with this setting you determine whether the Condair ME Control is configured as an air humidifier ("Humidifying") or as an air cooler ("Cooling").

Factory setting: **Humidifying**

Options: **Humidifying** (configured as air humidifier)

**Cooling** (configured as air cooler)

- **Control Mode:** with this setting you determine the type of controller used with the humidification system Condair ME.

Factory setting: **Demand**

Options: **On/Off** (external On/Off humidistat)

**Demand** (external continuous controller)

**P-Control** (internal P-Controller)

**PI-Control** (internal PI-Controller)



If the "**System Mode**" is set to "**Humidifying**" the following settings are available:

- **Signal Type Control:** with this setting you determine the control signal with which the Condair ME system is controlled.

**Note:** This setting appears only if "Source" is set to "Analog" and if "System Mode" is set to "Humidifying", and "Control Mode" is set to "Demand", "P-Control" or "PI-Control" or if "Source" is set to "Analog" and if "System Mode" is set to "Cooling" and "Control Mode" is set to "Demand".

Factory setting: **0-10 V**

Options: **0-5 V, 1-5 V, 0-10 V, 2-10 V, 0-16 V, 3.2-16 V, 0-20 V, 4-20 V, 0-20mA, 4-20mA**

- **Setpoint Humidifying:** with this setting you set the humidity setpoint for the internal P/PI-Controller in % relative humidity.

**Note:** This setting appears only if the "Control Mode" is set to "P-Control" or "PI-Control".

Factory setting: **40 %rh**

Setting range: **0 ... 95 %rh**

- **P-Band Humidifying:** with this setting you set the proportional range for the internal P/PI-Controller in % relative humidity.

**Note:** This setting appears only if the "Control Mode" is set to "P-Control" or "PI-Control".

Factory setting: **15 %rh**

Setting range: **6 ... 65 %rh**

- **I-Time Humidifying:** with this setting you set the integral time for the internal PI-Controller.  
**Note:** This setting appears only if the "Control Mode" is set to "PI-Control".  
Factory setting: **5 minutes**  
Setting range: **1 ... 60 minutes**
- **Lower Limit Humidifying:** With this setting you set the minimum signal value in % of the maximum signal value of the humidity sensor, if undershot a sensor interruption message (Error "E32") is triggered.  
**Note:** This setting appears only if the "Control Mode" is set to "P-Control" or "PI-Control".  
Factory setting: **2.0 %**  
Setting range: **1.0 ... 5.0 %**



If the "**System Mode**" is set to "**Cooling**" the following settings are available:

- **Signal Type Temperature:** with this setting you determine the control signal with which the Condair ME system is controlled.  
**Note:** This setting appears only if "Source" is set to "Analog", "System Mode" is set to "Cooling" and "Control Mode" is set to "P-Control" or "PI-Control".  
Factory setting: **0-10 V**  
Options: **0-5 V, 1-5 V, 0-10 V, 2-10 V, 0-16 V, 3.2-16 V, 0-20 V, 4-20 V, 0-20mA, 4-20mA**
- **Setpoint Cooling:** with this setting you set the humidity setpoint for the internal P/PI-Controller in °C or °F.  
**Note:** This setting appears only if the "Control Mode" is set to "P-Control" or "PI-Control".  
Factory setting: **20 °C (68 °F)**  
Setting range: **0 ... 40 °C (32... 104 °F)**
- **P-Band Cooling:** with this setting you set the proportional range for the internal P/PI-Controller in °C or °F.  
**Note:** This setting appears only if the "Control Mode" is set to "P-Control" or "PI-Control".  
Factory setting: **10.0 °C (50.0 °F)**  
Setting range: **1.0 ... 50.0 °C (33.8 ... 122.0 °F)**
- **I-Time Cooling:** with this setting you set the integral time for the internal P/PI-Controller.  
**Note:** This setting appears only if the "Control Mode" is set to "PI-Control".  
Factory setting: **5 minutes**  
Setting range: **1 ... 60 minutes**
- **Temperature Min:** with this setting you determine the minimum temperature of the measuring range of the temperature sensor used.  
**Note:** This setting appears only if "System Mode" is set to "Cooling" and "Control Mode" is set to "P-Control" or "PI-Control".  
Factory setting: **5 °C (41 °F)**  
Setting range: **-50 ... 100 °C (-58 ... 212 °F)**

- **Temperature Max:** with this setting you determine the maximum temperature of the measuring range of the temperature sensor used.  
Note: This setting appears only if "System Mode" is set to "Cooling" and "Control Mode" is set to "P-Control" or "PI-Control".

Factory setting:     **60 °C (140 °F)**

Setting range:       **-50 ... 100 °C (-58 ... 212 °F)**

- **Signal Timeout:** This menu item only appears if the signal source is set to "Modbus", "BACnet" or "IoT". Information on this parameter can be found in the separate Modbus, BACnet or IoT addendum manual.

- **Enable Contact:** With this setting you determine whether the enable contact on the driver board is evaluated ("On") or ignored ("Off") by the control software.

Factory setting:     **On**

Options:             **On or Off**

### 5.3.3.3 Stage switching settings in the "Stage Switching" submenu



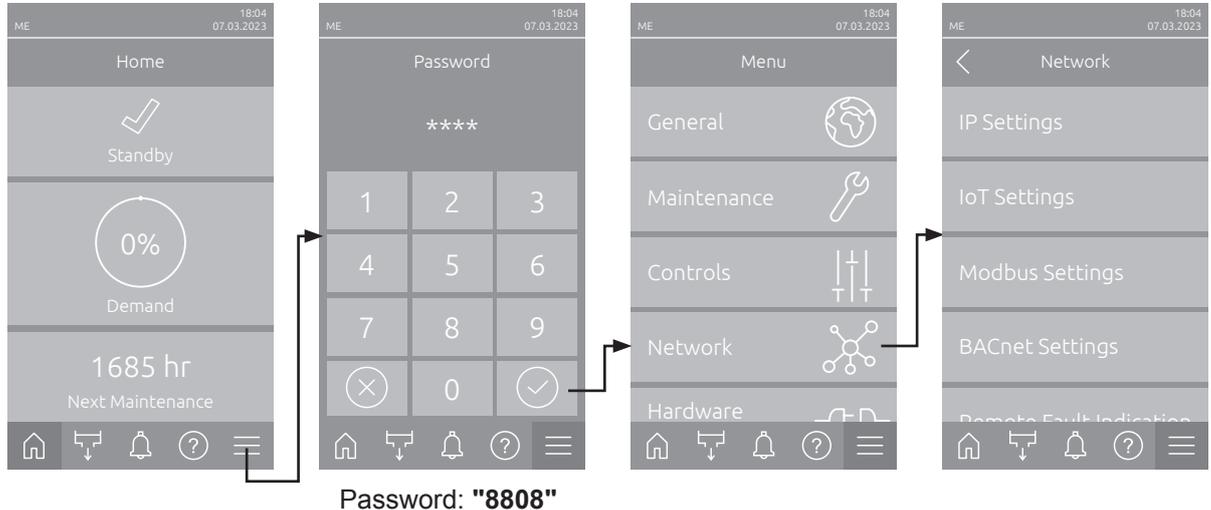
- **Threshold Hysteresis:** With this setting you determine the hysteresis for switching the stage pumps on and off.  
Factory setting: **2 %**  
Setting range: **1 ... 5 %**
- **Threshold 1:** With this setting you determine the set point at which the pump of stage 1 will switch on or off in % of the demand signal.  
Factory setting: **5%**  
Setting range: **3 ... 99 %**
- **Threshold 2:** With this setting you determine the set point at which the pump of stage 2 will switch on or off in % of the demand signal.  
Factory setting: **Varies with number of stages**  
Setting range: **3 ... 99 %**
- **Threshold 3:** With this setting you determine the set point at which the pump of stage 3 will switch on or off in % of the demand signal.  
Factory setting: **Varies with number of stages**  
Setting range: **3 ... 99 %**
- **Threshold 4:** With this setting you determine the set point at which the pump of stage 4 will switch on or off in % of the demand signal.  
Factory setting: **Varies with number of stages**  
Setting range: **3 ... 99 %**
- **Threshold 5:** With this setting you determine the set point at which the pump of stage 5 will switch on or off in % of the demand signal.  
Factory setting: **Varies with number of stages**  
Setting range: **3 ... 99 %**
- **Threshold 6:** With this setting you determine the set point at which the pump of stage 6 will switch on or off in % of the demand signal.  
Factory setting: **Varies with number of stages**  
Setting range: **3 ... 99 %**
- **Threshold 7:** With this setting you determine the set point at which the pump of stage 7 will switch on or off in % of the demand signal.  
Factory setting: **Varies with number of stages**  
Setting range: **3 ... 99 %**

### 5.3.4 Communication settings in the "Network" submenu

In the "Network" submenu you determine the parameters for digital communication protocols.

#### 5.3.4.1 Accessing the "Network" submenu

Access the "Network" submenu as shown below.



#### 5.3.4.2 Settings in the "IP Settings" submenu

The following network settings are used only for the communication via the integrated BACnet IP, Modbus TCP or IoT interface.

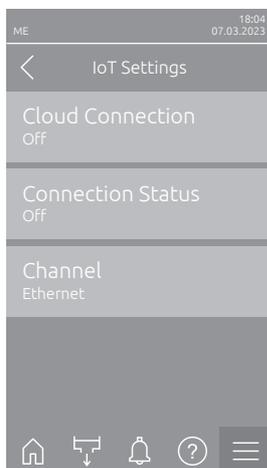


- **DHCP Mode:** with this setting you determine whether you want to assign the IP Address, the Subnet Mask, the Standard Gateway as well as the Primary and Secondary DNS address as fixed values or whether these should be dynamically assigned via a DHCP server.  
Note: If no address can be assigned via a DHCP server when "DHCP Mode" is set to "DHCP", an APIPA (Automatic Private IP Addressing) is automatically assigned. This is in the range from 169.254.1.0 to 169.254.254.255. The subnet mask is set to 255.255.0.0 and the standard gateway remains 0.0.0.0.  
Factory setting: **DHCP**  
Options: **DHCP** (dynamic assignment)  
**Fixed** (fixed assignment)
- **IP Address:** This field shows the actual IP address of Condair ME assigned manually or assigned by a DHCP server.  
If the parameter "DHCP Mode" is set to "Fixed", the IP address of Condair ME can be set via this field. If the parameter "DHCP Mode" is set to "DHCP", the IP address of Condair ME is assigned by a DHCP server.
- **Subnet Mask:** This field shows the actual subnet mask of the IP network assigned manually or assigned by a DHCP server.  
If the parameter "DHCP Mode" is set to "Fixed", the subnet mask can be set via this field. If the parameter "DHCP Mode" is set to "DHCP", the subnet mask is assigned by a DHCP server.

