



Installation Manual HomEvap Stand Alone

This product may be used by children aged 12 years and older, persons with reduced mental capabilities, physical limitations or lack of experience and knowledge, if they are supervised or have been given instructions on how to use the product in a safe way and are aware of the possible hazards. Children are not allowed to play with the product. Cleaning and user maintenance must not be carried out by children without supervision. Original instructions for use HomEvap Kerkenbos 13346546 BG Nijmegenht.

HomEvap BV

Kerkenbos 1334 6546 BG Nijmegen, The Netherlands

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Foreword

This installer's manual has been drawn up for the installation and maintenance of the **HomEvap Stand Alone (formerly Direct)**.

The purpose of this installer's manual is:

- Optimal safety during installation and use.
- Careful maintenance.
- Reference work for malfunctions.

Although this manual has been compiled with the greatest possible care, no rights can be derived from it. The products are continuously under development. HomEvap therefore reserves the right to change this manual without prior notice.

Warranty and liability

Warranty

We hereby declare that we grant a warranty on HomEvap products for a period of 2 years after the production date. This warranty covers the free supply by HomEvap of replacement parts.

The warranty does not cover:

- Disassembly and assembly costs.
- Defects which, in the opinion of HomEvap, are the result of incorrect handling, negligence or accident.
- Defects arising from treatment or repair by third parties without the permission of HomEvap.
- Consumable parts such as water filter cartridges, LegioSafe filter, matrix cassette material and distribution tube or nozzle.

For returning a defective part, the installer must contact HomEvap.

Liability

The HomEvap Stand Alone is designed for adiabatic cooling for high-rise buildings, low-rise buildings, residential dwellings and small commercial applications. Without consultation with a HomEvap specialist, any other application is considered improper use, and the manufacturer cannot be held liable for any resulting damage.

HomEvap is not liable for damage caused by:

- Improper use.
- Normal wear and tear.
- Failure to follow the instructions in this manual regarding safety, operation and maintenance.
- The use of parts not supplied by HomEvap BV.
-

Implemented safety measures

- The HomEvap Stand Alone is constructed in such a way that under normal use and without deliberate actions it is not possible to come into contact with moving or live components.
- The HomEvap Stand Alone complies with the statutory requirements for electrical appliances.

The unit must be installed in accordance with the national wiring regulations.

Applied directives:

- Low Voltage Directive 2014/35/EU
- EMC Directive 2014/30/EU
- RoHS Directive 2011/65/EU
- Construction Products Regulation 305/2011

Standards applied to the components are:

- EN ISO 12100:2010
- EN 60335-1:2012/A12:2017
- EN 60335-2-98:2003/A2:2008
- EN 62233:2008
- EN 61000-3-2:2014
- EN 61000-3-3:2013
- EN 55014-2:2015
- EN 60204-1:2018

The product is provided with the CE mark.

The following safety measures must be observed:

- Before starting any work, always make the appliance voltage-free by removing the power plug from the wall socket.
- Use suitable tools.
- Use the appliance only for applications for which it has been designed, as stated in the paragraph “Warranty and liability” and with due observance of the technical specifications.
- If the power cable is damaged, it may only be replaced by an authorised person.

Explanation of symbols on the cover at the bottom side:



There is voltage present on components underneath the cover. This symbol warns of danger. Caution is required; remove the plug from the socket before removing the cover.

T



This symbol warns of contact and unprotected access.



This symbol warns of danger. Caution is required.

Technical information

General description

The purpose of the HomEvap Stand Alone is to cool and humidify the air in the dwelling in an energy-efficient, quiet and safe way when there is no heat recovery unit present. The cooling function keeps the dwelling at a comfortable temperature in summer. The Humidifier will maintain a good relative humidity in the dwelling in winter. The Stand Alone is installed out of sight above the door of, for example, your meter cupboard, storage room or attic. The humidified and cooled air is blown in through a duct and a diffuser or grille.

Principle of operation

The HomEvap Stand Alone is an adiabatic air cooler and humidifier. The warm air from the dwelling passes through a wetted matrix. As a result, the air is cooled down to very close to the wet bulb temperature of this air, for example 29 °C / 30% is cooled to 20 °C / 75%. The adiabatic air cooler has an efficiency of 80%.

Humidifier

When the moisture content of the outdoor air becomes too low, the HomEvap starts humidifying this supply air, achieving a maximum efficiency of 80%. The air cools down in accordance with the enthalpy line of the Mollier diagram*. The maximum capacity is maximum 4l/h*.

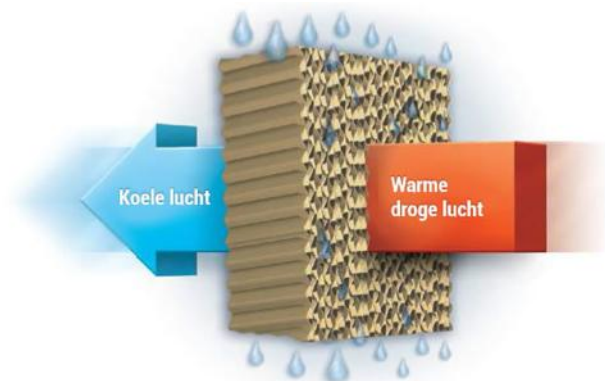
Cooler

The Stand Alone also provides cooling and only operates when the outdoor temperature is perceived as too warm and the setpoint is lower than the measured temperature in the dwelling.

NOTE: The effect on the room temperature is limited due to the limited air volume.

Application

The HomEvap Stand Alone can be applied anywhere, as long as the unit is connected to a water supply, drain and power supply.



Description of the components

The casing

The Stand Alone consists of two casings made of EPP (expanded polypropylene) with a round duct connection of 200 mm on both sides. The humidifier has a slightly longer spigot due to an extra protective grille. The advantages of EPP are that it is light-weight, waterproof and recyclable. It consists of one unit with the humidifier/cooler and one unit with the fan which provides the airflow.



