HUMON

ADIABATIC DUCT HUMIDIFIER
H200, H250, H315, HV200

EN USER AND INSTALLATION MANUAL

HUMON - EN- 2026 - 05

TABLE OF CONTENTS

1. SAFETY REQUIREMENTS FOR THE USER	4
2. DELIVERY CONTENT	5
3. OPERATING PRINCIPLE AND SAFETY FUNCTIONS	6
4. DESCRIPTION OF THE HUMON HUMIDIFIER	7
5. SPECIFICATION	8
6. INSTALLATION	9
7. MAINTENANCE	15
8. CASSETTE REPLACEMENT INSTRUCTION	16
9. SERVICE	17
10. CONTROL SYSTEM	18
11. DIAGRAM OF THE HUMIDIFIER OPERATING PRINCIPLE	24
12. TROUBLESHOOTING	25
13. WIRING DIAGRAM	27
14. DECLARATION OF CONFORMITY	28
15. TECHNICAL PARAMETERS FOR THE INSTALLATION OF THE HUMIDIFIER	29



This symbol on the device indicates that electrical and electronic products should not be discarded as unsorted household waste. Electrical and electronic waste must be delivered to designated collection centres and waste acceptance facilities for recovery and recycling. Improper handling of this type of waste could have a negative impact on the environment and human health due to potentially hazardous substances. At the same time, your cooperation in the correct disposal of this product will contribute to the effective usage of natural resources and help avoid negative consequences for the environment and human health.

1. SAFETY REQUIREMENTS FOR THE USER



To avoid the risk of fire, electric shock, or injury, read all the safety instructions and warning texts before using the humidifier.

All electrical connections must be carried out by qualified electricians. If the power lead is damaged, it must be replaced by the manufacturer, the manufacturer's service agent or a similarly qualified person. It is the installer's responsibility to carry out a complete safety and function assessment of the device.

This device may be used by children of 12 years or above or by persons with reduced sensory capacity or reduced physical or mental capacity, or by persons lacking experience or knowledge, provided that they have received instructions for safe use of the appliance or are supervised to ensure safe use, and provided that they are aware of the risks.

The device is not suitable for use by children. Children must not be allowed to play with the device. Children must not carry out cleaning or maintenance without supervision.

This humidifier is only designed for humidity control in ventilation air in dwelling houses and commercial buildings. To maintain a good indoor climate, comply with regulations, the device must never be switched off apart from during service/maintenance or in the event of an emergency.

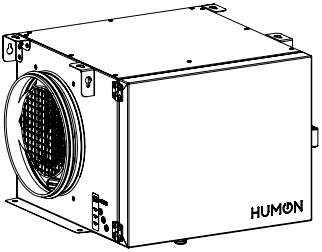
The device should be operated with drinking water and sewage drainage connections. All plumbing work must be carried out by an authorised plumber.

The electrical equipment is tested, connected and grounded in accordance with CE regulations. The device must be plugged in to an electrical outlet that is earthed, in good order and corresponds with all requirements of electric safety.

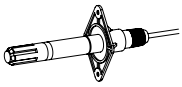
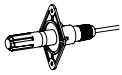
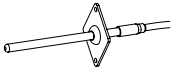
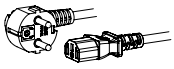
2. DELIVERY CONTENT

The HUMON humidifier should be examined upon receipt to ensure that no visible damage has occurred during transport. If the device is not to be installed immediately, it should be stored in a clean, dry area in the original packaging. Before installing the HUMON humidifier, make sure that the device is complete and undamaged.

The following components are supplied:



Humidifier

	1x Water tap with filter 1/2‘‘ - 3/8‘‘
	1 x water supply hose (L=1.5 m; Ø4 mm; two-piece adapter from 4 mm to 3/8” BSP connection);
	1 x 90° Elbow 1/2”-1/2”;
	1 x touchscreen control panel with a cable and USB;
	1 x combined humidity-temperature sensor T1/RH for connection to a supply air duct (L=2 m);
	1 x combined humidi-ty-temperature sensor T4/RH4 for connection to an extract air duct (L=2 m);
	1 x temperature sensor T3 for measuring the outdoor air temperature (L=2 m);
	1 x connection cable with a coupling to the mains socket (230 VAC; L=1 m).

3. OPERATING PRINCIPLE AND SAFETY FUNCTIONS

HUMON is an adiabatic humidifier intended for humidification via a ventilation duct system of small and medium-sized spaces, such as family houses, flats, and offices.

The purpose of the HUMON duct adiabatic humidifier is to ensure continuous humidification of supply air in the ventilation system under pre-defined parameters. As the supply air passes through the wetted humidification medium, water evaporates into the air stream through an adiabatic process, increasing its moisture content.

The device must be installed in the air supply duct of the ventilation system inside the building. The installation premise must be equipped with a power supply, water connection, and drain trap.

The humidifier operates completely independently and switches on when the outdoor air humidity becomes too low, the air flow is detected and the temperature of the inlet air before the humidifier is more than 14°C.

The device must be switched on in standby mode to continuously monitor air parameters and start the humidification process on time.

The device can be used in any balanced ventilation system.

The switching of the device is linked to the outdoor temperature. This value is controlled by the temperature sensor T3 that must be installed in the outdoor air duct. The default temperature setting for triggering the HUMON device is 12°C. It can be changed in the settings, considering the prevailing outdoor temperature, the regional humidity, and the type of HRV unit used in the ventilation system.



It is recommended to keep HUMON device in standby mode all the time, as it includes several features to maintain the removal of bacteria from water and air. Besides, the humidifier switches on automatically, upon reaching the default parameters set for the outdoor air temperature or indoor relative humidity. Thus, a good indoor climate and a hygienic operation of the device will be maintained.

Subject to certain conditions, the HUMON device humidifies the supplied air up to the relative humidity of 75%. The desired humidity is set by the user, not exceeding the maximum value. The humidification intensity depends on the outdoor air temperature and humidity in the supply duct after the HRV unit. The relative humidity can be additionally raised up to 30% in the supply air.

This additional humidification depends on the inlet temperature, air amount, relative humidity, and outdoor air temperature.

The integrated PTC preheater operates when the air temperature after humidification falls below the setpoint. The higher the temperature of the supply air entering the humidifier, and the lower the room temperature setpoint, the less energy the preheater will consume. If the humidifier is installed in an air heating system, the temperature of the air entering the humidifier must not exceed +45 °C.

The maximum humidification capacity depends on the air temperature, relative humidity, and airflow through the humidifier.

The device contains heating elements that must not be touched when hot. Before opening the door, the device must be switched off for at least 1 minute.



In case of a power failure, the humidifier will not start automatically after the power has been restored. To start the device, touch the screen.

Safety

The built-in PTC air preheater provides all the advantages of PTC heating technology. Thanks to the PTC effect, the heating elements automatically adjust their power output without exceeding the maximum operating temperature. A mechanical thermal protector switches off the PTC preheater if the permissible safety temperature is exceeded.

An additional built-in temperature sensor inside the humidifier switches off the PTC preheater if the maximum permissible temperature is exceeded.

The integrated water filter in the HUMON humidifier cleans the water, removing Legionella bacteria. The supply water enters the evaporative media already purified. The HUMON water filter uses ultrafiltration technology, which is based on pressure-driven membrane technology, to remove (colloidal) particles, sediment, turbidity, bacteria, and viruses. The efficiency of reducing bacteria with the ultrafiltration process is 99.9999% (Log 6). With ultrafiltration, all dirt particles, bacteria, and viruses are filtered, reducing biofilm growth. The final product of ultrafiltration is clean and safe. Only fresh

water can be used. No water is recycled inside the humidifier. The evaporative media is completely dry if there is no demand for humidification.

The combined temperature and humidity sensor T1/RH1 measures the relative humidity and air temperature in the supply air duct downstream of the HUMON unit. The sensor enables the control system to optimize humidifier operation and prevent condensation in the ductwork under normal operating conditions.

Prevention of Legionella bacteria. When the air humidifier is in standby mode, the water valve opens automatically every 72 hours and the humidifier tubes are washed for 5 minutes, releasing about 5l of water at a pressure of 2.2 bar.