- **Default Gateway:** This field shows the actual IP address of the default gateway assigned manually or assigned by a DHCP server.  
If the parameter "DHCP Mode" is set to "Fixed", the IP address of the default gateway can be set via this field. If the parameter "DHCP Mode" is set to "DHCP", the IP address of the default gateway is assigned by a DHCP server.
- **Primary DNS:** This field shows the actual IP address of the primary domain name server (DNS) assigned manually or assigned by a DHCP server.  
If the parameter "DHCP Mode" is set to "Fixed", the IP address of the primary domain name server can be set via this field. If the parameter "DHCP Mode" is set to "DHCP", the IP address of the primary domain name server is assigned by a DHCP server.
- **Secondary DNS:** This field shows the actual IP address of the secondary domain name server (DNS) assigned manually or assigned by a DHCP server.  
If the parameter "DHCP Mode" is set to "Fixed", the IP address of the secondary domain name server can be set via this field. If the parameter "DHCP Mode" is set to "DHCP", the IP address of the secondary domain name server is assigned by a DHCP server.
- **MAC Address:** Factory set MAC Address (Media Access Control) of Condair ME. Not modifiable.
- **Host Name:** Host Name of Condair ME automatically generated by the control. Format: "IC\_ "+"Serial number of Condair ME". Not modifiable.

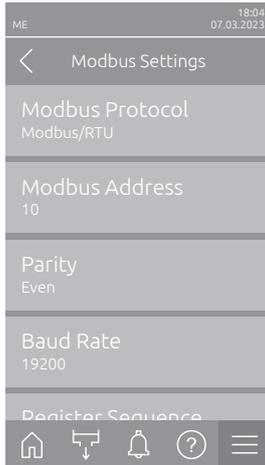
### 5.3.4.3 Settings in the "IoT Settings" submenu

The following settings are only required for communication via IoT.



- **Cloud Connection:** not yet available!
- **Connections Status:** not yet available!
- **Channel:** not yet available!

### 5.3.4.4 Settings in the "Modbus Settings" submenu



- **Modbus Protocol:** with this setting you can activate "**Modbus/RTU**" or "**Modbus/TCP**" communication via a Modbus network or deactivate ("Off") Modbus communication.  
Factory setting: **Modbus/RTU**  
Options: **Off, Modbus/RTU or Modbus/TCP**

**Important:** regarding the setting of the individual Modbus parameters as well as the wiring of the Condair ME for the Modbus communication, please observe the instructions in the separate Modbus addendum manual. This manual can be requested from your Condair representative.

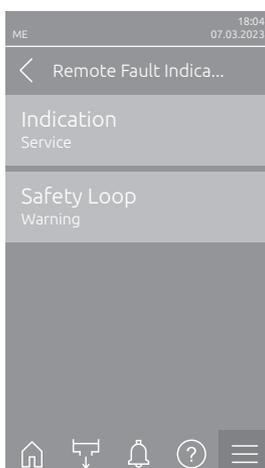
### 5.3.4.5 Settings in the "BACnet Settings" submenu



- **BACnet Protocol:** with this setting you can activate ("BACnet MS/TP" or "BACnet/IP") or deactivate ("Off") the communication via the integrated BACnet interfaces.  
Factory setting: **Off**  
Options: **Off** (BACnet interface deactivated)  
**MS/TP Master** (BACnet MS/TP Master via RS 485 interface)  
**MS/TP Slave** (BACnet MS/TP Slave via RS 485 interface)  
**BACnet/IP** (BACnet/IP via RJ45 interface)

**Important:** regarding the setting of the individual BACnet parameters as well as the wiring of the Condair ME for the BACnet IP or BACnet MS/TP communication, please observe the instructions in the separate BACnet addendum manual. This manual can be requested from your Condair representative.

### 5.3.4.6 Settings in the "Remote Fault Indication" submenu

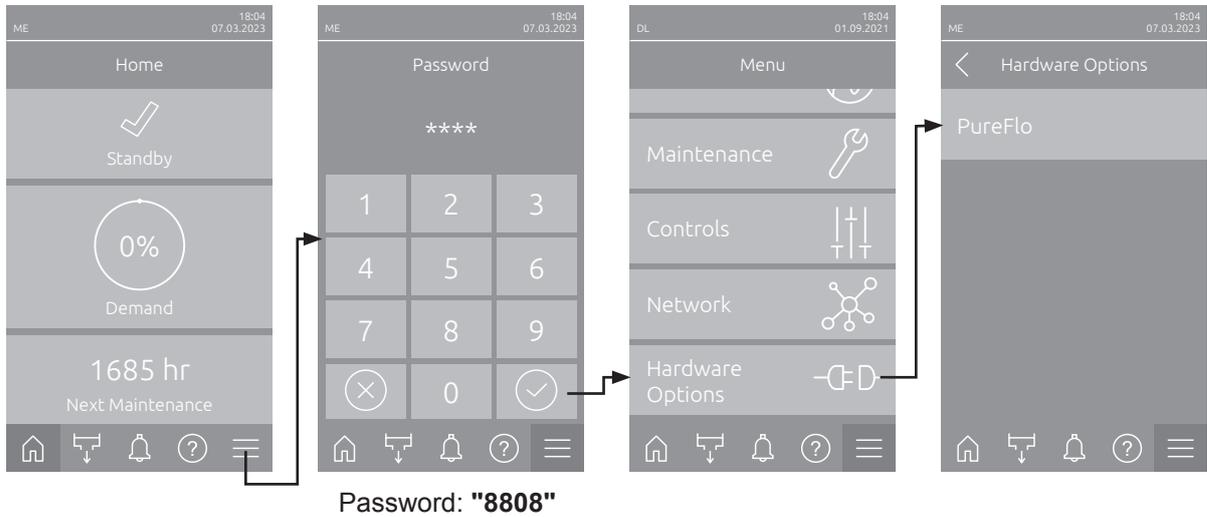


- **Indication:** With this setting you determine whether maintenance messages ("Service") only or all Warning messages ("Warning") are outputted via the service relay of the remote operating and fault indication board.  
Factory setting: **Service**  
Options: **Service or Warning**
- **Safety Loop:** With this setting you determine whether an Error ("Error") or a Warning ("Warning") is triggered when the external safety loop is open.  
Factory setting: **Warning**  
Options: **Warning or Error**

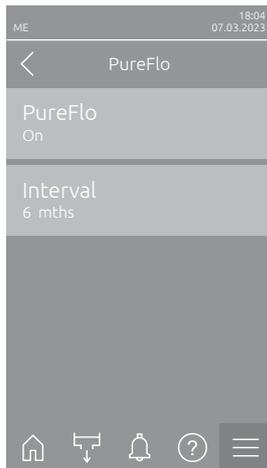
## 5.3.5 Settings and features in the "Hardware Options" submenu

### 5.3.5.1 Accessing the "Hardware Options" submenu

Access the "Hardware Options" submenu as shown below.



### 5.3.5.2 Settings in the "PureFlo" submenu



- **PureFlo:** with this setting you can activate ("On") the PureFlo option after it has been installed or deactivate the PureFlo option ("Off") if no PureFlo cartridge is installed.  
Factory setting: **Off**  
Options: **Off** (PureFlo option deactivated)  
**On** (PureFlo option activated)
- **Interval:** With this setting you determine the interval time for the replacement of the PureFlo cartridge.  
Note: This setting appears only if the "PureFlo" is activated ("On").  
Factory setting: **6 mths**  
Settings range: **1 ... 12 mths**

# 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 authorised by the owner**. It is the owner's responsibility to verify proper qualification of the personnel.

### General notes

The instructions and details for maintenance work must be followed and upheld. Only carry out the maintenance work described in this documentation.

The Condair ME Control must be maintained in the prescribed intervals, the cleaning work must be carried out correctly.

For safety and warranty reasons, only use original spare parts from your Condair representative to replace defective parts or parts which have elapsed their lifetime.

### Safety and hygiene

Some maintenance work requires removal of the unit cover. Please note the following:



**DANGER!**  
Danger of electric hazard!

**Before carrying out any maintenance work take the Condair ME Control out of operation as described in [Section 4.6](#) and secure the system against inadvertent power-up.** In addition take AHU out of operation as described in the operation instructions of the AHU and secure the AHU against inadvertent power-up.



**CAUTION!**

The electronic components inside the control unit are very sensitive to electrostatic discharge.

**Prevention:** Before carrying out any maintenance work to the electrical or electronic equipment of the control unit, appropriate measures must be taken to protect the respective components against damage caused by electrostatic discharge (ESD protection).



**DANGER!**  
Health risk by inadequate maintenance!

**Inadequately operated and/or poorly maintained adiabatic humidification/cooling systems may endanger health. When inadequately operated and/or poorly maintained, micro-organisms (including the bacterium which causes Legionnaire's disease) may grow in the water system and in the area of the humidification unit and may affect the air in the AHU/air duct.**

**Prevention:** the adiabatic air humidification /air cooling system Condair ME must be correctly operated as described in [Section 4](#), and must be correctly maintained and cleaned in the prescribed intervals as described in [Section 6](#).



## DANGER!

Damaged systems / components may present a danger to life, or cause damage to material assets. We advise that the customer routinely checks the system and components for damage. It is particularly important that the tank, structural components, and fixings (such as studs) are inspected as damage to these items could affect the structural integrity of the system. Please contact your local Condair representative immediately in the event of discovering damaged components.

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## 6.2 Maintenance intervals

In order to maintain operational safety and hygienic demands the Condair ME Control must be serviced at regular intervals. The time interval for the complete system service is to be adapted to the operating conditions. The hygiene status depends mainly on the quality of the humidifier water but also on the adherence to the exchange intervals of the upstream air filter, the air velocity and the micro-biological and chemical composition of the supply air. Therefore the service intervals must be determined for each system separately.