Both units have an upper and a lower housing, which are connected to each other by two rings. At the bottom of the humidifier/cooler there is the compartment with the water valve and mainboard, sealed by an EPP cover. At the bottom of the fan box there is the wiring with the connection to the power supply and the connection cable to the humidifier for the ventilation volume control based on PWM.

Internal construction

The internal construction of the humidifier/cooler unit has been developed in such a way that the airflow is optimal and humidified in a safe way. It consists of a cassette containing the patented legionella-safe filter, LegioSafe, and the matrix.

We use the green guard approved and Fire proof tested and approved Glassfiber Media to evaporate water. This to ensure safe operation and reduce the risk of fire and bacteria growth.

The supply water passes through the filter and then humidifies the matrix in a filtered state. The supplied air passes through the media/matrix and is humidified. Excess water is discharged. The PTC heater, mounted in the ring, heats the supply air if it drops below the setpoint. The internal construction of the fan box consists of a fan that is controlled from 0–10 volt DC.



The control

The HomEvap can be controlled in several ways. See page 11. If supplied with the wired control panel, see the control panel manual.

Operation

As soon as the sensor in the control panel measures a deviation in temperature or humidity, the water valve will modulate open and closed for optimum efficiency and minimal water consumption. This process will repeat itself until the setpoint is reached. The control is equipped with an anti-stagnant water function as an extra safeguard against legionella formation and an over-humidification protection.

Technical specifications

Dimensions LxWxH

Maximum humidification capacity

Maximum cooling capacity

Power consumption in operation

Maximum water consumption

Water supply connection

Water drain connection

Maximum air volume

Duct connection

Fan

HomEvap Stand Alone

258 x 344 x 335 mm fan box, same for optional fanbox

298 x 344 x 335 mm humidifier

0–3.5 litres

1985 watt

Max. 650 watt at maximum airflow (!)

4.0 litres per hour

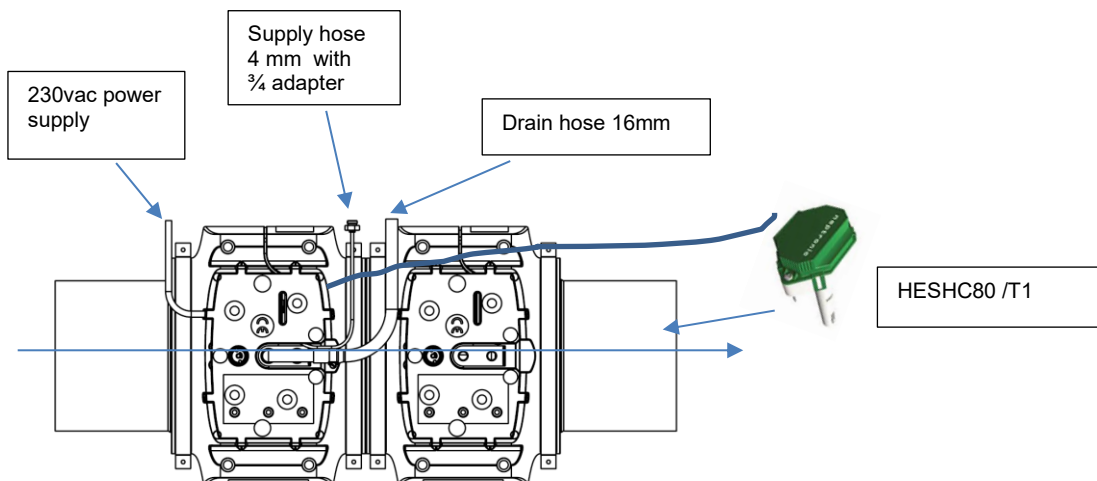
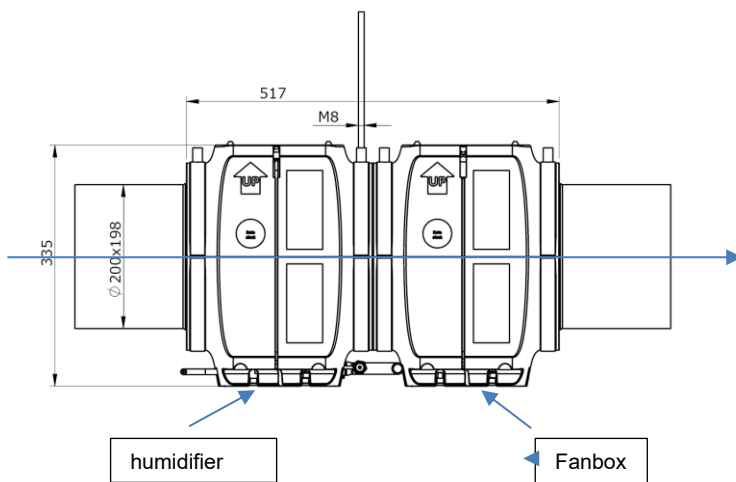
4 mm waterhose with connector to $\frac{3}{4}$ outside thread

16 mm hose length 1.5 m

650 m³/h

R150 – R200 mm

EBM papst K3G190RC0503



Installation manual HomEvap Stand Alone

Before opening, check the packaging for visible damage. Damage must be reported in writing within 48 hours after delivery to info@homevap.com due to warranty liability.

The Stand Alone must be connected to a water supply connection equipped in accordance with NEN6526.

The HomEvap Stand Alone consists of 2 modules:

1. **HomEvap Humidifier** – This is the EPP unit with two 200 mm round connections and contains the matrix. At the bottom there is a cable with plug, 1 SHC80 duct sensor cable, 1 connection cable to the fan box, 70 cm 16 mm drain hose, 1 m 4 mm water supply hose (black).
2. **The fan box** – This is the EPP unit with two 200 mm round connections and contains the fan. At the bottom there is a cable with plug which must be connected to the power supply cable of the HE humidifier. Use the supplied splitter for this.