The water valve is protected against dirt by a built-in mechanical filter.

An air purification device — an ionizer — is located after the evaporative media to clean the air from viruses and bacteria. The ionizer neutralizes odors, destroys VOCs, kills pathogens (bacteria, viruses, molds), and helps to control allergens.

4. DESCRIPTION OF THE HUMON HUMIDIFIER

Housing

The housing of the HUMON humidifier is made of aluminium-zinc-coated steel sheet (reaction to fire class A1, corrosion resistance class C4-M / C3-H). The humidifier is easily accessible from the front through the service door, while all external sensors and components are connected via external connectors. The control PCB, water valve, water filter cassette, and evaporative media are located inside the unit, behind the service door. The humidifier is connected to the ventilation system via two external duct connections.

Internal construction

The internal design has been optimized to minimize pressure drop while ensuring efficient humidification. A cassette containing the water filter and evaporative media is installed inside the HUMON humidifier. The supply water passes through the filter before being distributed over the evaporative media. The supply air then passes through the wetted evaporative media, where humidification occurs through natural evaporation from the wet media surface into the passing air. Excess water is drained away. The humidified air then passes through the ionizer and enters the supply air duct.

The PTC heater operates only when the supply air temperature falls below the preset minimum temperature.

Legionella filter

The integrated water filter removes possible Legionella bacteria that may be present in the supplied water. Legionella safety is essential, ensuring that the bacteria do not enter the human respiratory system. This filter is not intended to remove dissolved minerals or reduce water hardness.

The working pressure of the Legionella water filter is up to 4 bar. Operating temperature: 5°C to 40°C.

Combined humidity-temperature sensors (T1 and T4)

The supply duct sensor T1/RH1 and the extract duct sensor T4/RH4 measure the relative humidity and temperature in the ducts. T1/RH1 must be installed in the supply air duct after the HUMON device, and T4/RH4 must be installed in the extract air duct from the treated rooms before the HRV unit. These sensors provide relative humidity and temperature measurements for the humidifier control system.

Temperature sensor (T3)

T3 is an NTC-type temperature sensor to be installed in the intake air duct between the outdoor air intake and the HRV unit. This sensor determines when the HUMON humidifier must be switched on or off.

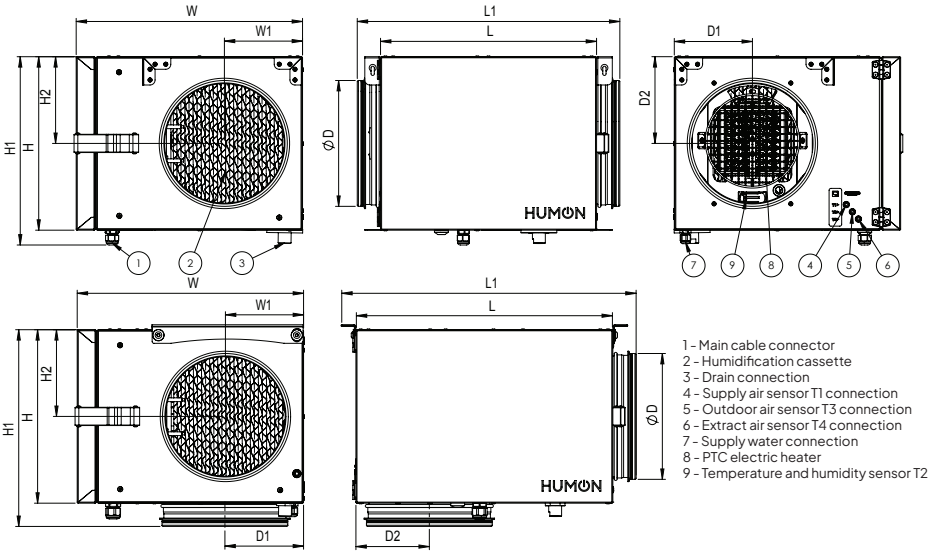
Ionizer

The ionizer remains switched on continuously when the HUMON humidifier is operating. The ionizer produces negative and positive ions to maintain a clean and fresh air supply with significantly fewer viruses and bacteria.

Touchscreen control panel

The HUMON humidifier is equipped with a wired control panel. It is used to set all the required parameters: the humidity and temperature in the supply duct, the desired room humidity, and the outdoor air temperature at which the device is activated. The control panel also displays sensor readings, alarms and service requirements.

5. SPECIFICATION



Technical data

Model	W	H	W1	H1	H2	ØD	L	L1	D1	D2
H200	363	275	125	302	138	200	354	440	125	138
H250	415	345	150	370	170	250	354	440	150	170
H315	463	395	185	420	197	315	354	440	185	197
HV200	361	275	125	315	138	200	406	450	125	115

Description	H200	H250	H315	HV200
Dimensions WxHxL	363×275×354 mm	415×345×354 mm	463×395×354 mm	361×275×406 mm
Air duct connections	Ø200 mm	Ø250 mm	Ø315 mm	Ø200 mm
Humidification capacity	0–3,2 l/h	0–4,8 l/h	0–6 l/h	0–3 l/h
Rated voltage/frequency	230 V / 50 Hz			
Rated current	8,1 A	14,1 A	16,1 A	14,1 A
Heater power	1100 W	1400 W	1800 W	1400 W
Average annual consumption	100–800 kWh	500–1200 kWh	1400–2100 kWh	500–1200 kWh
Maximum water consumption	0–7 l/h	0–9 l/h	0–10 l/h	0–7 l/h
Water supply connection	½" male thread			
Drain connection	1× 90° elbow ½" – ½"			
Operating airflow	80–500 m³/h	200–700 m³/h	300–1000 m³/h	80–500 m³/h
Device weight	9,5 kg	11,7 kg	12,8 kg	11,2 kg

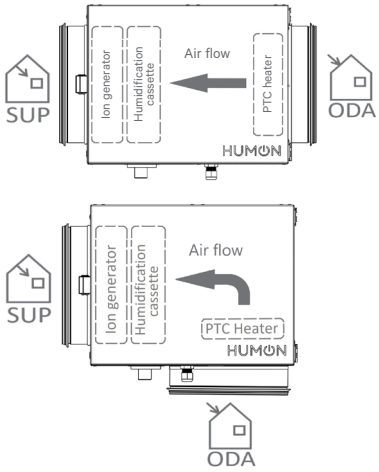
6. INSTALLATION

Depending on the air duct connections, the right or left inspection side of the humidifier must be selected.

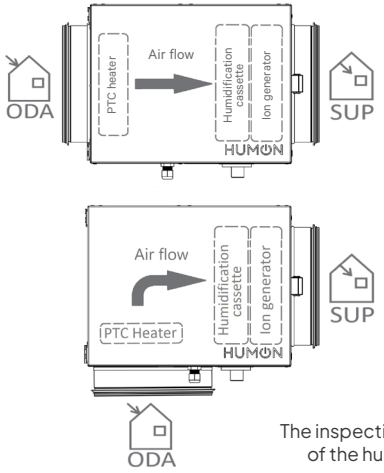
Left inspection side: When facing the humidifier door, the air flows from right to left. The sensor connectors are located on the right side wall, near the door hinges.

Right inspection side: When facing the humidifier door, the air flows from left to right. The sensor connectors are located on the left side wall, near the door hinges.

Left inspection side WFL



Right inspection side WFR

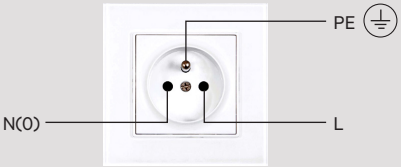


The inspection side of the humidifier

The installation of the HUMON device must comply with the electrical safety regulations applicable in each country. Check which regulations apply in your country.

The device should be protected by a 30 mA residual current device (RCD). All electrical connections must be carried out by a qualified electrician.

The mains plug must remain accessible for servicing when the device is fully installed.