The interval time for a complete system service is to be determined at commissioning. The default is **2000 hours of operation**.

Depending on the encountered hygiene status when performing a complete system service the interval time must be decreased or increased.

**In any case the Condair ME Control system should receive a complete service at least once annually.**

Note: We recommend to perform a minor service between two complete system service.

The interval time for complete system service can be programmed on the control unit. To determine the interval time for a complete system service the above described procedure can be used. As soon as the maintenance time has elapsed, a maintenance message is displayed to draw your attention to the pending service.

## 6.3 Maintenance guide

The Condair ME unit will form part of your hot and cold water system and as such require you to undertake certain duties with regards to local regulations and bylaws concerning the control of Legionella microbes in water systems. Your water sampling / testing and disinfection regime must be based on results of a site specific risk assessment.

If any further assistance is required or you are interested in a planned maintenance quote, please contact your Condair distributor.

Note: routine water sampling and testing is not included as part of a Condair service contract.

Please note that the information given in the table below is only to act as a guide which shows the work to be carried out on "Minor Service" and "Complete System Service".

Correct maintenance is vital to ensure optimum output, reliability and safety.

<b>Operations</b>	<b>Minor Service</b>	<b>Complete System Service</b>
Replace inlet water filter if applicable	Yes	Yes
Check cartridge of PureFlo system (if applicable)	Yes	Yes
Replace cartridge of PureFlo system (if applicable)	—	Yes
Check inlet valve	Yes	Yes
Clean inlet valve	—	Yes
Replace inlet flow restrictor	—	Yes
Check all hoses and connectors	Yes	Yes
Clean inlet valve strainer	—	Yes
Replace all distribution hoses	—	Yes
Check distribution headers	Yes	Yes
Clean distribution headers	—	Yes
Clean pumps & pump housings	—	Yes
Clean front section of tank	Yes	Yes
Clean internal of hydraulic module (use soft cloth only)	Yes	Yes
Check operation of level float and conductivity sensor (if applicable)	Yes	Yes
Clean level float and conductivity sensor (if applicable)	—	Yes
Check droplet separator (if applicable) and evaporator cassettes in suitable condition	Yes	Yes
Lightly brush evaporator cassettes if necessary, replace if heavily soiled	—	Yes
Remove evaporator cassettes and clean all sections of tank and frame structure	—	Yes
Check and secure frame structure and seal	—	Yes
Run unit and check for correct water level	Yes	Yes
Check all media for full saturation	Yes	Yes
Check drain pump operation and correct flow	Yes	Yes
Check operation of all distribution pumps	Yes	Yes
Measure flow rates to distribution headers	—	Yes
Check water temperature and conductivity is within calibration	Yes	Yes
Check and secure all electrical connections	Yes	Yes
Check overall installation for leaks and damage	Yes	Yes
Check software settings	Yes	Yes
Check operation of submerged UV lamps (if applicable)	Yes	Yes
Replace UV lamps (if applicable)	—	Yes
Check any options as per relevant documentation	Yes	Yes
Complete disinfection as described in this manual	Yes	Yes
Check safety interlock and humidity/temperature control devices	—	Yes
Check air velocity at face of evaporative cassettes matrix	—	Yes
Reset all appropriate maintenance counters	Yes	Yes
Update service log book	Yes	Yes
Add disinfection chemical (according to tank volume)	Yes	Yes
Replace pump rotors (impellers)	10,000 Operating Hours	

## 6.4 Dismantling and installation of components for maintenance



A full risk assessment must be completed by suitably trained personnel prior to carrying out maintenance of the ME unit. There may be increased risk when carrying out maintenance on systems that necessitate working at height.

The following risks should be considered (this list is not exhaustive, and there may be additional site specific risks that will need to be considered):

- Manual handling
- Musculoskeletal disorders
- Electrical work
- Working at height
- Falling objects & objects dropped from higher levels
- Risks arising from the use of Mobile Elevated Work Platforms
- Risk of contact with ceilings, overhead items or asbestos roofing while using access equipment
- Adverse weather conditions
- Unsuitable surface and ground
- Other equipment, machinery or supply pipework in the vicinity of the work area

Maintenance of the ME unit must only be carried out by trained personnel, and all tools & equipment must be checked by a skilled and competent health & safety representative.



In the event of water carry-over from the evaporative cassettes or a water leak, surfaces near the ME system may have become wet. This could result in a slipping hazard or an increased risk when handling components. If this occurs, risk assess the situation and take suitable precautions before working on the ME system. If carry-over was the cause of any standing water in the AHU/duct, follow the advice in [Section 7.4](#) to remedy the problem.

## 6.4.1 Dismantling and installation of the evaporative module

1. Take the Condair ME Control out of operation as described in [Section 4.6](#) and allow to drain and dry.
2. Switch the AHU off, and isolate the power and water supply to the AHU.
3. Disconnect distribution hoses from the connectors on the distribution heads, the wall feed-throughs (if applicable) and the hydraulic module.
4. Remove droplet separator boxes (column by column):
  - Remove upper separator brackets.
  - Remove bank of separator boxes.
  - Remove lower separator brackets.
5. Remove distribution headers assemblies from topmost evaporative cassettes:
  - Undo the clamps fixing the distribution header assembly to the evaporative cassette.
  - Carefully lift off the distribution header assembly.
6. Remove evaporative cassettes (column by column):
  - Push box upwards and remove.
7. Remove optional UV lamp (if applicable).
8. Remove the cross bar (remember position).

Clean dismantled components, water tank, frame structure, blanking plates and air duct as described in [Section 6.3](#). If all components have been cleaned and dried, assemble the evaporative module in the reverse dismantling order. Replace any defective components with new ones.

## 6.5 Consumables guide

### Common consumables

Description	Standard Frequency (month)
Disinfection chemical (sourced locally)	1
Descaling chemical (sourced locally)	as required
Inlet flow restrictors	24
Distribution header feed hose	24
Evaporative matrix cassette	
– Wholesome mains water	36 - 60
– RO water	60 - 84 +
Replace pump rotors (impellers)	10,000 Operating Hours

### Option consumables

Description	Standard Frequency (month)
PureFlo sediment filter	6
PureFlo antimicrobial filter	6
UV lamp kit	12

Contact your Condair distributor for consumables list/order codes.

To help us ensure that the correct spares parts are sent, please confirm your unit serial and model number with your order.

## 6.6 Health and safety requirements

In accordance with local regulations, users must take water samples for Legionella analysis. Samples should be taken from the same places as described in [Section 6.7](#), and the analysis carried out by an accredited laboratory which is part of an appropriately certified Legionella testing scheme. In the event that the Legionella content exceeds 100 cfu/l, the humidifier should be switched off and specialist advice sought regarding its disinfection.

1. If biofilm (a slimy or gel-like deposit when wet, which might be dry and crisp in a dry system) is found during any inspection of the humidifier or water system, the humidifier **MUST** be switched off and not put back into operation until the system has been taken apart, scrubbed and thoroughly cleaned with a suitable biocide with biofilm penetrating qualities such as 50 ppm chlorine dioxide solution. This work should only be carried out by fully trained specialist organisations or individuals.
2. The **control unit of the Condair ME Control must be left powered on to allow automatic flushing and cleaning cycles to occur**. If the control unit Condair ME Control is powered off for prolonged periods, water stagnation might occur and contamination result, so the system, including any storage tanks or vessels should be drained and left dry. Before putting the system back into service, the water pipework supplying the Condair ME Control should be purged carefully, avoiding the creation of aerosols by splashing, and a water sample should be taken to ensure cleanliness. In the event that the humidifier pipework contains any residual water or has remained damp, and the temperature exceeded 20 °C (68°F), the Condair ME Control should be disinfected using an appropriate solution.

Contact your Condair representative for advice on water sampling and analysis, disinfection of systems, service and maintenance.

## 6.7 Routine water sampling and testing

### Hygiene

Your attention is drawn to local regulations and bylaws regarding the control of Legionellosis in water systems. If inadequately maintained, water systems, of which any humidifier is a part, can support the growth of micro-organisms, including the bacterium that causes Legionnaires' disease. Condair Group AG has considered all aspects of this equipment to reduce as far as possible the risk of Legionnaires' disease and other similar conditions, but it is important that users are aware of their responsibilities under local regulations in reducing the risk of Legionellosis.

To prevent the growth of Legionella, users are required to:

1. Carry out a risk assessment of the water system using a competent person, and implement an appropriate monitoring and control regime.
2. Avoid water temperatures which favour the growth of Legionella.
3. Avoid water stagnation.
4. Clean and disinfect the system in accordance with local regulations and bylaws, and the instructions in this manual.
5. The Condair ME Control system **must be connected to a clean, wholesome mains water supply** and it is recommended that the supply water is chlorinated. It is the responsibility of the user to ensure that the water system complies with local regulations and bylaws, particularly those for the control of Legionella microbes. The use of mains water fed tanks and reservoirs is only permitted as part of a managed water treatment system.

On commissioning and at regular intervals thereafter, test for possible water contamination using dipslides. Take samples from the water supply, the evaporative cassettes and from the tank. Check for biofilm.

The dipslides should be incubated for 2 days at 30°C (86°F).

1. If the microbial count from the tank exceeds 10<sup>3</sup> cfu/ml, the system should be turned off, any biofilm scrubbed clean and then disinfected using a 50 ppm chlorine solution for one hour before being put back into use.
2. If the microbial count in the water supply to the evaporative module exceeds 10<sup>3</sup> cfu/ml, this suggests contamination of the water system within the building. The system should be turned off and you should seek specialist advice on cleaning your water supply.
3. If the water temperature anywhere in the system regularly exceeds 20°C, (68°F) increase the frequency of water sampling. The frequency may be reduced if successive tests show a consistent level below 10<sup>3</sup> cfu/ml.

## 6.8 Cleaning and disinfection

### Before commencing cleaning and disinfection:

At initial commissioning we recommend the use of a mild disinfection solution, which should be placed in the tank and circulated around the system.

Note: Start disinfection process always with the "Manual Disinfection Start" function under "Menu > Engineering password > Maintenance > Manual Disinfection", to prevent the Condair ME Control draining the water tank during the disinfection process.