The humidifier must be mounted level! The fan box may be mounted in any position.

Physical mounting instruction

1. Determine the location of the Stand Alone in the dwelling. For optimum efficiency, the Stand Alone should be installed in a location where the exiting air can easily flow through the dwelling, e.g. hall, attic in stairwell, cupboard in kitchen or storage room towards a large living room.
2. Determine whether the units can be installed separately from each other, connected with a piece of flexible duct, or directly coupled to each other with an R200 connection ring.
3. The HE is provided with a mounting bracket with an M8 threaded insert. This can be used for suspension by means of a threaded rod.
4. We recommend placing a section of acoustic duct after the fan box before the grille.
5. Free space around the unit must be sufficient so that the humidifier can be rotated horizontally during servicing.

Water connection

Connect the black 4 mm hose with the 3/4" adapter to the water supply connection of the mains water system via a 3/4" threaded washing machine tap with check valve. Make sure that the water pressure is between 1.5 bar and max. 5 bar.

Water drain connection

The Homevap is supplied with a 16 mm drain hose, length 1.5m



This must be connected to the drain pipe with a gravity fall and without pressure. (see diagram)

NOTE: the water consumption is a maximum of 1 l/min in the event of a pipe break inside the appliance, normal consumption is max. 2 l/h. The minimum required diameter of the drain is 25 mm.

Duct humidity and temperature sensor

Install the SHC80 (T1) Stand Alone sensor in the supply air duct after the HE.

Ensure that the sensor tip hangs free in the airflow and that the airflow direction corresponds to the arrow on the sensor.

In a wired version of the Stand Alone, a return duct sensor (SHC80 (T8)) is also supplied.

The value of this sensor is not directly visible on the display. For this we refer to the controller manual. The visible RH % is measured by the internal sensor of the control panel; the unit does not respond to this value.

NOTE that the sensor is not damaged! It is an electronic component and sensitive to water splashes and shocks.

Commissioning protocol

Once the above steps have been carried out, the humidifier can be started up. Follow the steps of the protocol below one by one.

1. Open the water supply tap a half or quarter turn. Check for leaks at the connection to the tap.
2. Insert the plug into the wall socket.
 - At the underside of the unit the following LEDs will illuminate:
 - GREEN POWER LED, starts flashing
 - ORANGE service LED starts flashing on and off every 5 seconds

This indicates that a TEST CYCLE is active. This lasts approximately 3 minutes. First, the water valve opens for 90 seconds; this is audible, the LegioSafe filter and matrix material are rinsed, then the heater switches on and off. Check whether the excess water can drain freely through the drain. If necessary, repeat the TEST CYCLE by disconnecting the power and switching the appliance back on.

When the ORANGE LED goes out, the HomEvap Humidifier is ready for operation.

If supplied with a HEDISW controller:

During the test cycle, a message "S off" is active, which disappears when the cycle has finished. The humidifier is then basically ready for use.

(continue with the menu; to adjust the settings, see the controller manual*).*

It is normal that water drains after approximately 3–5 minutes. This is never more than 1 to 2 l/h, depending on the supply air temperature and relative humidity.

Maintenance instructions

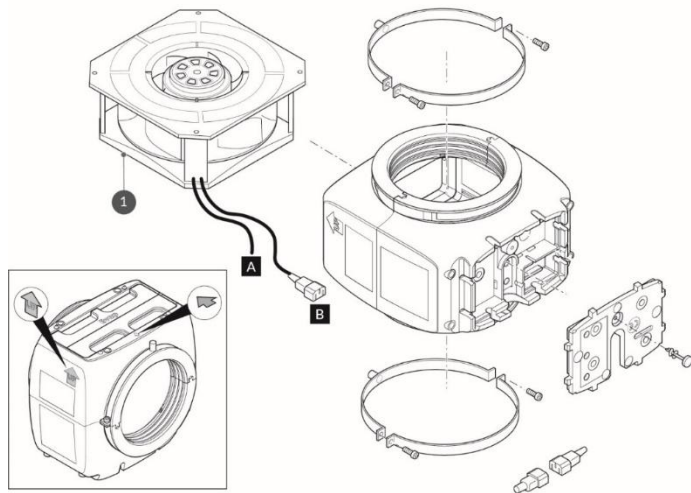
The Stand Alone requires little maintenance.

Maintenance such as replacing the matrix cassette is easy to carry out

Replacement is indicated by a SERVICE message on the display or a flashing ORANGE SERVICE LED at the bottom of the humidifier.