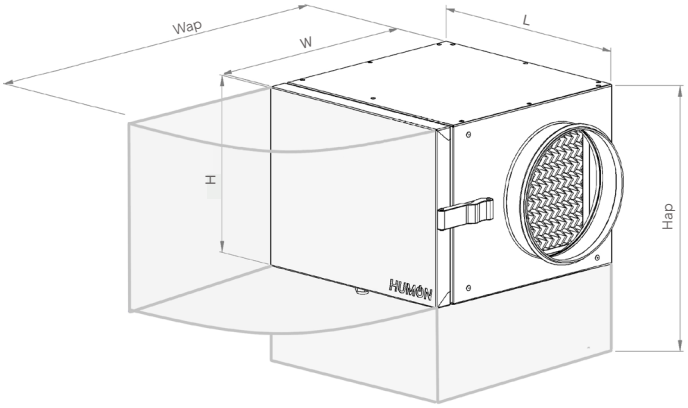


The HUMON humidifier must be installed in the supply air duct as close as possible to the HRV unit. The minimum distance to the nearest duct bend is 200 mm.

The HUMON device must be installed with sufficient space for servicing and maintenance, such as replacing the humidifier cassette and cleaning the drain tray and the ionizer.

All electrical components of the device must be easily accessible when the HUMON humidifier is fully installed.

The water supply hose (Ø 4 mm) must not be shortened or extended. It must remain at its factory length of 1.5 m.



Recommended maintenance area

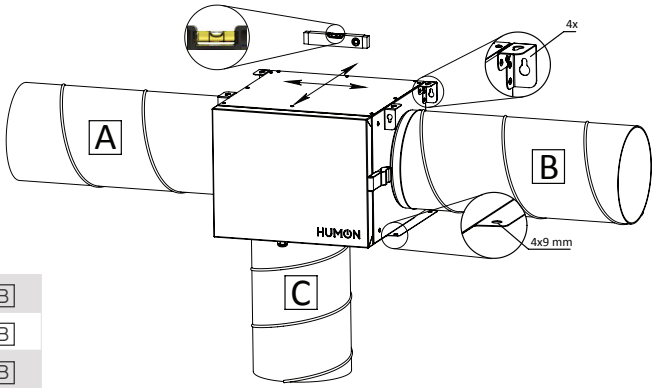
	W	L	H	Wap	Hap
H200	363	354	275	720	400
H250	415	354	345	770	480
H315	463	354	395	820	530
HV200	361	406	275	780	-

The HUMON humidifier must be installed perfectly levelled, which is important because of the drain tray inside the device.

Signal cables must be installed at least 10 cm away from power cables and should not be routed together.

Keep at least 130 mm of clear space below the device and 360 mm in front of the device for door opening and servicing. For HV200 models, also maintain at least 50 mm of clearance on both sides.

Install the HUMON device horizontally in the duct system. The humidifier must be hung and levelled to ensure proper water drainage; see “Installed and levelled HUMON humidifier.” A slight slope towards the water outlet is permitted to ensure complete drainage (the drain tray also has an internal slope for drainage).



H200	A B
H250	A B
H315	A B
HV200	C B

Installed and levelled HUMON humidifier

There are mounting holes at the bottom of the humidifier housing, suitable for mounting the device using various types of brackets. The humidifier can also be suspended using M8 threaded rods. There are also four mounting brackets on the top of the humidifier housing.

Before securing the humidifier in place, level it correctly to ensure that water in the drain tray flows towards the drain outlet. Only then connect the ventilation ducts.

Connect the 4 mm water supply tube to the black connector designed for 4 mm tubing. Connect the other end to the mains water supply using the 3/8" adapter and a 3/8" water connection valve with a built-in filter.

Make sure that the water pressure in the system is between 1.5 and 3.5 bar. The temperature of the water supplied to the humidifier must be between 5°C and 20°C.

The HUMON humidifier is supplied with a ½" drain connection. Use a ½" tube for the drain line. See "Drainage installation schemes."



The drainage pipe must be connected to the wastewater drainage system. The drainage system must be open, unpressurized, and installed with a sufficient slope to allow water to drain freely from the drain tray.

All condensate drain connections must be correctly installed.

Incorrect installation of the drain trap can cause water to accumulate in the humidifier drain tray, potentially resulting in flooding of the surrounding indoor area.

The drainage system must not be connected directly to the municipal wastewater system.



In case of a power failure, the humidifier will not start automatically after the power has been restored. To start the device, touch the screen.

Do not use tools to tighten the drain connection onto the drain tray outlet. Tighten it by hand only (wear gloves).

Install the temperature and humidity sensor T1/RH1 in the supply air duct as close as possible downstream of the HUMON humidifier. The recommended distance from the humidifier is 150–1000 mm. Insert the T1/RH1 sensor plug into the T1 socket on the humidifier housing.

Install the temperature and humidity sensor T4/RH4 in the extract air duct carrying air from the rooms to the HRV unit. The sensor must measure the extract air conditions correctly. Insert the T4/RH4 sensor plug into the T4 socket on the humidifier housing.

Install the temperature sensor T3 in the outdoor air duct, where air enters the ventilation system from outside. The desired humidification parameters can only be set when the T3 sensor measures the correct outdoor air temperature. Insert the T3 sensor plug into the T3 socket on the humidifier housing.

Mount the control panel on the wall or other surfaces near the humidifier. Insert the control panel plug into the USB socket on the humidifier housing.

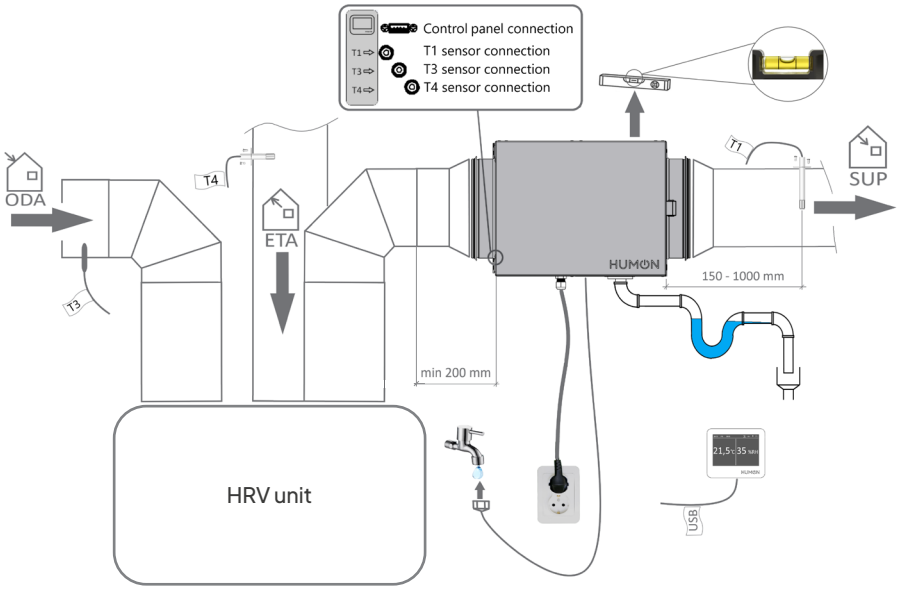
Insert the mains plug into the socket. Check the supply voltage. The control panel should switch on. Wait 5–10 seconds, then touch the screen to start using it.

After 5 minutes, briefly open the door. The green power LED should be on. This indicates that the humidifier is operating correctly.