For systems in operation or where the water quality or air quality is poor, it is recommended to dismantle and scrub the system clean, to carry out a disinfection with a minimum of 50ppm chlorine or an appropriate disinfection solution circulated for 1 hour minimum (or the time recommended by the disinfectant manufacturer if not using chlorine). Please refer to the cleaning and disinfection and method statement section to ensure that the relevant chemicals, equipment and Personal Protective Equipment are available to carry out disinfection.

1. **A qualified person appointed by the customer must risk assess the cleaning and disinfection operation.** This assessment should include but is not limited to observance of local regulations and the use of PPE, working from heights and ensuring a full understanding of the Condair ME Control.
2. Coordinate with relevant responsible persons.
3. Check records (i.e sample results of microbiological control) for system history.
4. If possible, disinfection should be carried out when the building is unoccupied, with air flow off.

Evaporative humidifiers must be regularly cleaned and maintained, to prevent contamination especially in industrial environments.

All surfaces requiring disinfection or cleaning must be in contact with the appropriate concentration of disinfection solution for the correct contact period. The method statement for disinfection may need to be adapted depending on the layout of the humidifier pipework. Additional procedures will be required for supply water system pipework or water treatment systems prior to the humidifier.

Condair Group AG recommends that routine disinfection should take place in the following situations:

- At initial commissioning (for brand new systems use a mild disinfection chemical).
- At six monthly intervals as part of the maintenance regime.
- If the system or part of it has been shutdown and/or substantially altered creating a risk of contamination.
- During or following any increase of bacterial activity (as per recommendations in [Section 6.7](#)) or outbreak or suspected outbreak of Legionellosis.

### Recommended disinfection equipment

- Disinfection solution in accordance with manufacturers guidelines.
- Disinfection neutraliser (only if necessary).
- Disinfection solution test kit (to measure strength).
- Bucket of fresh water.
- Cleaning equipment.
- Mixing vessel / Measuring container.
- Risk assessment / test record sheets. Appropriate report/record
- Standard tools
- Appropriate PPE
- COSHH risk assessment / MSDS

## 6.9 Cleaning and disinfection method statement



### WARNING!

Disinfectants can be corrosive, toxic or irritant. Use of disinfectants may present a risk to health and could harm the environment.

#### Step 1 - Refer to the cleaning and disinfection risk assessment

- If the unit is already in operation, check for correct operation.
- Ensure the Condair ME system and the AHU are OFF and isolated.
- If the system has been without power for more than 48 hours, flush the water supply.
- Ensure the area is well ventilated.
- Refer to the manufacturers instructions and safety advice for chosen disinfectant.
- If there are concerns over the level of biofilm or bacteria in the system, disinfect the tank before starting cleaning work.
- **Scrub tank fully.** For more thorough disinfection remove droplet separator banks (if applicable) and the evaporative cassettes to allow better access to the tank (refer to maintenance section)
- **Scrub hydraulic module inside fully.** Also scrub inside the pump housings, clean the pump impellers, clean the level sensor, and clean the optional conductivity probe. Take care not to damage the level sensor or conductivity probe.
- Consider appropriate maintenance requirements at this time including parts replacement i.e. replacing distribution hoses to ensure that these are also disinfected.
- Re-assemble the Condair ME system (refer to installation manual).

#### Step 2 - Mix disinfection solution

- Mix disinfection solution following the manufacturers instructions. Recommended 50ppm Chlorine solution circulated for 1 hour minimum or appropriate time. NB: For larger or particularly unclean systems this process may need to be repeated.
- Calculate the total water volume of the system.
- **Note:** Solution loses strength over time and the solution may need to be increased through the process or the disinfection process may need to be repeated.

#### Step 3 - Run the unit

- Switch the control unit on.
- Send a demand to the unit to make it fill and start running (the demand signal can be overridden for the duration of the disinfection using the "Manual Disinfection Demand" function under "Menu > Engineering password > Maintenance > Manual Disinfection").
- Set the duration of the disinfection period using the "Manual Disinfection Duration" function under "Menu > Engineering password > Maintenance > Manual Disinfection". Ensure the disinfection period leaves sufficient time to neutralise the disinfectant if required.
- Start disinfection process with the "Manual Disinfection Start" function under "Menu > Engineering password > Maintenance > Manual Disinfection", to prevent the Condair ME Control draining the water tank during the disinfection process.
- Check that the evaporative cassettes become fully saturated, and the system is operating correctly.

**Step 4 - Add disinfection solution**

- Add the disinfection solution to the water tank and allow to flow through the evaporative cassettes.
- Measure the strength of the disinfection solution and check it is the correct strength in accordance with manufacturers guidelines.
- Note the strengths of the disinfection solution at 15 minute intervals and record on a record appropriately.
- Adjust solution strength as required.

**Step 5 - Circulate disinfection solution**

- Check all surfaces are wetted for desired time and correct solution.

**Step 6 - Neutralise the disinfection solution – if required based on chemical used****WARNING!**

If a neutralising solution is required, always ensure that the neutralising solution is used in accordance with the manufacturer's guidance. Failure to follow the manufacturer's guidance with regard to neutralising the disinfection chemical may present a risk to health.

- Mix neutralising agent as manufacturers instructions.
- Allow the neutralising agent to disperse over the matrix and circulate in the tank.
- Drain and measure the strength as per MSDS until the disinfection solution is down to desired strength.

**Step 7 - Drain the unit into foul drain**

- Turn Off any fill cycle.
- Drain unit until empty into appropriate drain (depending on Risk Assessment) and rinse the tank if necessary.
- Fill and drain unit including flushing over the evaporative cassettes and test to ensure that the chemical is removed to the appropriate level.
- Wipe tank clean.
- Where required, reset to original setting and put unit back into operation. Test for correct operation as per commissioning section of the manufacturers manual.
- Check for and complete maintenance requirements as per manufacturers instructions.
- Add a mild disinfectant chemical to the tank.
- Always leave work area clean, dry and tidy.

**Step 8 - Re-start the Condair ME system**

- Refer to the commissioning section of this manual.

If in doubt always contact your Condair distributor.



## 6.11 Performing a software update

To update the control software of the Condair ME or the firmware of one of its electronic boards, proceed as follows:

1. Set the **<On/Off>** switch on the right side of the control unit to the Off position, then switch off the voltage supply to the control unit via the external electrical isolator and secure switch in the Off position to prevent it from inadvertent power up.
2. Unlock the front cover of the control unit and remove it.
3. Open control unit inner swing door.
4. Carefully insert FAT32 formatted USB stick containing the corresponding control software update into the USB port on the control board. Make sure that the maximum length of the USB stick does not exceed 75 mm (3").

**Note:** In order to update the control software a USB stick with a valid software update (the update file must be on the highest level outside of any folder) must be connected to the USB port on the control board. Otherwise, an appropriate error message appears when starting the software update.

5. Close control unit inner swing door, then relocate the front cover of the control unit and lock it with the screw.
6. Remove the lock and tag from the external electrical isolator. Then, switch on external electrical isolator to restore power to the control unit.
7. Set the **<On/Off>** switch on the right side of the control unit to the On position.
8. When the home screen appears, select the **<Menu>** button, then enter the password (8808) to login.
9. Select the function "Update" (Path: "Menu > Password. 8808 > Maintenance > Update". See also [Section 5.3.2.3](#)).
10. The software update confirmation screen appears. Press the **<Continue>** button.
11. An information window appears after a few minutes with information on the software update. Press the **<Reboot>** button to start the software update.

The update starts. During the update, the display is inactive and the LED is flashing blue. If the update has completed the control unit returns to the home screen.



### CAUTION!

Do not interrupt a software update once it has started. Wait until updating is completed. A corrupted control software can render the control unit unusable.

**Note:** If software update is accidentally interrupted, the control unit will not operate, but the software update can be resumed by leaving the USB key inserted in the control board and power cycling the control unit. The integrated controller will detect the control software was not properly installed and restart the update.

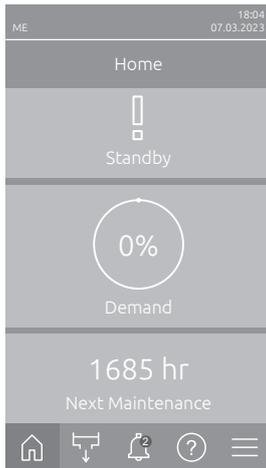
12. Repeat steps 1 to 3, then carefully remove the USB stick.
13. Close control unit inner swing door, then relocate the front cover of the control unit and lock it with the screw.
14. Repeat Step 6 and 7 to power up the control unit.

# 7 Fault elimination

## 7.1 Fault indication

Malfunctions during operation detected by the control software are indicated by a corresponding **Warning** message (Status LED lights up yellow and the exclamation mark symbol is displayed in the device and error status field of the home screen) or **Error** message (Status LED lights up red and the cross symbol is displayed in the device and error status field of the home screen).

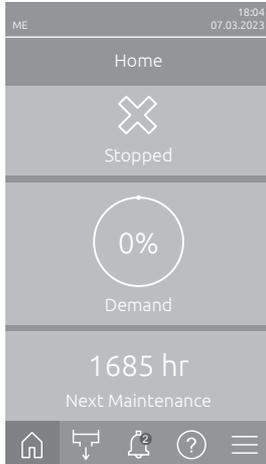
### Warning



Temporary problems (e.g., water supply interrupted for a short time) or malfunctions which cannot cause damage to the system are indicated with a warning message, additionally the status LED lights up yellow. **If the cause of the malfunction disappears of its own accord within a certain period of time, the warning message will automatically switch off otherwise an error message is triggered.**

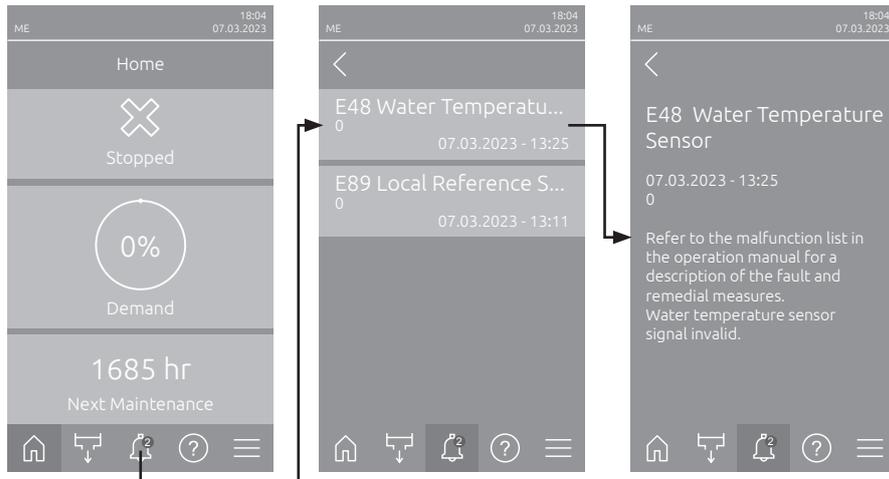
Note: Warnings can be indicated also via the service relay of the remote operating and fault indication. Therefore the warning indication via the service relay must be activated in the "Network" submenu of the control software (see [Section 5.3.4.6](#)).