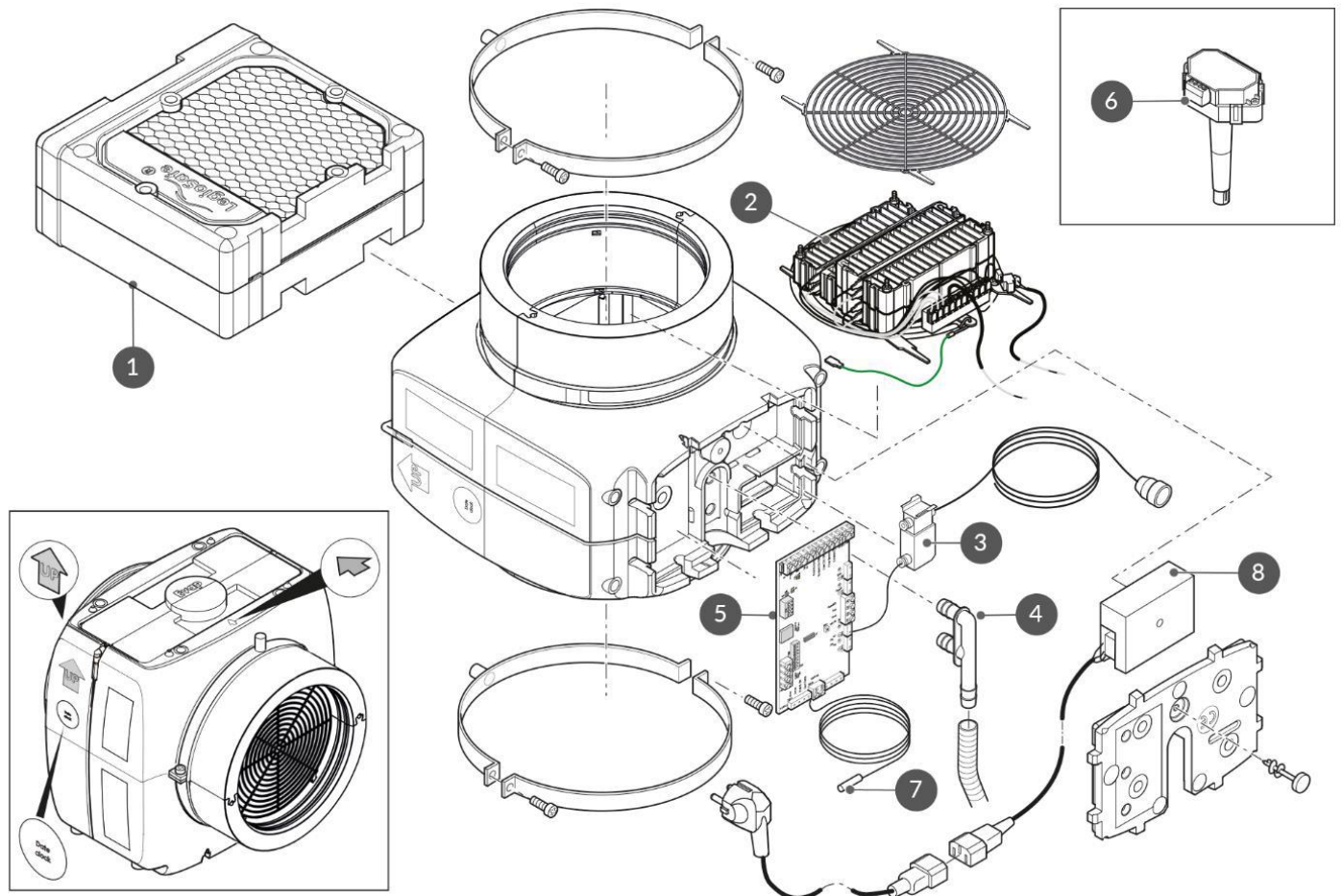
Under normal use this is approximately every year to year and a half.

Exploded View



Fan box:

1. Fan
- A. Connection cable to humidifier
- B. Power cable



Humidifier:

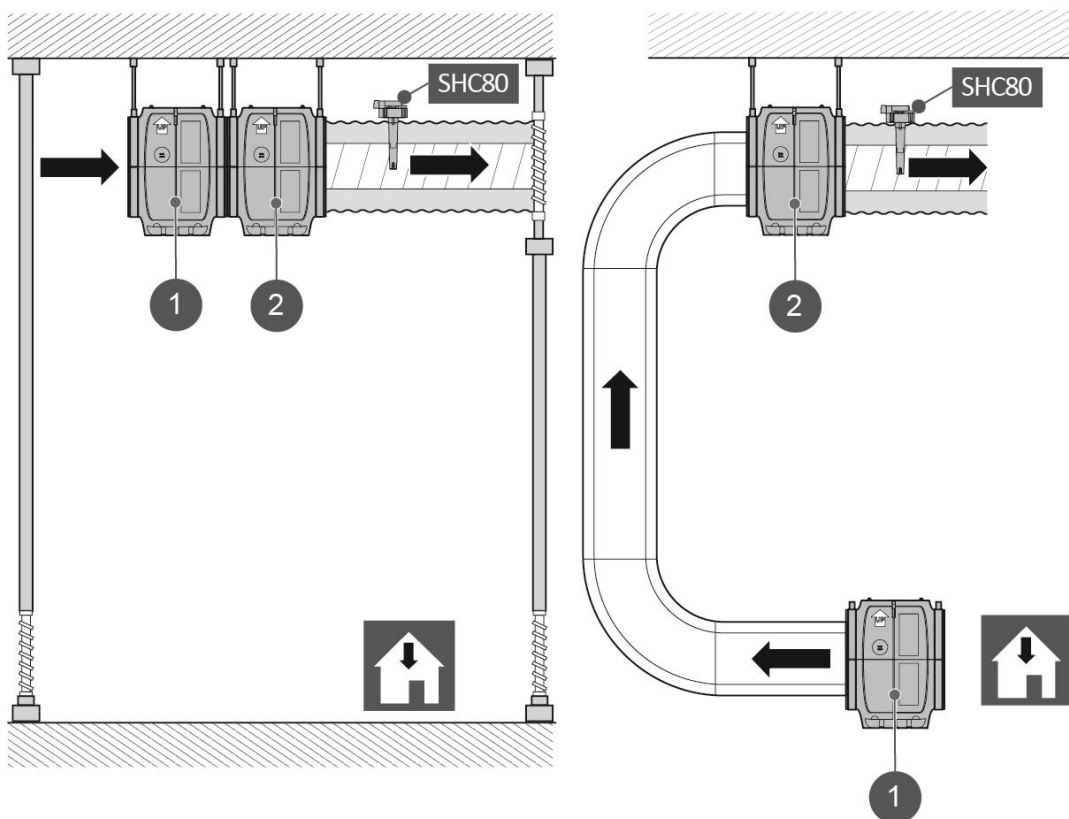
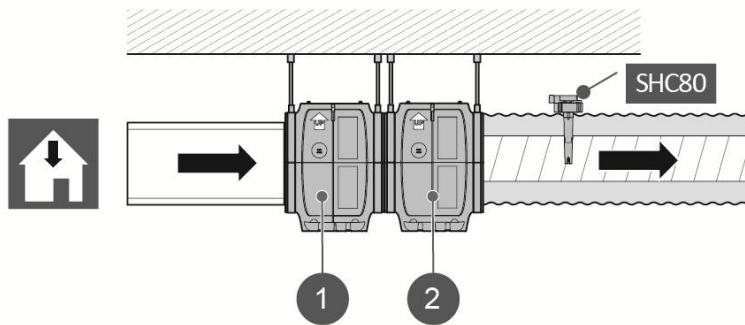
1. Cassette
2. Heater
3. Water valve
4. Drain
5. Printed circuit board
6. Duct sensor
7. Power supply