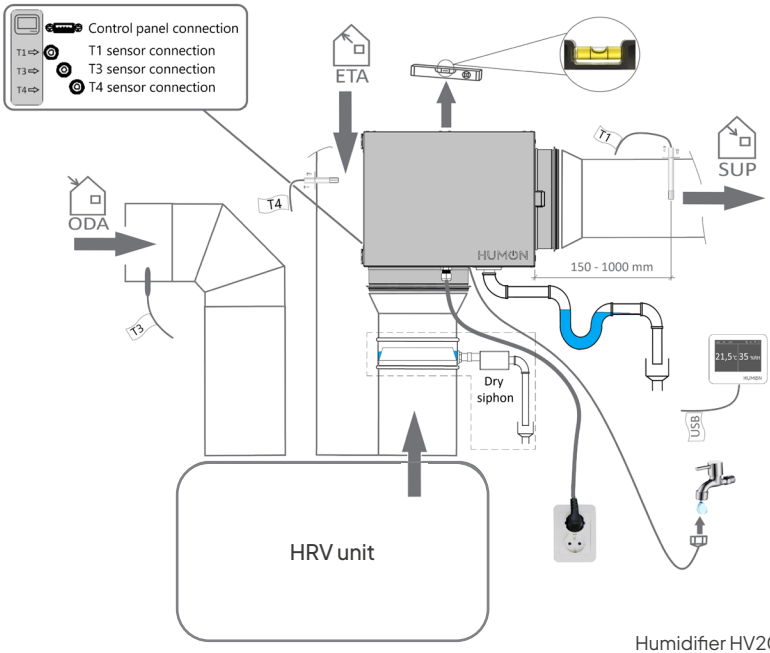
Each time the device is switched on, the PTC heater is automatically activated for 30 seconds, and the water valve is opened for 60 seconds. The sensors must detect changes in temperature and humidity. If no changes are detected within a specified period, the humidifier will stop and an alarm will be triggered. The fault will be displayed in the service menu. Try switching the humidifier off and on again using the main power supply.

2 minutes after the test run, check the entire system for any problems with the water supply or drainage system.

After 1 hour, check the entire system again for leaks in the water supply tubing and drainage system.

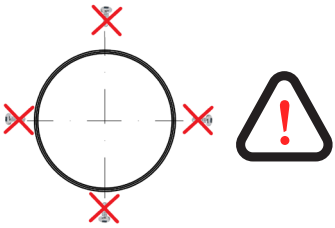


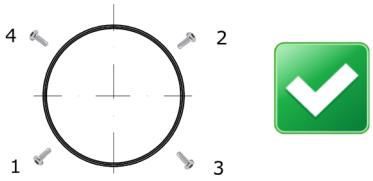
Humidifier H200, H250, H315 installation scheme



Humidifier HV200 installation scheme

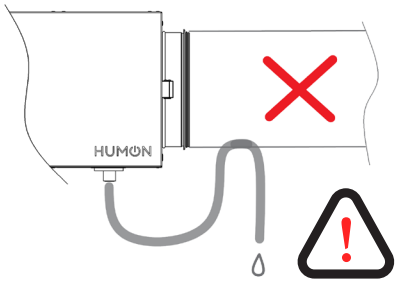
To prevent unwanted moisture from entering the ventilation unit, we recommend installing a condensate collection sleeve in the duct.

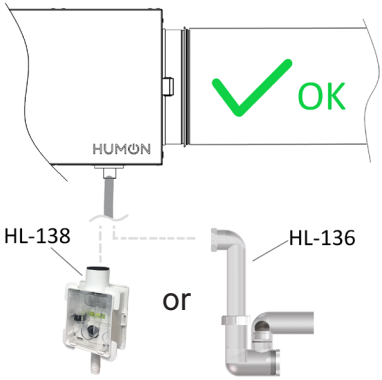


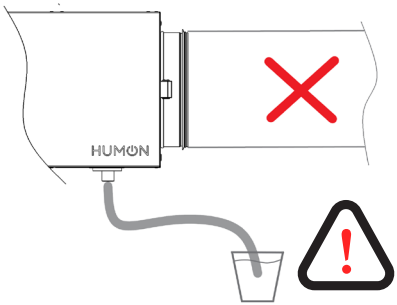


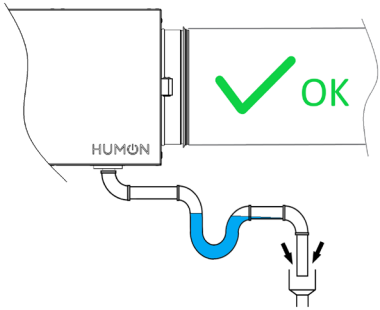
Do not install self-tapping screws along the horizontal or vertical axes, as this may damage the internal components of the humidifier. Self-tapping screws must be installed at a 45° angle to the horizontal and vertical axes.

Air duct connection scheme

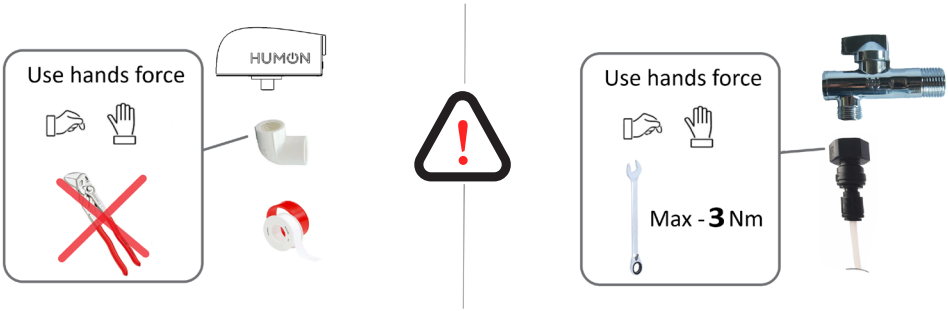








Drainage installation schemes



Water connection scheme

Do not use any tools to fasten the water and drain connector. Fasten it by hand only.

The water supply hose (Ø 4 mm) must not be shortened or extended. It must remain at its factory length of 1.5 m.

7. MAINTENANCE

After the installation of the HUMON device, an overall inspection should be carried out. This should include inspecting the inside of the device and removing debris and tools which on-site contractors may have left behind, a sensor connection check, a water supply tubing check and a drain hose installation check. Close the door, ensuring that the door sealing gaskets have not been damaged after installation.

Mandatory maintenance of the HUMON humidifier must be performed once a year, before the start of the autumn–winter season.



Before performing any inspection work, make sure that the device is unplugged from the electric power supply.

Checking the heater

Check that the PTC heater is clean and that the heating element is not clogged. Clean the heater and pump if necessary. Before checking the PTC, it is necessary to remove the evaporative cassette. Note: first, disconnect the water supply tube. (See the CASSETTE REPLACEMENT INSTRUCTION).

Checking the air ionizer

The ionizer needs to be thoroughly cleaned of dust, as dust can reduce the amount of ions produced in the air. Use a soft brush. Do not use water! Do not bend or break the generator carbon brush! Before checking the generator, it is necessary to remove the evaporative cassette. Note: first, disconnect the water supply tube. (See the CASSETTE REPLACEMENT INSTRUCTION).

Checking the evaporative cassette

The evaporative media must not be cleaned! The humidification cassette must be inspected, and its worn components replaced if necessary, if the relative humidity measured by the T1/RH1 sensor in the air duct does not rise above 45% for an extended period. A service notification will appear on the control panel display based on the number of water valve opening cycles. The service life of the evaporative media depends on the concentration of dissolved minerals in the water (water hardness). If the water hardness exceeds 9 °dGH, the service life of the evaporative media may be shorter than the standard expected lifespan. When replacing humidification cassette components, the drain connection, drain tray, and connecting hose must be inspected and cleaned. The cassette holder must be removed from the drain tray, and the tray cleaned using a soft damp cloth or a soft brush. Soap or stainless steel cleaner may be used. Avoid solvents that could damage the drainage pipes.

The HUMON water filter is integrated into the humidification cassette. During filter maintenance, only the internal filter element (filter cartridge) needs to be replaced, while the filter housing is reused. The service life of the filter cartridge depends on water quality and the amount of impurities present in the water. The service indicator is calibrated for water with a Total Dissolved Solids (TDS) value below 350 ppm. Water quality can be determined by testing a water sample at a specialized laboratory. If the TDS value exceeds 350 ppm, the installation of a water softening or reverse osmosis filtration system is recommended. When the cassette service life indicator reaches 100%, the condition of its components must be inspected and the necessary replacements carried out. The water filter cartridge and evaporative media can be replaced separately; therefore, replacing the entire humidification cassette is not mandatory. For easier and faster maintenance, the entire humidification cassette may be replaced with a new one, eliminating the need to replace individual components separately. Detailed component replacement instructions are provided in the “CASSETTE COMPONENT REPLACEMENT AND SERVICE GUIDE”.