### Error



Malfunctions where further operation is not possible any longer or malfunctions which can damage the system are indicated with an error message, additionally the status LED lights up red. If such a malfunction occurs the operation of the system is limited only, or the system will be **stopped automatically**.

By pressing on the <Malfunction> button in the home screen the error list shown with all active warning and error messages. By pressing on the corresponding Warning or Error entry additional information regarding the malfunction are displayed (see display on the far right).



## 7.2 Malfunction list

**Important!** Most operational malfunctions are not caused by faulty equipment but rather by improper installation or disregarding of planning guidelines. Therefore, a complete fault diagnosis always involves a thorough examination of the entire system. Often, the installation of the evaporative module has not been properly executed, or the fault lies with the humidity/temperature control system.

Note: Remedial measures highlighted in gray in the malfunction list may only be remedied by a Condair service technician or a service center authorized by Condair. If applicable, contact your Condair representative.

Code		Message	Information	
Warning	Fault		Possible causes	Remedy
W01	—	Smartcard	No communication with Smartcard. No Smartcard installed. Smartcard not valid or defective.	Contact your Condair representative.
—	E10	Controller Reset	The control unit (Integrated Controller) has been automatically restarted due to a software problem. The control unit (Integrated Controller) has been automatically restarted due to a software problem	Contact your Condair representative if this problem regularly occurs.
—	E15	Program Fault	The Countdown timer has expired. Countdown Password must be entered.	Contact your Condair representative.
—	E18	Air Temperature Sensor	The incoming air temperature signal of the optional freeze detection sensor is invalid. The Condair ME Control stopped operation. Note: If – at any time – the temperature signal reading is correct again, the system will continue with normal operation. Sensor wiring broken or sensor defective Sensor not connected	Contact your Condair representative.

Code		Message	Information	
Warning	Fault		Possible causes	Remedy
—	E19	Freeze Protection	The temperature of the incoming air fell below the preset limit of the optional freeze detection. The Condair ME stopped operating. Note: If – at any time – the air temperature of the incoming air rises above the limit value again, the system will continue with normal operation.	
			Temperature too low for safe operation of the Condair ME Control	No remedy
			Temperature limit set wrong	Contact your Condair representative.
W20	E20	Safety Loop	External safety loop is open (e.g. ventilation Interlock, high limit humidistat, etc.). The Condair ME Control stopped operating. Note: If – at any time – the safety loop is closed again, the system will continue with normal operation.	
			Ventilation interlock open.	If applicable, check/turn on ventilation system.
			Air flow monitor triggered.	Check ventilator/filter of the ventilation system.
			Safety humidistat triggered.	Wait. If applicable, check safety humidistat
W21	—	High Water	Water overflow detected. Current operation status not affected. Note: If – at any time – the normal operating water level is reached, the system will continue with normal operation.	
			Inlet valve blocked in open position or defective.	Contact your Condair representative.
			Gravity drain valve blocked in closed position.	
			Drain piping/drain trap clogged.	Check/Clean drain piping and drain trap.
			Backpressure in drain trap.	Check drain trap venting to duct.
			Assisted drain function not activated.	Contact your Condair representative.
—	E22	Water Missing	Maximum filling time of the water tank exceeded. The Condair ME Control stopped operation. The Condair ME Control periodically tries to fill the tank. Note: If – at any time – the required water level is reached, the system will continue with normal operation.	
			Water supply blocked: shut-off valve closed/clogged, water pressure too low.	Check water supply (filter, pipes, etc.), Check/open shut-off valve, Check water pressure.
			Water pressure too low.	Check water supply system.
			Water treatment unit (fully demineralised water) is regenerating.	Wait.
			Inlet valve blocked or defective.	Contact your Condair representative.
			Gravity drain valve open, blocked in open position or not electrically connected (currentless open).	
			Leakage in the water drain system.	Check/seal water drain system.
—	E24	Overcurrent	The measured pump current has exceeded the limit value of the max pump current. The Condair ME Control will continue to attempt normal operation. The fault message must be reset after elimination of malfunction.	
			Pump(s) defective.	Contact your Condair representative.
			Pump(s) are running during measurement.	
W28	E28	Maintenance	The maintenance interval of the system maintenance has elapsed. If the system maintenance is not performed and the maintenance message is not reset within one week after the maintenance warning message has been triggered an error message is triggered!	
			System service is due.	Contact your Condair representative.

Code		Message	Information	
Warning	Fault		Possible causes	Remedy
W29	E29	UV Maintenance	The UV maintenance interval (replacement of UV lamp) has elapsed. If the UV lamp is not replaced and the UV service counter is not reset within 30 days a fault message is triggered!	
			Lifetime of UV lamp(s) (option) expired.	Replace UV lamp(s) and reset UV service counter.
—	E30	No UV Lamp	No UV lamp detected. Depending on the configuration of the "Shut Down" function (Engineering level) the Condair ME Control stops or continues operation. The fault message must be reset after elimination of malfunction.	
			UV lamp defective	Contact your Condair representative.
			UV lamp not wired or wiring broken.	
—	E31	UV Lamp Overcurrent	Current consumption of UV lamp(s) too high. Depending on the configuration of the "Shut Down" function (Engineering level) the Condair ME Control stops or continues operation. The fault message must be reset after elimination of malfunction.	
			UV lamp broken.	Contact your Condair representative.
			Short circuit on UV option.	
—	E32	Demand Sensor	Demand signal invalid. Condair ME Control automatically stopped operation. Note: If – at any time – the reading of the demand signal is correct again, the system will continue with normal operation.	
			Sensor not connected.	Contact your Condair representative.
			Incorrect sensor configuration.	
			Sensor defective.	
W35	—	Signal Timeout	The network (Modbus, BACnet, LonWorks) has stopped sending humidity/demand updates.	
			Signal cable from network not connected correctly or defective.	Contact your Condair representative.
			Interfering signal present.	
			Address conflict with other units in the network.	Correctly set unit addresses.
W44	E44	Water Temperature	Supply water temperature has exceeded the limit value. Condair ME Control stops operation and triggers an error message, if the water temperature does not drop below the limit value after several dilution cycles. The fault message must be reset after elimination of malfunction.	
			Standing Water in inlet system.	Check water supply system.
			Insufficient thermal insulation of inlet pipework.	Insulate supply water pipe.
			Water temperature limit set too low.	Check/adjust water temperature limit.
			Temperature sensor of conductivity sensor configured incorrectly.	Contact your Condair representative.
W45	E45	Water Conductivity	The conductivity of the supply water has exceeded the limit value. The Condair ME Control switched to "Fill Cycle Dilution" mode and triggers an error message, if the water conductivity does not drop below the limit value after several dilution cycles. The Condair ME Control will continue normal operation. The fault message must be reset after elimination of malfunction.	
			Water treatment defective/needs service.	Check/service water treatment system.
			Conductivity limit set too low.	Check/adjust Conductivity limit.
			Conductivity sensor configured incorrectly.	Contact your Condair representative.
			Conductivity sensor defective.	

Code		Message	Information	
Warning	Fault		Possible causes	Remedy
—	E46	<b>Water Drain Timeout</b>	Max. Drain Time exceeded. The Condair ME Control stopped operation. Note: If – at any time – the drain level is reached again, the system will continue with normal operation.	
			Drain pump blocked/defective.	Contact your Condair representative.
			Drain piping or drain trap clogged.	Check/clean drain piping and drain trap.
			Level sensor stucked or short circuited.	Contact your Condair representative.
			Backpressure in drain pipe.	Check drain pipe venting.
—	E47	<b>Level Sensor</b>	Water level sensor signal invalid. The Condair ME Control stopped operation. Note: If – at any time – the reading of the level sensor is correct again, the system will continue with normal operation.	
			Level sensor not connected.	Contact your Condair representative.
			Level sensor defective.	
—	E48	<b>Water Temperature Sensor</b>	Water temperature sensor signal invalid. Condair ME Control changed to "Fill Cycle" dilution mode. The fault message must be reset after elimination of malfunction.	
			Water temperature sensor not connected.	Contact your Condair representative.
			Incorrect water temperature sensor configuration.	
			Water temperature sensor defective.	
W49	—	<b>Matrix Wash Over</b>	Matrix wash has to be executed. Note: After installation of new evaporative cassettes a wash over procedure needs to be carried out. The wash over is mandatory for evaporative cassettes with glass fibre as evaporator media.	
			Condair ME Control is commissioned first time.	Evaporative cassettes matrix must be washed over with the Matrix wash over function in the "Manual Functions" submenu.
W51	E51	<b>Level Disinfection Tank</b>	Level of the disinfectant in the tank is too low. After a preset time the warning becomes an error. Current operation status not affected.	
			Liquid used up during normal operation.	Refill liquid.
			Incorrect floater connection.	Contact your Condair representative.
			Floater defective.	
—	E54	<b>Leak Monitoring</b>	Leak of water detected. Standing water outside the tank detected. The Condair ME Control stopped operation.	
			Water leakage on evaporative module or water piping inside the duct.	Check system and seal any leaky components.
W57	—	<b>Activation Code</b>	Activation code has to be entered. Normal operation not possible.	
			Activation code not yet entered.	Enter activation code.
—	E70	<b>Water Conductivity Sensor</b>	Invalid signal from conductivity sensor. Condair ME Control switched to "Fill Cycle" dilution mode. The fault message must be reset after elimination of malfunction.	
			Conductivity sensor disconnected or connecting cable interrupted.	Contact your Condair representative.
			Conductivity monitoring wrong configured.	
			Conductivity board defective	
—	E74	<b>Keep Alive</b>	Communication between control board and driver board interrupted.	
			Driver board not connected.	Contact your Condair representative.
			Wrong driver board installed.	
			Driver board defective.	
—	E80	<b>USB Data Logger</b>	USB data logger fault.	
			USB data logger not connected or defective.	Check/replace USB data logger.