Schematic representation of Stand Alone in a storage room

Note. The grille and acoustic duct must be provided by third parties.

1 = Humidifier/Cooler

2 = Fan box



Control options

Standard: wireless controller based on RF.

Alternatives

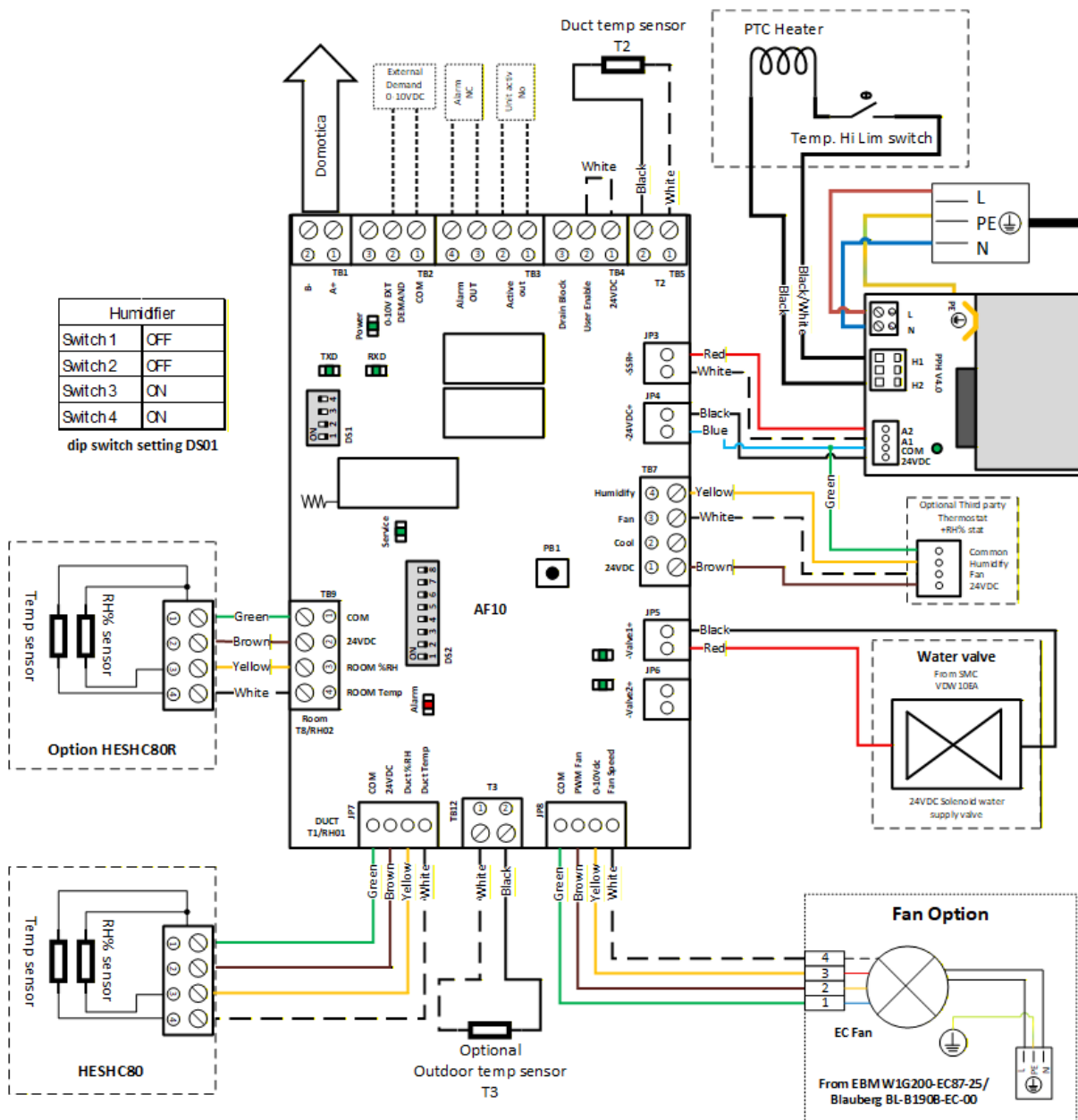
External:

- **0–10 volt (DC):**
Connect to TB2: 10 V = 2, 0 V = 1.
Operation:
1–3 volt: 30%
4–7 volt: 60%
8–10 volt: 100%
Dipswitch setting: DS1 1 ON, 2 ON, 3 ON, 4 OFF
- **Modbus / BACnet via RS485:**
Connect to TB1.
Dipswitch DS2, 8 ON. With multiple units, unique addresses can be created by changing the dipswitches. See the BACnet/Modbus control manual.
- **External hygrostat or thermostat:**
Connect to TB7, cool: 1 + 2, humidifier: 1 + 4. In the case of a Stand Alone also connect to 3.
Operation: any hygrostat or thermostat can be connected to the unit and can control it, with the setpoints of the duct sensor (T1) acting as limiter.
Dipswitch setting: DS1 1 ON, 2 ON, 3 ON, 4 OFF