Every year on October 1, an informational service notification (error code No. 25) appears on the control panel, reminding the user to perform the required equipment maintenance.

8. CASSETTE REPLACEMENT INSTRUCTION

• Unplug the HUMON humidifier from the main supply socket.

• Disconnect the water supply.

• Open the humidifier door.

• See water tube disconnecting scheme. Disconnect the cassette from the water supply by pushing the clamp on the water supply connector and pulling the hose simultaneously.

• Before removing the humidification cassette, rotate the black elbow fitting downward to drain any accumulated water. Then, using the integrated handle, carefully pull the cassette out of the HUMON humidifier housing. Exercise caution, as residual water may still drain from the internal components of the cassette.

• Clean the inside of the HUMON humidifier with a wet cloth if necessary. Be careful when cleaning near the ion generator.

• Clean the drain tray by first removing the internal cassette holding element. Check that the drainage outlet is clean.

• Insert a new cassette or remove the housing screws with a screwdriver and replace only the evaporative media: see the CASSETTE COMPONENT REPLACEMENT AND SERVICE GUIDE

• Push in a new cassette to the back wall.

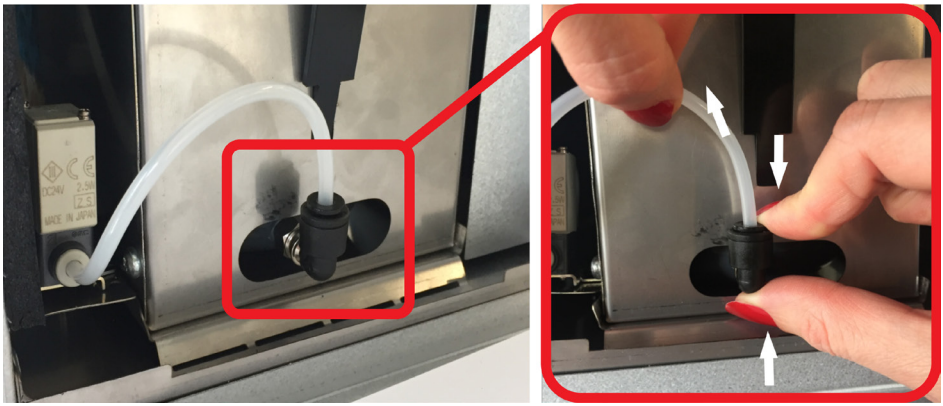
• Connect the water pipe to the water supply connection in reverse order.

• Close the door and open the water supply valve.

• Insert the plug into the socket. The HUMON humidifier must start filling the new filter with water and check all the sensors. After 1 minute, the HUMON humidifier is ready to operate. Follow the steps for starting and checking the humidifier as described in Chapter 6 'Installation'.

• Reset the cassette service life in the advanced menu.

Replacing the cassette requires specific knowledge. Contact an installer in case of any doubts about replacing the cassette.



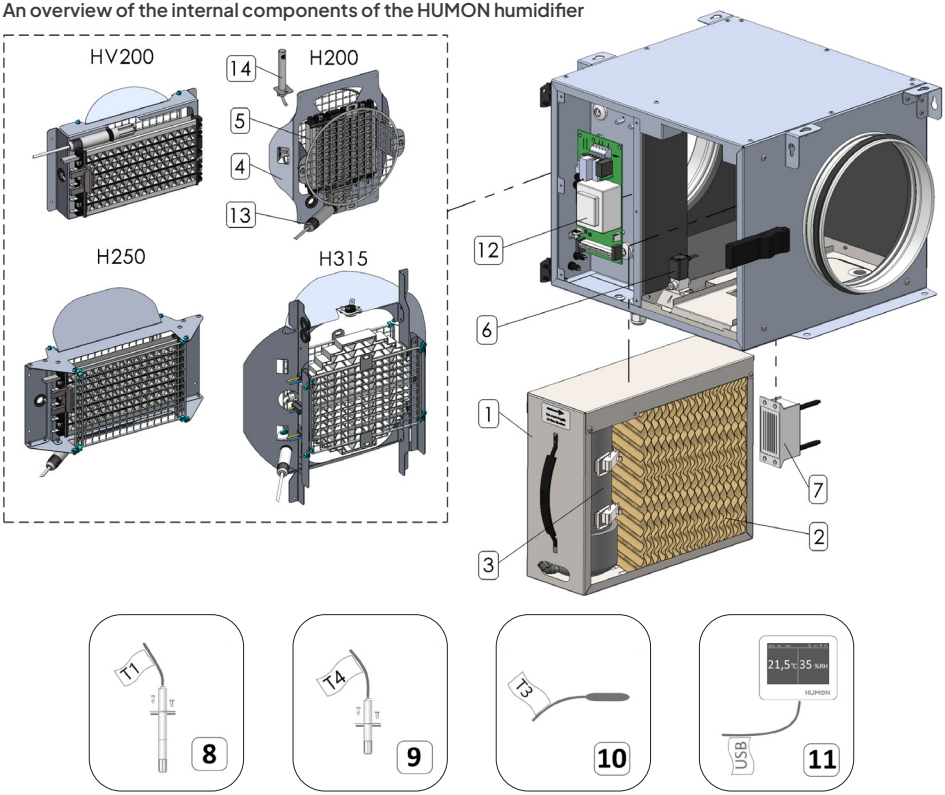
Water tube disconnecting scheme

9. SERVICE

A list of the HUMON humidifier spare parts

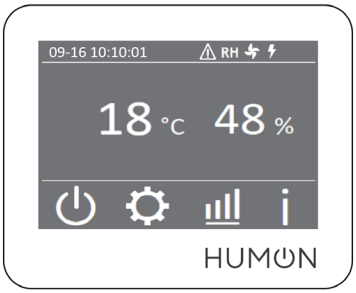
Ref. No	Description	H200	H250	H315	HV200
1	HUMON cassette set with the water filter	20101(WFR), 201011(WFL)	25101(WFR), 251011(WFL)	31501(WFR) 315011(WFL)	20101(WFR), 201011(WFL)
2	HUMON evaporative media	700022	700025	700026	700022
3	HUMON water filter set	70006	700063	700064	70006
4	PTC heater with connectors and brackets	DRK20104 WFR, DRK201041 WFL	DRK25104 WFR, DRK251041 WFL	DRK31504 WFR, DRK315041 WFL	DRKV20004 WFR, DRKV200041 WFL
5	PTC heater	70023	700231	700232	700231
6	Water valve set with wires	VOZTVDW12	VOZTVDW12	VOZTVDW12	VOZTVDW12
7	Ionizer with the connector	70021	70021	70021	70021
8	T1/RH1 temperature and humidity sensor	70030	70030	70030	70030
9	T4/RH4 temperature and humidity sensor	70033	70033	70033	70033
10	T3 outdoor air sensor	70032	70032	70032	70032
11	MK HUMON control panel	70029	70029	70029	70029
12	Main PCB board	70028	70028	70028	70028
13	Internal T2/RH2 temperature and humidity sensor	70031	70031	70031	70031
14	Airflow sensor	70044	70044	70044	70044

An overview of the internal components of the HUMON humidifier



10. CONTROL SYSTEM

Control panel view



- During operation, the display in sleep mode always shows the actual supply air temperature and humidity. The information is provided for the T1/RH1 sensor data.
- You can see the temperature and humidity set-points and the main menu buttons for 5 seconds by touching the screen once