Code		Message	Information	
Warning	Fault		Possible causes	Remedy
—	E82	Driver Missing	Communication with driver board interrupted. Condair ME Control automatically stopped operation. The fault message must be reset after elimination of malfunction.	
			RS485 Bus to driver board interrupted.	Contact your Condair representative.
—	E83	Slave Address	Slave address changed during operation. Condair ME Control automatically stopped operation. The fault message must be reset after elimination of malfunction.	
			Wrong driver address.	Check that each driver board connected to one controller has a different address.
—	E84	Driver Defective	Unknown fault on driver board. Condair ME Control automatically stopped operation. The fault message must be reset after elimination of malfunction.	
			Driver board defective.	Contact your Condair representative.
—	E85	Driver ID Wrong	Driver board ID wrong. Condair ME Control automatically stopped operation. The fault message must be reset after elimination of malfunction.	
			Wrong driver board connected or SAB address wrong.	Contact your Condair representative.
—	E86	Driver Incompatible	Wrong version of driver board. Condair ME Control automatically stopped operation. The fault message must be reset after elimination of malfunction.	
			Wrong version of driver board.	Contact your Condair representative.
—	E87	Local 24V Supply	Local 24V supply out of valid range! Condair ME Control automatically stopped operation. The fault message must be reset after elimination of malfunction.	
			Short circuit on supply module or supply module defective.	Contact your Condair representative.
—	E88	Local 5V Supply	Local 5V supply out of valid range! Condair ME Control automatically stopped operation. The fault message must be reset after elimination of malfunction.	
			Short circuit on supply module or supply module defective.	Contact your Condair representative.
—	E89	Local Reference Supply	Local reference voltage out of valid range! Condair ME Control automatically stopped operation. The fault message must be reset after elimination of malfunction.	
			DC supply faulty or supply line interrupted.	Contact your Condair representative.
—	E96	Peripheral 5V Supply	Peripheral 5V supply out of valid range! Condair ME Control automatically stopped operation. The fault message must be reset after elimination of malfunction.	
			5V supply interrupted.	Contact your Condair representative.
			Fuse "F2" on the driver board defective.	
			Overload on external connection.	
—	E100	Y1	Fault on inlet valve Y1.	
			Inlet valve not connected or coil defective.	Contact your Condair representative. Replace distribution board.
			Distribution board defective.	
—	E101	Y2	Fault on drain valve Y2.	
			Inlet valve not connected or coil defective.	Contact your Condair representative. Replace distribution board.
			Distribution board defective.	
W102	E102	Level WET Tank	Level of WET tank too low. After a preset time the warning becomes an error. Current operation status not affected.	
			Liquid used up during normal operation.	Refill liquid.
			Incorrect floater connection.	Contact your Condair representative.
			Floater defective.	

Code		Message	Information																																						
Warning	Fault		Possible causes	Remedy																																					
	E103-E107 E111 E113	Y5-Y9 Y4 Y3	Fault on corresponding stage pump (stage pump 1 to 7). Assignment of the stage pumps see following tables:  One hydraulic module with 2 - 5 pumps <table border="1"> <tr> <td>Y5</td> <td>Y6</td> <td>Y7</td> <td>Y8</td> <td>Y9</td> </tr> <tr> <td>Pump 1</td> <td>Pump 2</td> <td>Pump 3</td> <td>Pump 4</td> <td>Pump 5</td> </tr> </table> Two hydraulic modules with 6 pumps <table border="1"> <tr> <td>Y9</td> <td>Y7</td> <td>Y8</td> <td>Y5</td> <td>Y3</td> <td>Y6</td> </tr> <tr> <td>Pump 1</td> <td>Pump 2</td> <td>Pump 3</td> <td>Pump 4</td> <td>Pump 5</td> <td>Pump 6</td> </tr> </table> Two hydraulic modules with 7 pumps <table border="1"> <tr> <td>Y4</td> <td>Y7</td> <td>Y9</td> <td>Y5</td> <td>Y8</td> <td>Y6</td> <td>Y3</td> </tr> <tr> <td>Pump 1</td> <td>Pump 2</td> <td>Pump 3</td> <td>Pump 4</td> <td>Pump 5</td> <td>Pump 6</td> <td>Pump 7</td> </tr> </table> Corresponding stage pump not connected or defective. Distribution board defective.		Y5	Y6	Y7	Y8	Y9	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Y9	Y7	Y8	Y5	Y3	Y6	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6	Y4	Y7	Y9	Y5	Y8	Y6	Y3	Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6	Pump 7	Contact your Condair representative.
Y5	Y6	Y7	Y8	Y9																																					
Pump 1	Pump 2	Pump 3	Pump 4	Pump 5																																					
Y9	Y7	Y8	Y5	Y3	Y6																																				
Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6																																				
Y4	Y7	Y9	Y5	Y8	Y6	Y3																																			
Pump 1	Pump 2	Pump 3	Pump 4	Pump 5	Pump 6	Pump 7																																			
—	E129 (Pump 1) and E132 (Pump 2) to E137 (Pump 7)	Error Pump x	The controller was not able to activate one or more stage pumps. The Condair ME Control will continue to attempt normal operation. The fault message must be reset after elimination of malfunction.  Stage fault detection option not correctly installed. Electrical pump connection broken. Pump impeller Worn. Pump defective.		Contact your Condair representative.																																				
W151	E151	PureFlo Maintenance	PureFlo cartridge replacement interval exceeded, current operation status not affected.  Lifespan of PureFlo cartridge exceeded. PureFlo cartridge replacement interval counter not reset after replacement of cartridge.		Replace PureFlo cartridge.  Reset PureFlo replacement interval counter ( <a href="#">Section 5.3.2.2</a> ).																																				
—	E152	UV Relay Fault	UV current detected while UV lamp is turned off. The system continue with normal operation.  UV option connected incorrectly Relay contact welded together.		Contact your Condair representative.																																				
W157	—	Software download from USB failed	Software download from USB failed.  Connection aborted during software download from USB stick or faulty update file.		Contact your Condair representative.																																				
W158	—	Software download from Cloud failed	Software download from Cloud failed.  Connection aborted during software download from Cloud or faulty update file.		Contact your Condair representative.																																				
—	E162	Software update failed	Software update failed.  Integrated controller switched off during update process or invalid software version downloaded.		Contact your Condair representative.																																				

## 7.3 Saving fault and maintenance histories to a USB stick

The fault and maintenance histories of the Condair ME can be saved to a USB stick for logging and further analysis. For this purpose, proceed as follows:

1. Set the **<On/Off>** switch on the right side of the control unit to the Off position, then switch off the voltage supply to the control unit via the external electrical isolator and secure switch in the Off position to prevent it from inadvertent power up.
2. Unlock the front cover of the control unit and remove it.
3. Open control unit inner swing door.
4. Carefully insert FAT32 formatted USB stick into the USB port on the control board. Make sure that the maximum length of the USB stick does not exceed 75 mm (3").
5. Close control unit inner swing door, then relocate the front cover of the control unit and lock it with the screw.
6. Remove the lock and tag from the external electrical isolator. Then, switch on external electrical isolator switch to restore power to the control unit.
7. Set the **<On/Off>** switch on the right side of the control unit to the On position.
8. When the home screen appears:
  - Select "**Menu > Password: 8808 > Maintenance > Histories > Export Error/Warning History**". The last 80 events are then downloaded to the USB stick as separate .csv file (Automatically generated file name: "ExceptionHistory\_<DeviceType>\_<Serial#>\_<Date>\_<Time>.csv").
  - Select "**Menu > Password: 8808 > Maintenance > Histories > Export Maintenance History**". The last 20 events are then downloaded to the USB stick as separate .csv file (Automatically generated file name: "ServiceHistory\_<DeviceType>\_<Serial#>\_<Date>\_<Time>.csv").
9. Repeat steps 1 to 3, then carefully remove the USB stick.
10. Close control unit inner swing door, then relocate the front cover of the control unit and lock it with the screw.
11. Repeat Step 6 and 7 to power up the control unit.

## 7.4 Malfunctions without indication

Malfunction	Cause	Remedy
<b>Residual water in the section of the duct downstream of the evaporative module.</b>	Face velocity is too high.	Install droplet separator or reduce air velocity in the duct.
	Water tank, water piping or hydraulic module is leaking.	Check/seal water tank, water piping and hydraulic module.
	Water flow to media too high.	Check duty in software is correct, then adjust pump calibration as required.
	Evaporative cassettes have become blocked with minerals.	Check set up, replace evaporative cassettes, perform system service.
	Uneven or non laminar air flow.	Check design conditions of AHU. Install perforated plate on the air supply side.
	Air on temperature is too low.	Check design conditions of AHU and increase temperature.
<b>Humidity/cooling demand present however the Condair ME Control does not humidify.</b>	Shut-off valve in the water supply line closed.	Open shut-off valve.
	Site control are not correct.	Prove controls and control module.
<b>Maximum humidification/cooling capacity is not reached.</b>	Insufficient water supply capacity.	Check water supply, increase water pressure.
	Evaporative cassettes have become blocked with minerals.	Check set up, replace evaporative cassettes, perform system service.

## 7.5 Notes on fault elimination

- For the elimination of faults set the Condair ME out of operation as described in [Section 4.6](#), disconnect control unit from the mains and close shut-off valve in the water supply line.



### DANGER!

Make sure the control unit is separated from the mains (check with voltage detector) and the shut-off valve in the water supply line is closed.

- The elimination of faults must be carried out by qualified and well trained professionals only. Malfunctions relating to the electrical installation (e.g. replacement of the backup battery, replacement of fuses) must be repaired by authorized personnel (e.g. licensed electrician) or by your Condair representative's service technician only.