Internal:

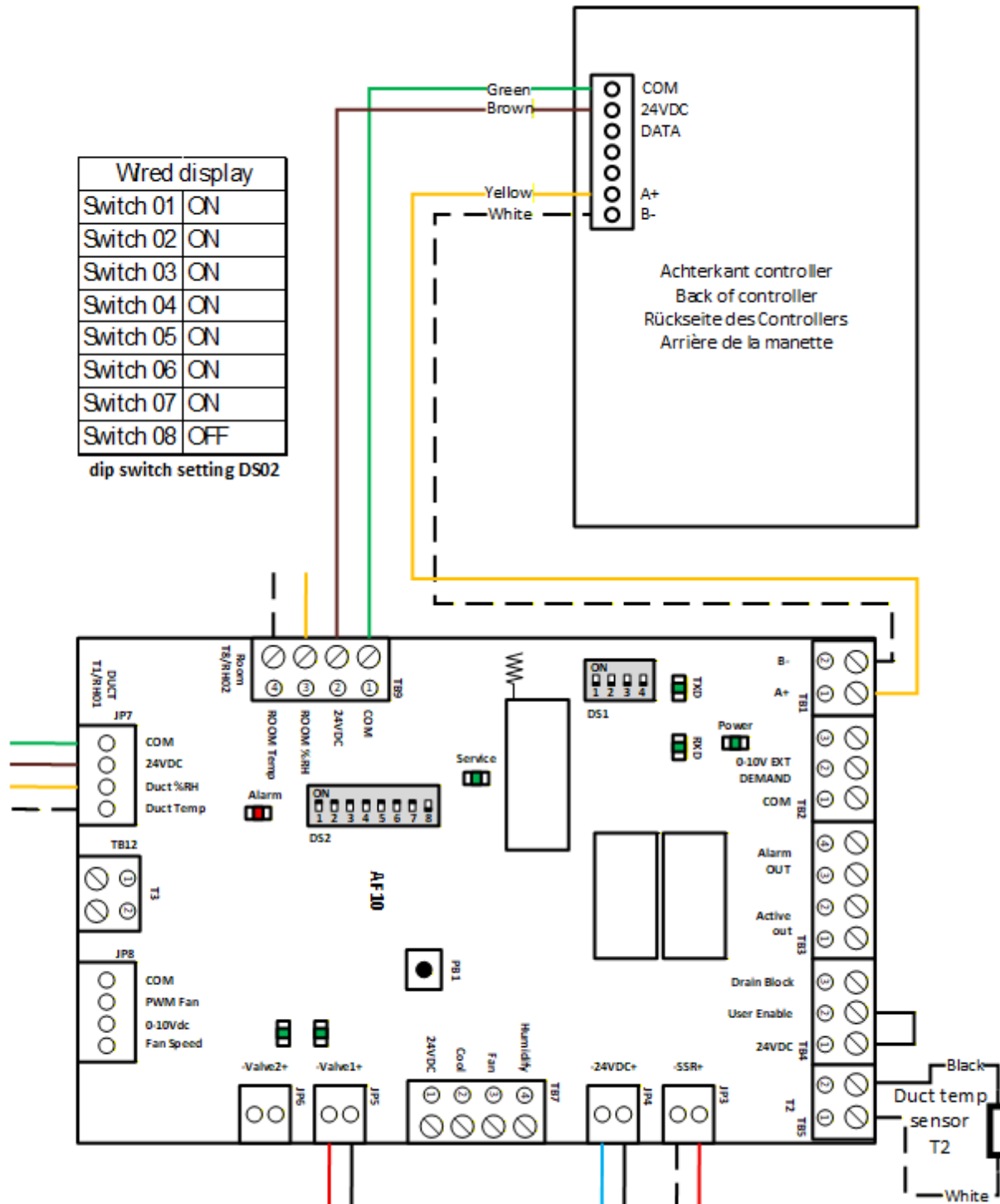
- **T8 return duct sensor RH % / T:**
Connect duct sensor to TB9 and install it in the return duct before the heat recovery unit or humidifier/cooler.
Operation: the duct sensor measures the RH in the return duct and when it falls below the standard setpoint the unit will start. The control panel can be used to read values and alarms, but the unit does not respond to the measured values on the panel display.
When to use: when contact between the unit and the control panel is lost. Comes **standard with wired control panel**. (value readable under fields HUM/RH02 and TEMP/TS08)

Wiring diagram wireless after September 2023 (version 3_06 ->)



Wiring diagram Wired version HomEvap

Any unit after September 2023 (HEMAINW-AF9/10) can be equipped with a wired controller. You will need to order the Wired controller and connected as per wiring diagram.



ALARMS

When the control in the unit detects a fault, this is displayed at the bottom of the product by the alarm symbol (bell) by means of an LED. To reset the alarm the product must be briefly disconnected from the power supply by removing the plug from the socket and then replacing this in the socket after 10 seconds. The Table below shows different causes of an alarm and the repair or control action.

Alarm LED	Display Tekst	Meaning	Action	Reset
Alarm LED on	<i>S-OFF</i>	Contact user enable broken, unit switches off	Restore contact user enable, see wiring diagram	manual
3 times	<i>SENSUP</i>	Contact with SHC80 sensor broken	Check SHC80 wiring and if necessary repair, check that the light on SCH80 sensor flashes regularly, if not replace faulty sensor.	Automatic
5 times	<i>OUTDEF</i>	T3 sensor outside air faulty	Check wiring for break or wear, in case of doubt replace. Testing can be done by keeping the sensor at 8°C or colder in water or air; the Evap must then be activated because the water valve opens.	Automatic
7 times	<i>RETDEF</i>	Contact returnsensor broken	Check wiring SHC80, repair if necessary, check green light on SCH80 sensor, blink fast then replace sensor.	Automatic
9 times	<i>WATER</i>	No rise of RH in duct	<p>Check that the water tap is open</p> <ul style="list-style-type: none"> If tap is open and there is a demand (outside air below 12°C) disconnect the black hose on top on the knee joint and activate the water valve by switching the voltage off and back on again, water should now come out of the hose; if valve does not respond, replace valve. <p>If valve is working and matrix material does not get wet after switching, then the LegioSafe filter is blocked and must be replaced. Order product code 351025 from your dealer.</p>	Automatic
11 times	<i>NOAIR</i>	No airflow at the cooler	Check whether the HVAC is working.	Automatic
Alarm LED	Display Tekst	Meaning	Action	Reset