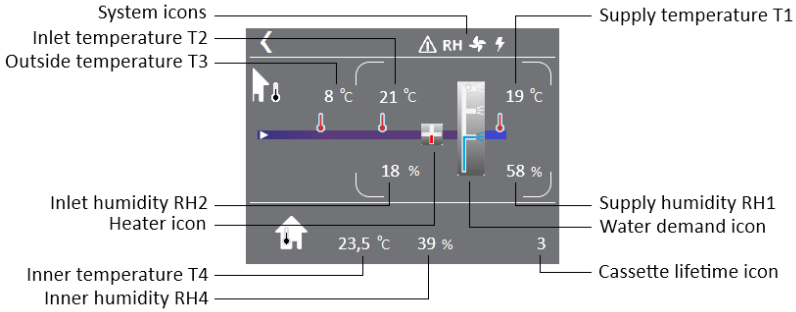
Icons used on the control panel

Icon	Description
	Humidifier off button
	Settings menu
	Live operation graph
	Service and fault list
	Confirmation button
	Cancel button
	Up and down selection buttons
	Temperature markers on all displays
	Humidity marker on all displays
	Back to the main menu button
	Error delete button in the service and fault list. This button reboots the controller but leaves the error displayed in the list
	Toggle the button for another display
	Advanced user internal menu selection buttons for the sensor calibration
	Time and date settings
	Advanced user-locked menu
	Error alert icon in the live operation graph and the service and fault list
	Temperature sensor calibration. Manual calibration of the sensor readings with a calibrated temperature probe using the comparison mode
	Deletion of errors and warnings from the controller and control panel. All data are deleted permanently
	Humidifier cassette or water filter cartridge replacement icon. After replacing the humidifier cassette or the water filter cartridge, tap the icon and confirm the replacement.
	Supply water pressure settings in the locked menu
	Outdoor air temperature setting for humidifier activation in the locked menu.
	Indoor humidity setting in the locked menu, allowing to set the desired humidity level to be reached in the room

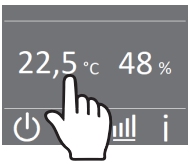
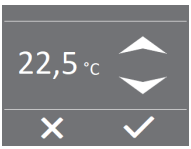
Icons used on the control panel

Icon	Description
	Temperature sensor T3 is deactivated. The humidifier is activated by the airflow sensor or by an external dry contact from a switch or the HRV unit.
	Temperature sensor T4 is deactivated. The indoor humidity demand is not monitored
	T_set temperature control based on the supply air temperature from the HRV unit is deactivated. The temperature setpoint will be taken from the main menu setting.
	Temperature sensor T3 is activated. The humidifier is activated based on the outdoor air temperature.
	Temperature and humidity sensor T4/RH4 is activated. The indoor humidity demand is monitored based on the humidity setting in the advanced user-locked menu.
	T_set temperature control based on the supply air temperature from the HRV unit is activated. The T1 temperature will be maintained at the supply air temperature from the HRV unit, as far as permitted by the available heater capacity.
	If a reverse osmosis filter is installed in the water supply line before the humidifier, the service life of the integrated water filter is extended. If a reverse osmosis filter is installed, the RO button should be grey-white. If no reverse osmosis filter is installed, the RO button should be red.
	Reset the factory settings
	Outdoor air temperature readings
	Indoor temperature readings
	Temperature sensors readings
	Temperature sensor error. The alarm will be displayed in the fault list. The date, time and fault code will be displayed on the control panel
	PTC heater power level. This icon indicates the current operating power level of the PTC heater.
	Humidification level. The icon fill level indicates the current water supply level to the evaporative media.
	Humidification process error. The alarm will be displayed in the fault list. The control panel will display the date, time, and fault code. The icon will flash if an insufficient water supply to the evaporative media is detected. The icon will remain continuously lit if continuous water flow through the valve is detected.
	Indoor sensor error. The alarm will be displayed in the fault list. The date, time, and fault code will be displayed on the control panel.
	Error or fault icon in the top data bar on the control panel display
	Humidification active. This icon indicates that the humidification process is active and running.
	Airflow. This icon indicates that the airflow in the system is sufficient to operate the humidifier
	PTC heater active. This icon indicates that the PTC heater is currently operating.
	Communication error between the control panel and the control PCB board

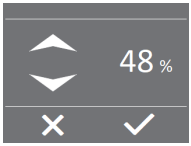
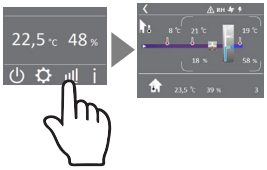
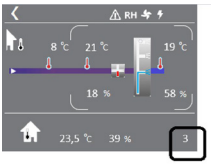
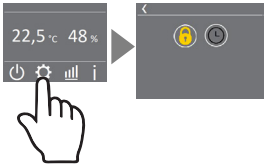
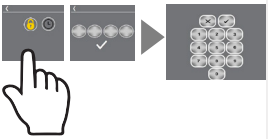
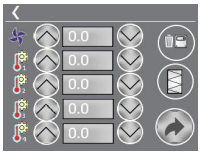
Live operation graph display of the control panel



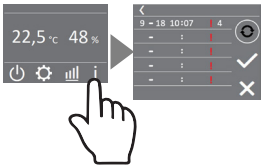
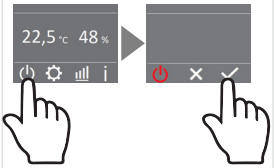
Control Panel Display Information

Control panel display view	Action required
	Starting the humidifier: Tap the screen with your finger. If the screen is in sleep mode, tap the screen to wake it up.
	Display with the temperature and humidity settings - Humidifier off button - Settings button - Live operation graph - Service and fault list Tap the temperature and humidity setpoints to change the settings.
	**Temperature setting** Tap the temperature setpoint to adjust it up to a maximum of 30°C. Change the setting , and confirm 

Control Panel Display Information

Control panel display view	Action required
	**Humidity setting** Tap the humidity setpoint to adjust it up to a maximum of 75%. Change the setting , and confirm
	**Operating graph** The control panel displays all current temperature and humidity readings, along with icons indicating active PTC heater operation and water supply.
	**Durability of the humidifier cassette** The cassette usage icon indicates the estimated contamination level of the water filter and evaporative media from 0 to 100%, where 0% indicates a clean cassette and 100% indicates the maximum contamination level. The calculation is based on the number of water valve opening cycles. For more information, see Chapter 7, “Maintenance”.
	**Settings menu** Time and date settings and the advanced user menu
	**Settings/advanced user menu** The login code is 3971 Calibration of temperature sensors and a permanent deletion of the fault list are possible. The second display shows the factory settings for the system parameters
	**Advanced menu** - EC fan speed control 30–100% - Temperature sensor calibration range from -5°C to +5°C - Permanent deletion of the fault list - Humidifier cassette or water filter cartridge service life reset. Press after replacing either component with a new one. - Second menu display

Information on the control panel displays

Control panel display view	Action required
	**Advanced menu**  - Water pressure in the system (1.5–3.5 bar) - Outdoor air temperature for indoor humidification activation - Indoor humidity setting. When the humidity set-point is reached, the humidifier will switch to standby mode  - Temperature sensor activation. If sensors T3 and T4 are not used for humidifier operation, they must be deactivated in the control panel settings by tapping the corresponding sensor icon.  - Function activated/deactivated  - If the T1/Tset function is activated, the T1 temperature will be maintained at the same level as the air temperature entering the humidifier (T2). If the T1/Tset function is deactivated and Tset is higher than T2, the heater will additionally heat the air by up to 3°C, depending on the airflow and humidification intensity, subject to the maximum available heater capacity. Example: If the air temperature entering from the ventilation unit (T2) is 16°C and Tset is 21°C, the maximum achievable supply air temperature (T1) is 19°C.  - Reverse osmosis filter is deactivated  - Factory settings reset
	**Service and fault list** If any faults occur in the device, information about the fault can be found in the service and fault list. The date, time, and fault code will be displayed.  - Troubleshoot and resolve the fault. The humidifier will resume operation; however, the fault information will remain in the fault list for further reference. To permanently delete the fault information, go to the advanced menu.
	**Switching off the humidifier** Press the button  and confirm  The humidifier can be switched off directly from the mains power supply.

11. DIAGRAM OF THE HUMIDIFIER OPERATING PRINCIPLE

Depending on the set parameters, airflow, outdoor and indoor temperature and humidity, the controller continuously calculates the optimal water supply rate to maintain the supply air humidity as close as possible to the setpoint. For more effective adiabatic humidification or to achieve a higher humidity level, the air needs to be preheated. This should be taken into account when setting the supply air humidification parameters.