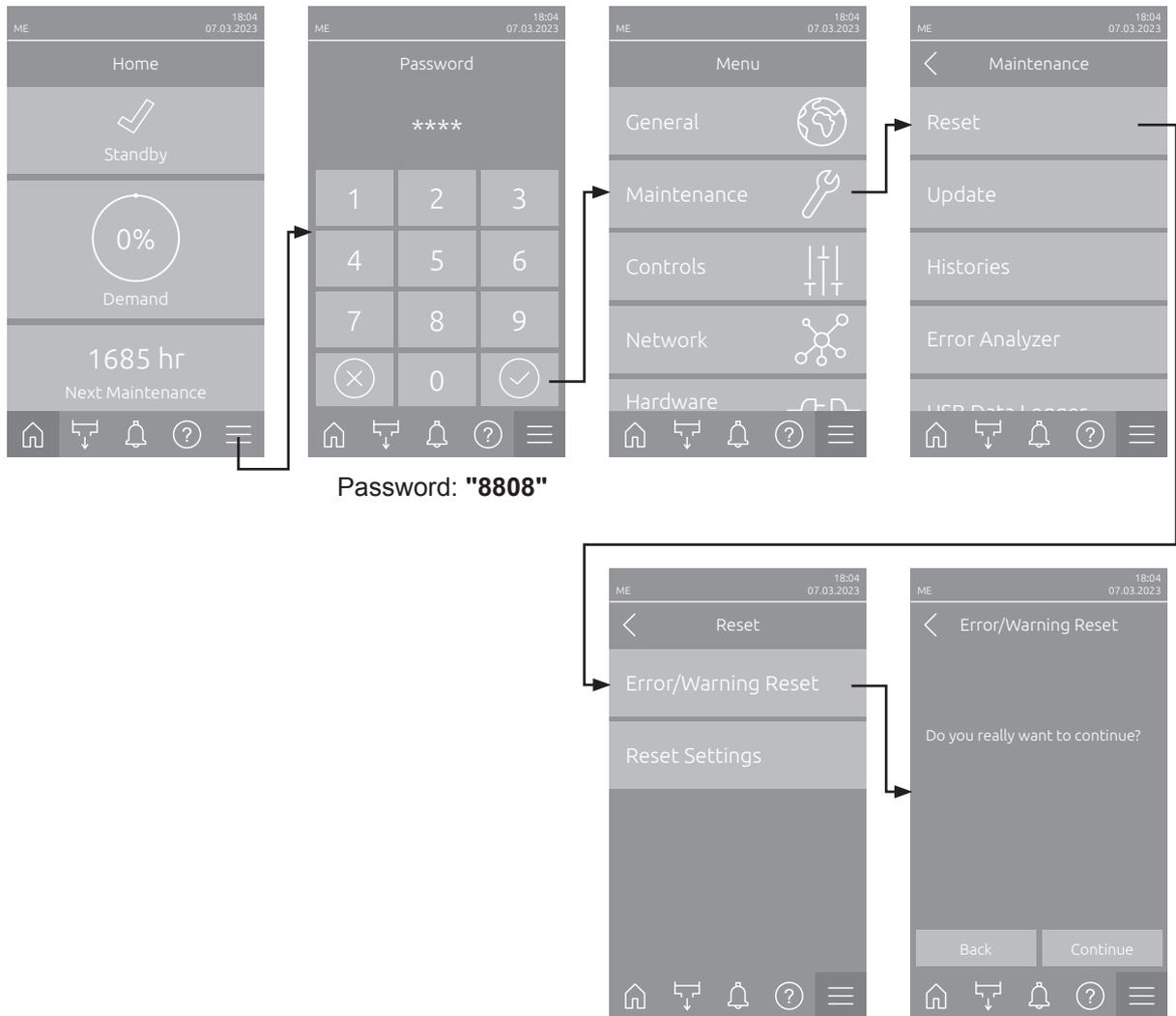
### CAUTION!

Electronic components are very sensitive to electrostatic discharge. When carrying out repairs to the control unit, appropriate measures (ESD-protection) must be taken to prevent damage to electronic components.

- Repair work and the replacement of faulty components must be carried out by your Condair representative's service technician only!

## 7.6 Resetting malfunction indication

To reset the malfunction indication, proceed as follows:



1. Select in the "Error/Warning Reset" function (Path: "Menu > Password: 8808 > Maintenance > Reset > Error/Warning Reset").
2. The reset confirmation dialog appears:
  - Press the **<Continue>** button to reset the malfunction indication(s).
  - Press the **<Back>** button to abort the reset procedure. The control unit returns to the "Reset" submenu.

If the malfunction indication cannot be reset via the control software (e.g., the display hangs), proceed as follows to reset the malfunction indication(s):

1. Switch off the control unit via the **<On/Off>** switch (on the right side of the control unit) or the electrical isolator.
2. Wait 10 seconds, then switch the control unit back on via the **<On/Off>** switch or the electrical isolator.

Note: If the cause of the malfunction(s) has/have not been eliminated, the malfunction indication(s) reappear(s) after a short while.

## 7.7 Replacing the fuses and backup battery in the control unit

The fuses of the control unit must be replaced by **authorized personnel only** (e.g. electrician).

Replace fuses of the control unit only with fuses matching the specifications below with the appropriate nominal current capacity.

Never use refurbished fuses. Do not bridge the fuse holder.

To replace the fuses or the backup battery, proceed as follows:

1. Disconnect control unit from the mains by switching off the electrical isolator and secure electrical isolator in "Off" position against inadvertent switching on.
2. Undo the screw of the front cover of the control unit, then remove the front cover.
3. Open control unit inner swing door.
4. Replace desired fuse or the backup battery.



**DANGER!**

Fuse contact protection must be relocated after the fuse has been replaced.

5. Close control unit inner swing door, then relocate the front cover of the control unit and lock it with the screw.
6. Reconnect control to the mains by switching on the electrical isolator.

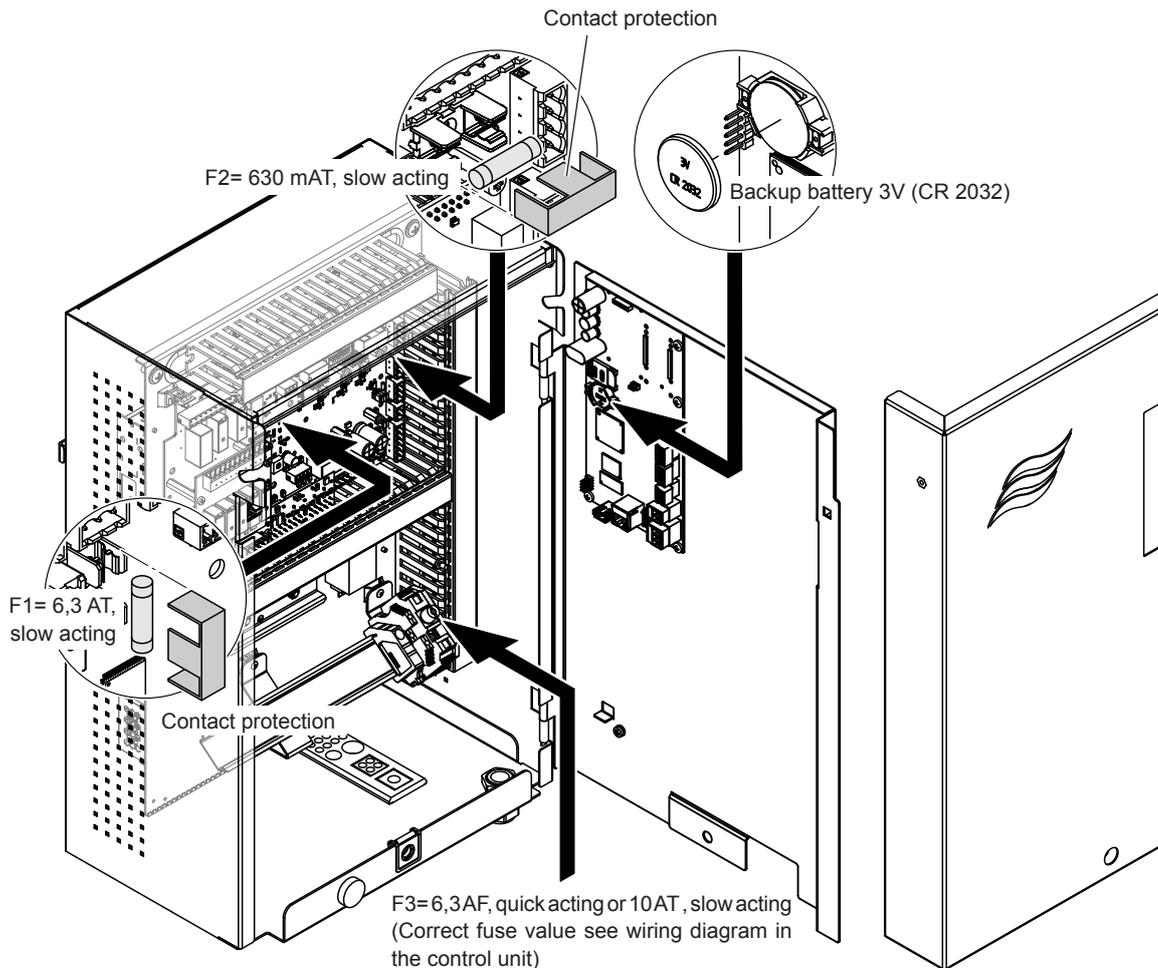


Fig. 15: Replacing the fuses and backup battery in the control unit

## 8 Taking out of service/Disposal

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### 8.1 Taking out of service

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

1. Take the Condair ME Control out of operation as described in [Section 4.6](#).
2. Have the system components unmounted by a qualified service technician.

### 8.2 Disposal/Recycling

Components not used any more must not be disposed of in the domestic waste. Please dispose of the individual components in accordance with local regulations at the authorised collecting point.

If you have any questions, please contact the responsible authority or your local Condair representative.

Thank you for your contribution to environmental protection.