13 times	<i>NOCOOL</i>	No water at the cooler	Check if the water tap is open. · When the tap is open and there is a demand (with the combi comfort, the outside temperature must be below 12°C) disconnect the black supply hose from the elbow on the unit, and reset the unit by unplugging and reconnecting the power supply ; if water comes out and the water valve does not respond, the water valve is faulty, replace the water valve. · If the water valve works and the matrix does not get wet after the valve has switched, the legionella filter is clogged; replace the cartridge.	Automatic
15 times	<i>HEATER</i>	Heating faulty	Check air temperature after the humidifier, this must be >8°C, if not air heater is faulty. Call installer for replacement.	Automatic
17 times	<i>AIRFLW</i>	No airflow	Check if HRV is working.	Automatic
19 times	<i>T2DEF</i>	T2 sensor faulty	Check wiring for break or wear, in case of doubt replace.	Automatic
Service LED	<i>Service</i>	The cassette must be checked and possible replaced	The cassette must be replaced and possible replaced	Automatic

Maintenance

The humidifier HEPH is equipped with a removable cassette in which a matrix HEMATB AND LegioSafe filter LS23FILEXT are fitted. The matrix cannot be cleaned and must be replaced when the RH% measured by the duct sensor (HESH80) no longer rises above 50% during a humidity demand, when this happens, an alarm is generated. See Chapter8.

The service life depends on the amount of dissolved minerals in the water. The water hardness is an indication of his. With a water hardness above 9 °dH, the service life is likely to be shorter than indicated by the service notification.

The LegioSafe filter is located inside the cassette. Its service life is determined by the number of microbes present in the water. The service indication applies to water with a Total Dissolved Solids (TDS) value of less than 350 ppm. The LegioSafe cartridge can be ordered separately.

HEPH600 version have an external LegioSafe, so the replacement article is different from HEPH.

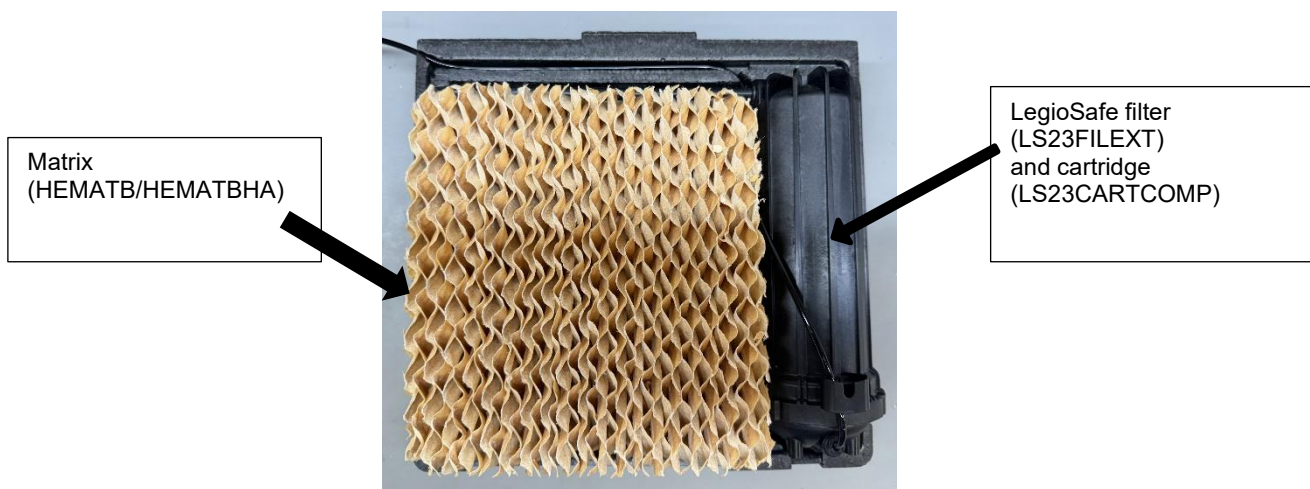


Procedure for maintenance

Maintenance is important it keeps your indoor air quality optimal and also reduces risks of water leakage. IF proper maintained the HomEvap will provide good performance for many years of use. We have a special manual and videos for maintenance of the HomEvap. Pls check website www.homevap.com under support for more detailed information.

NOTE that before performing any labour on the unit, it must be unplugged from power supply

The HomEvap is equipped with a removable cassette (service part HEPCAH), in which an matrix (service part HEMATB/HEMATBHA @XXXX600 version) and a LegioSafe filter with LegioSafe cartridge (service part LS23CARTCOMP) are installed.



The manuals for performing maintenance are supplied together with the replacement parts.

If you would like to know the water quality in your region, you can obtain this information from your local water supplier. If these values are higher, we recommend taking appropriate measures. For example by installing a sediment filter or a reverse osmosis water filter. If the values are higher than those stated in Table 4.1, the service life of the matrix and the cartridge will be reduced.

The procedures for checking the cassette, when a service message is active, are as follows:

NOTE: The procedures for replacing the cassette (complete set) or its components Matrix or LegioSafe filter and/or cartridge must be carried out by an authorised person only!