There are four controller modes during the humidification process:

0 – The controller monitors the water valve opening cycles and calculates the maximum water supply rate.

After a certain period, the algorithm switches to Mode 1.

1 – The controller calculates the change in humidity over a specified period. If no change in humidity is detected, the algorithm switches to the water-saving Mode 2.

2 – In water-saving mode, the water supply is gradually reduced to zero. Once zero water supply is reached, the algorithm switches to Mode 3.

3 – The controller calculates the difference between the estimated and measured humidity. At specified intervals, the algorithm switches back to Mode 0, and the entire process is repeated.

The duration of the operating cycle depends on the set parameters and the outdoor and indoor temperature and humidity levels.

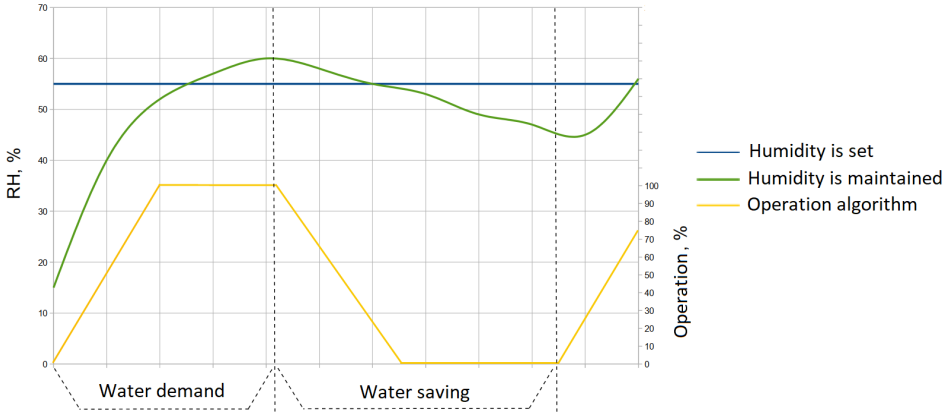


Diagram of the operating principle

12. TROUBLESHOOTING

If the humidifier is not working:

- Make sure the humidifier is connected to the power supply.
- Check all sensor connections to the humidifier.
- If the control panel does not display anything, check whether the cable and connector between the control panel and the humidifier are correctly inserted. Make sure there is no fault information in the live operation graph display of the control panel.



- Before proceeding to the next step, the service and fault list on the control panel must be cleared to allow the controller to reboot.
- Follow the instructions in the Alarm Codes Table to troubleshoot and clear the fault.

Alarm codes on the control panel, their causes and actions

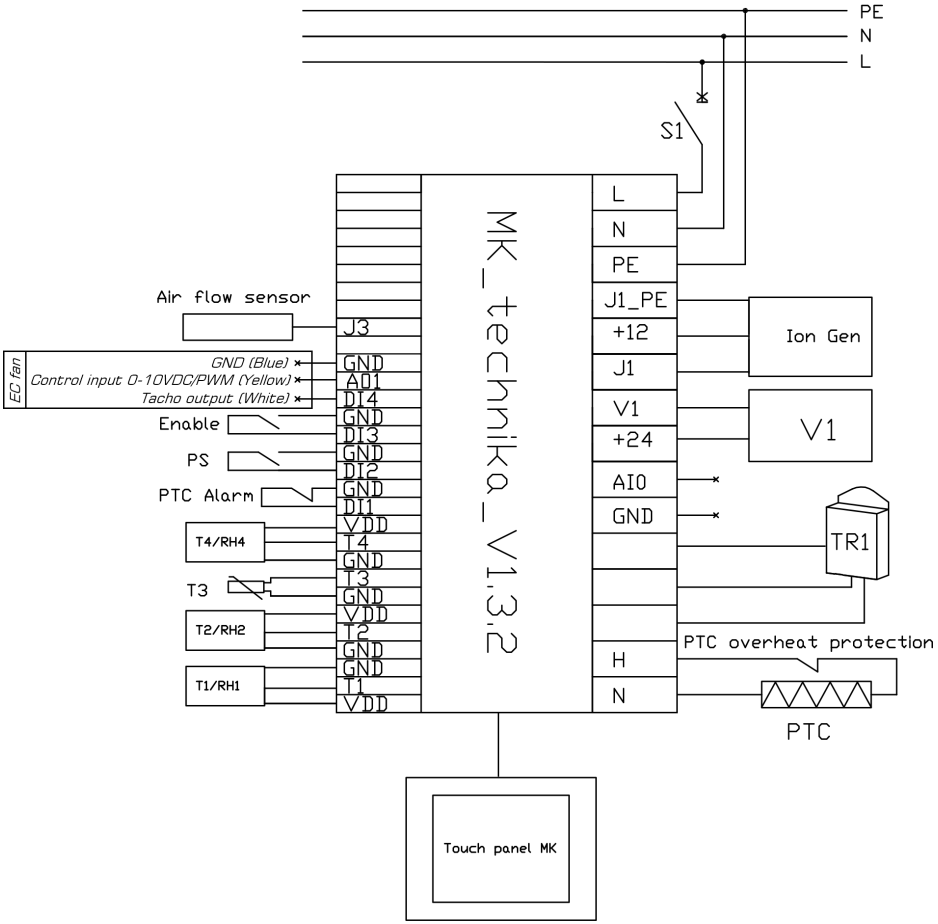
Fault code	Meaning	Possible actions	Operation of the humidifier
! 1	T1/RH1 sensor fault, broken cable or disconnected from the connector	Check the sensor connector. Check the cable for damage; if in doubt, replace the sensor with a new one.	Stops
! 2	T2/RH2 sensor fault, broken cable or disconnected from the connector	Check the sensor connector. Check the cable for damage; if in doubt, replace the sensor with a new one.	Stops
! 3	T3 sensor fault, broken cable or disconnected from the connector	Check the sensor connector. Check the cable for damage; if in doubt, replace the sensor with a new one. The sensor can be tested at 10°C in water or air. The humidifier must start working if other demand signals are active (air flow, external contact, if presents).	Still working**
! 4	T4/RH4 sensor fault, broken cable or disconnected from the connector	Check the sensor connector. Check the cable for damage; if in doubt, replace the sensor with a new one.	Still working**
! 8	The PTC heater is not working	1) Check the airflow. The PTC heater may have switched off due to insufficient airflow. If the airflow is sufficient, (2) switch off the humidifier and close the water supply valve. Allow the evaporative media to dry. After approximately 20 minutes, switch the humidifier back on. The air temperature downstream of the humidifier should start to increase slightly after approximately 15 seconds (after activation from the control panel). Under certain conditions, it may be higher than the inlet air temperature. If the temperature does not increase, contact the installer to have the PTC heater replaced.	Stops
! 9	Incorrect EC fan connection	Check the EC fan connection wires. The error occurs when the controller does not receive a feedback signal from the EC fan while fan operation is enabled on the control panel.	Stops

Alarm codes on the control panel, their causes and actions

Fault code	Meaning	Possible actions	Operation of the humidifier
!11	No water supply, water valve broken	Check that the water supply valve is open. If the valve is open and there is a demand (the outdoor temperature is below 12°C, the airflow icon is active, and the RH icon is active), check whether the filter inside the water supply valve is clean. Check the operation of the water valve. Open the door and disconnect the white tube from the elbow connector at the water filter. Reset the device by unplugging and reconnecting the power cable. If water flows from the valve and stops after 60 seconds, the valve is operating correctly. If water flows continuously or does not flow from the tube at all, the water valve is faulty and must be replaced. If the water valve is operating correctly but the evaporative media remains dry after the valve is opened, the water filter is clogged. If the evaporative media is still in good condition, replace the water filter; otherwise, replace the cassette. If the evaporative media becomes wet but the humidification capacity is low, the media may contain mineral deposits, and the cassette or evaporative media must be replaced. The humidifier can continue to operate, but with reduced evaporation efficiency.	Still working**
!13	No communication between the control panel and the main PCB board 	Check the control panel wiring and the USB connection to the humidifier. Check the cable for damage. Check the LED indicators on the electrical cabinet behind the door. The yellow LED should remain continuously lit, while the green LED should be flashing. If the LEDs do not operate as described, contact the installer to have the cable, control panel, or PCB board replaced.	Still working**
!21	Ionizer fault	Clear the fault and restart the humidifier. If the fault occurs again, contact the installer to have the ionizer replaced. The humidifier can continue to operate.	Still working
!22	Airflow sensor fault	Clear the fault and restart the humidifier. If the fault occurs again, contact the installer to have the sensor replaced.	Stops
!23	Water valve fault*	Check the operation of the water valve. Open the door and disconnect the white tube from the elbow connector at the water filter. Reset the device by unplugging and reconnecting the power cable. If water flows from the valve and stops after 60 seconds, the valve is operating correctly. If water flows continuously, the water valve is faulty and must be replaced. We recommend turning off the water supply until the service technician arrives.	Still working**
!25	Maintenance notice	The maintenance notification is displayed on October 1 every year. It serves as a reminder of the mandatory annual maintenance to be performed in accordance with the procedures specified in Section 7, MAINTENANCE, of the USER AND INSTALLATION MANUAL.	Still working