## 9 Product specifications

### 9.1 Technical data

	Condair ME Control
Supply voltage control unit	100...240 VAC/50...60 Hz
Supply voltage circulation pumps	24 Vdc (supplied by control unit)
Power consumption <sup>1)</sup>	< 278 W (5 stages, no options fitted) < 536 W (7 stages, no options fitted)
Control signals	0...5 VDC 1...5 VDC 0..10 VDC 2...10 VDC 0...16 VDC 3.2...16 VDC 0 ... 20 VDC 4 ... 20 VDC 0..20 mA 4..20 mA On/Off (via volt-free contact)
Control accuracy	Control accuracy depends on air conditions, control distance, water quality and on the number of On/Off cycles
Max. admissible matrix face velocity	4.5 m/s (886 fpm) with droplet separator
Water supply	Compression fitting ø15mm or ø16 mm (0.625") as applicable
Water drain (outside diameter)	Tank: ø50 mm or ø54mm (ø2.125") as applicable Hydraulic module: ø28 mm (1.125") or ø32 mm (1.25") as applicable
Admissible water supply pressure	2...5 bar (29...72.5 psi)
Admissible water temperature	5...20 °C (41...68 °F)
Water quality	Tap water, softened or fully demineralised water with a max. of 1000 cfu/ml
Admissible operating air temperature	10...60 °C (50...140 °F)
Admissible ambient temperature (Control unit)	1...40 °C (33.8...104 °F)
Admissible ambient humidity (Control unit)	max. 75 %rh
Degree of protection of Control unit	IP21
Degree of protection of Hydraulic module	IP42
Conformity	CE, UL, BTL
Fire classification of evaporative media	glass fibre media: A2-S2,-D0 (UL Class 1) polyester media: DIN EN 53438 Class F1

<sup>1)</sup> Power consumption depending on the number of vertical evaporative cassettes banks and the options fitted

## 9.2 CE 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
im Seriennummernbereich	<b>Condair ME II Control</b> in the serial number range 1152773 to 4999999	pour les numéro de serie
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  <b>EN 60335-1</b> <b>EN 60335-2-88</b> <b>EN 61000-6-2</b> <b>EN 61000-6-3</b>	auquel se réfère cette déclaration est conforme aux normes ou autres documents normatifs
und den Bestimmungen der folgenden Richtlinien entspricht	and is corresponding to the following provisions of directives  <b>2006 / 42 / EC</b> <b>2014 / 30 / EU</b>	et est conforme aux dispositions des directives suivantes

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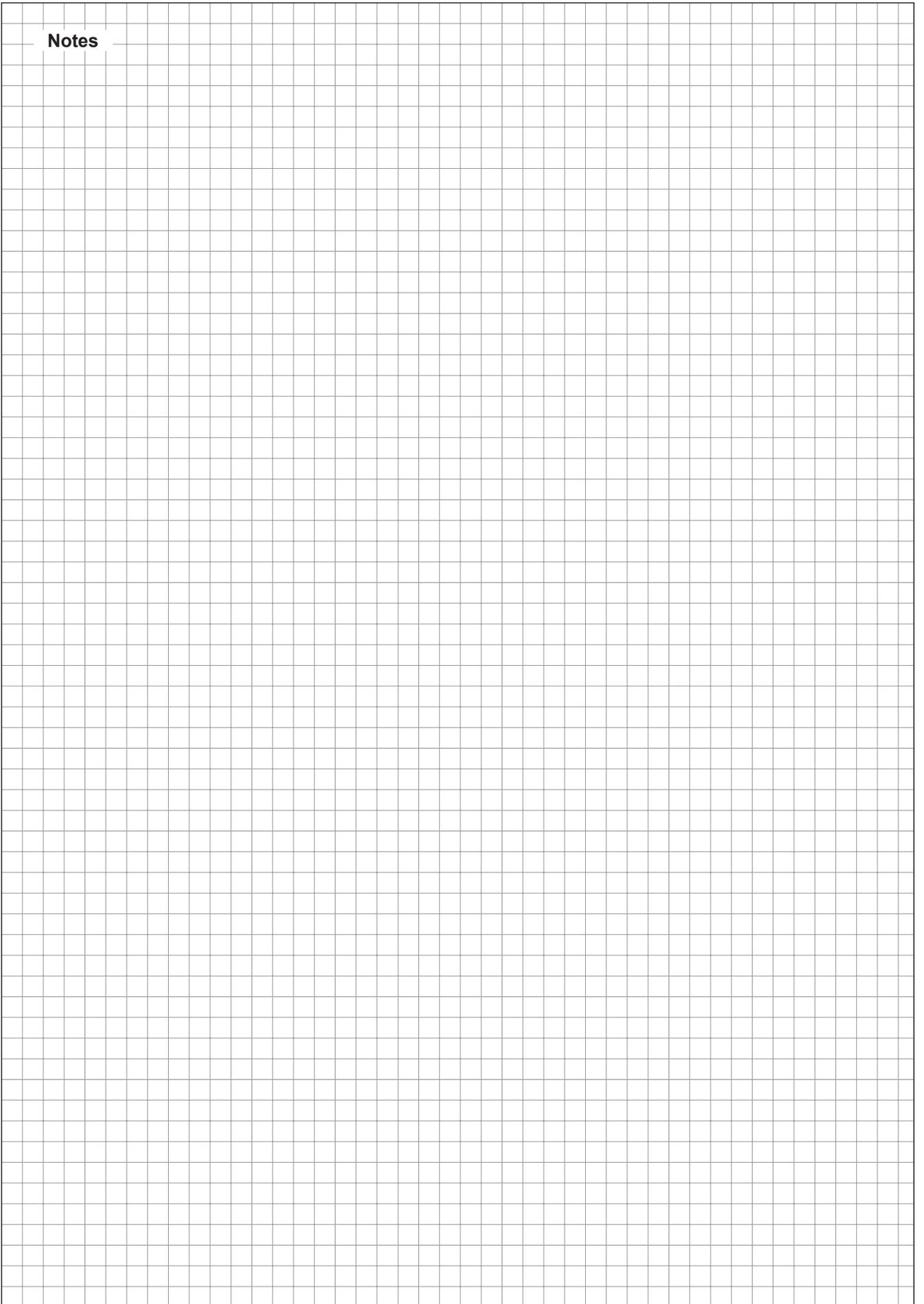
Pfäffikon, July 03, 2023  
Condair Group AG

Eric Roth  
Chief Technology Officer

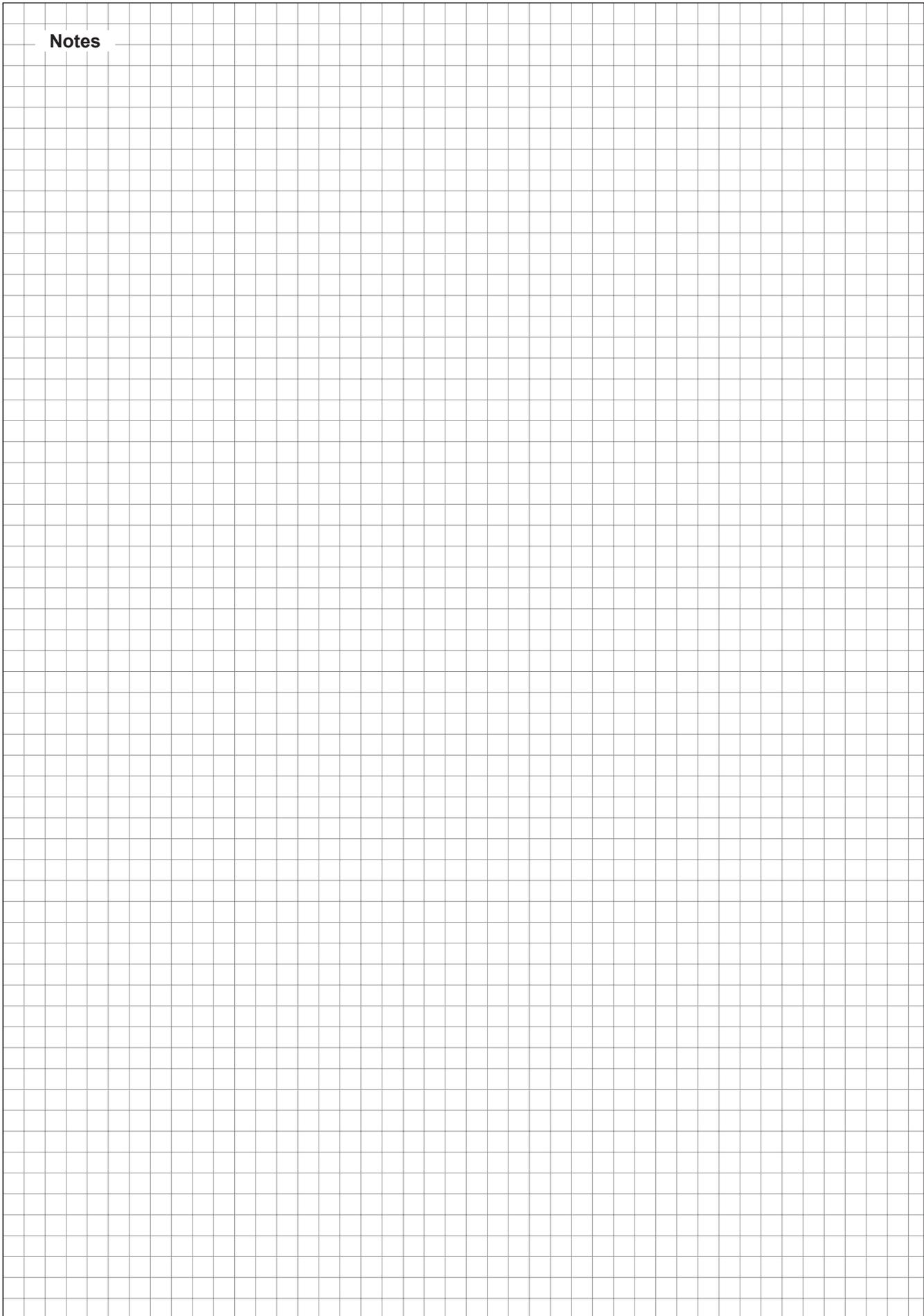
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**Notes**



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CONSULTING, SALES AND SERVICE:



CH94/0002.00

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