1. Disconnect the power plug from the socket.
2. Close the water supply.
3. Wait 3 minutes to allow the heating element to cool down.
4. Make sure the drain hose is free and can move along with the movement required to gain access to the top side.
5. Make sure the water supply hose has enough room to move, or disconnect it from the tap.
6. Loosen the screws on the sides of the fixing rings so that the HomEvap can be rotated in the bracket. Use a Phillips #2 or #3 screwdriver.
7. If necessary, rotate the housing by 90° so that the cassette is accessible. Be aware that residual water may leak from the side of the HomEvap!
8. Disconnect the cassette from the water supply by pressing the ring of the elbow fitting (on the side of the housing) and by sliding the entire elbow off the black hose. This disconnects the cassette, allowing it to be removed.



Press the elbow ring



Slide the entire elbow off the black hose.

9. Slide the cassette out of the HomEvap by pulling on the round knob.
10. If necessary, clean the inside of the HomEvap housing with a soft cloth.

11. Check the matrix for sediment and dirt. Vacuum or wipe off the sediment from the matrix. If this is not possible or if the matrix has hardened, we recommend replacing matrix. Follow the instructions supplied with the service part



the

12. After cleaning, slide the cassette back into the housing.
13. Push the black hose back into the elbow on the cassette.
14. Rotate the HomEvap back so that it hangs level.
15. Tighten the fixing rings.
16. Open the water supply tap.
17. Plug the power plug back into the socket.
18. THE UNIT STARTS ITS FLUSHING CYCLE, THE ORANGE LED FLASHES FOR APPROX. 3 MINUTES. Check the installation for any leaks on drain and water supply. Also check if water at end of cycle is going to the drain hose.
19. DO it again we want to rinse the pipes and new parts from loose particles and cause for drain blockage.

Service products

When ordering components in addition to the product code the serial number (if present) and the name of the component must be stated.

Product description	Product code
Humidifier cassette	HEPCAH
Evaporation media	HEMATB
Evaporative media HEPH600 VERSION HIGHER AIRFLOW	HEMATBHA
Humidifier cassette voor HEPH(15)600	HEPCAHHA
Legio Safe waterfilter complete	LS23FILEXT
LegioSafe cartridge only	LS23CARTCOMP
Humidifier air heater	HEPTC20S
Humidifier air heater HC (HEPH15)	HEPTC20S-15
Humidifier water valve	HEVDW12EA
Humidifier drain	HEPAFVOERS
Humidifier PCB	HEMAINW

Warranty provisions

- 1 HomEvap warrants that the supplied goods and/or their components shall for a set period after delivery be free of faults that are the direct consequence of material, production and/or construction faults. The duration of the warranty shall be:
 - 2 years from the installation date on all components of this product, except for any filter present, which is not covered by the warranty;
 - 5 years from the installation date on any heat exchanger present (except for enthalpy exchangers; for this the warranty period of 2 years shall apply).
2. Based on various technical standards and requirements for each country the warranty provided by HomEvap shall only be valid if the product is installed in the country of first purchase.
- 3 In derogation of the provision in paragraph 1 of this Article the warranty for goods that HomEvap has obtained from third parties or has had developed and/or manufactured by third parties shall be limited to the warranty that these third parties have given to HomEvap.
- 4 A claim under warranty shall only be considered by HomEvap if this is submitted to HomEvap in writing within 14 days after the fault is discovered or should reasonably have been discovered.
- 5 All warranty claims shall lapse if:
 - the other party has himself made modifications or repairs to the goods supplied or had them made by third parties without the prior consent of HomEvap;
 - there has been improper use and/or use for purposes other than the original, normal use;
 - the fitting instructions or user manual have not been strictly followed;
 - upon fitting, components other than the original (and included) HomEvap components have been used;
 - the fault is the result of causes other than material, production and/or construction faults;
 - delivery of used (2nd hand) materials, components or goods is agreed;
 - no maintenance, or incorrect or insufficient maintenance has been carried out;
 - the fault is a result of normal wear and tear.
- 6 Minor deviations in size, colour, weight or number shall not form grounds for a claim under warranty.
- 7 The costs of repairs to the goods supplied, that the other party has carried out himself or had carried out by third parties without the prior consent of HomEvap, shall never be for account of HomEvap.
- 8 As a result of its warranty obligations, HomEvap shall only be obliged to repair or replace goods or components supplied by it for its account, at the discretion of HomEvap, if the product is installed in the country of first purchase. HomEvap reserves the right to charge to the other party additional costs such as for example travel, accommodation and wage costs and the costs of dispatch and (dis)assembly.
- 9 If HomEvap replaces goods or their components to comply with its warranty obligation, the replaced goods or components shall become the property of HomEvap at the time of replacement.
- 10 Returns shall only be accepted after prior written consent of HomEvap. Return shall be carried out for account and risk of the other party.

Liability

Use according to intended purpose

The product, described in this documentation, has been designed for the adiabatic humidification of frost-free rooms in high-rise and low-rise buildings. Any other use falls outside the intended use of the product. No liability can be accepted for damage arising due to incorrect use.

- 13.1 For faults in goods supplied only the warranty described in Section 11 (Warranty) shall apply.
- 13.2 HomEvap shall under no circumstances be liable to the other party and/or third parties for consequential damage, such as damage in the form of loss of profit, loss suffered including production loss, costs of shutdown or delay, penalties and other indirect damage.
- 13.3 The liability of HomEvap shall be limited to a maximum of the amount for which HomEvap has covered liability by insurance.
- 13.4 If HomEvap's insurer does not make a payment in any case or the damage is not covered by the insurance, the liability of HomEvap shall be limited to the invoice value of the relevant agreement.
- 13.5 The other party shall indemnify HomEvap for claims of third parties to reimbursement of damage for which HomEvap is not liable based on the previous paragraphs of this Article.
- 13.6 The other party shall inform HomEvap as soon as possible in writing of claims for compensation as described in this Article.