* Fault indicated from device modification 202/23 (see sticker on device)
** Valid from device modification 202, 250, 315, V200/26 (see sticker on device)

13. WIRING DIAGRAM



Abbreviation	Meaning
PS – DI2/GND	Connecting an additional pressure switch. The pressure switch indicates whether sufficient airflow is present in the system.
Enable – DI3/GND	Dry contact for switching the humidifier on/off. Factory setting: permanently closed.
AI0/GND	0–10 V control signal from the HRV unit. The humidifier is activated when the signal reaches 2.5 V.
AO1/DI4/GND	0–10 V control signal for the EC fan. Adjustable from 0 to 100% via the control panel. The fan starts operating when the control signal reaches 3 V.

14. DECLARATION OF CONFORMITY

This declaration confirms that the product complies with the requirements of the following **Council Directives and standards:**

2014/30/EU	Electromagnetic compatibility (EMC)
2014/35/EU	Low Voltage Directive (LVD)
2011/65/EU	RoHS Directive

Manufacturer: UAB MK Technika, Vilniaus g. 36K1, LT-14200, Lithuania
Product: HUMON-H

Complies with the following standards:

Safety standards	LST EN ISO 12100:2011
	LST EN 60204-1
	LST EN 60335-1: 2021
	LST EN 60335-2-98:2003
EMC standards	LST EN IEC 61000-6-1:2019
	LST EN 63000:2019
	LST EN 55014-1: 2006/A2:2011 LST EN 55014-2: 1997/A2:2008

The product has been CE marked since 2022
UAB MK Technika (2022), Vilnius region, Lithuania

Head of Technical Department

15. TECHNICAL PARAMETERS FOR THE INSTALLATION OF THE HUMIDIFIER

	Name	Parameter	Note
AIR	Minimum airflow	H(V)200 - 80 m³/h H250 - 200 m³/h H315 - 300 m³/h	If the operating airflow is below the minimum required airflow, a pressure switch or an external dry contact must be installed to enable humidifier operation.
	T1/RH1 sensor	For measuring supply air temperature and humidity	The sensor is installed 150–1000 mm from the humidifier.
	T4/RH4	For measuring the temperature and humidity of the extract air from the rooms	The sensor is mounted to the extract air duct up to 2000 mm distance from the humidifier
	Outdoor air temperature sensor T3	12°–15°C	Outdoor air temperature for humidifier start/stop control. When the outdoor air temperature exceeds 15°C, the humidifier stops operating. Sensor T3 can be deactivated via the Advanced User Menu.
WATER	Water supply tube Ø4 mm	1.5 meter length, prepared at the factory	The Ø4 mm tube must not be shortened or extended. It must remain at its factory length of 1500 mm.
	Water tap	With filter	A water supply valve with a built-in filter must be installed in the water supply line before the humidifier. It protects the water supply components from clogging. The filter should be cleaned annually.
	Water pressure and temperature in the humidifier water supply line	1,5–3,5 bar 5°–20°C	If the water pressure is higher than the recommended value, a pressure regulator should be installed to reduce it to the recommended level. If the water temperature is too high, we recommend reducing it using a thermostatic valve.
	Reverse osmosis filter	1.5–3.5 bar H(V)200 - 0–7 l/h H250 - 0–9 l/h H315 - 0–10 l/h	If a reverse osmosis filter is installed before the humidifier, the operating characteristics of the selected filter (operating cycles, flow capacity, etc.) must be evaluated to ensure a minimum water pressure of 1.5 bar at the humidifier inlet. The reverse osmosis filter flushing cycles must not coincide with the humidifier operating cycles. It is recommended to install a water storage tank together with the reverse osmosis filter to ensure the required water flow rate for humidifier operation.
DRAINAGE	Hanging and levelling the humidifier with a spirit level	The humidifier must be installed well levelled	The drain tray inside the humidifier is sloped towards the drain outlet to ensure proper water drainage.
	Water Drainage Traps	HL-138, HL-136	The drainage system shall be equipped with a drain trap to prevent sewer odours from entering the supply air.
	Drainage system	1/2" plastic elbow fitting.	The drainage system must be open, unpressurized, and installed with a sufficient slope to allow water to drain freely from the drain tray. It is not recommended to connect the humidifier drain to the drainage systems of other devices, as these may include circulation pumps or other components that could restrict free drainage.
ELECTRICITY	The cable positioning	100 mm	Signal cables must be installed at least 100 mm away from mains power cables.
RECOMMENDED SETTINGS	Supply air temperature from the ventilation unit before the humidifier	19°–23°C	The humidifier does not operate if the air temperature downstream of the ventilation unit (before the humidifier) is below 14°C. Adiabatic humidification becomes less effective at low air temperatures. The PTC heater in the humidifier can increase the incoming air temperature by up to 3°C (for more information, see "Control Panel Display Information – Advanced User Menu").
	Supplied temperature T1	18°–19°C	Recommended parameter to set
	Supplied humidity RH1	50% - 65%	Recommended parameter to set
	Humidifier operation		From left to right: humidification demand / airflow active / heating demand. The humidification and heating demand varies depending on the operating conditions and the current stage of the process. The airflow icon must always be active.

* Is valid from device modification 202,250,315,V200/26 (see sticker on device)

Absolute humidity in grams per one kilo of air (g/kg)

Relative humidity, %	Temperature, °C												
	14°C	15°C	16°C	17°C	18°C	19°C	20°C	21°C	22°C	23°C	24°C	25°C	26°C
RH29%	2,9	3,1	3,3	3,5	3,8	4,0	4,3	4,6	4,9	5,2	5,5	5,8	6,2
RH31%	3,1	3,3	3,4	3,8	4,0	4,3	4,6	4,9	5,2	5,5	5,9	6,3	6,6
RH33%	3,3	3,5	3,8	4,0	4,3	4,6	4,9	5,2	5,5	5,9	6,3	6,7	7,1
RH35%	3,5	3,7	4,0	4,3	4,5	4,8	5,2	5,5	5,9	6,2	6,6	7,1	7,5
RH37%	3,7	4,0	4,2	4,5	4,8	5,1	5,5	5,8	6,2	6,6	7,0	7,5	7,9
RH39%	3,9	4,2	4,5	4,7	5,1	5,4	5,8	6,1	6,5	6,9	7,4	7,9	8,4
RH41%	4,1	4,4	4,7	5,0	5,3	5,7	6,0	6,4	6,9	7,3	7,8	8,3	8,8
RH43%	4,3	4,6	4,9	5,2	5,6	6,0	6,3	6,8	7,2	7,7	8,2	8,7	9,2
RH45%	4,5	4,8	5,1	5,5	5,8	6,2	6,6	7,1	7,5	8,0	8,5	9,1	9,6
RH47%	4,7	5,0	5,4	5,7	6,1	6,5	6,9	7,4	7,9	8,4	8,9	9,5	10,1
RH49%	4,9	5,2	5,6	6,0	6,4	6,8	7,2	7,7	8,2	8,7	9,3	9,9	10,5
RH51%	5,1	5,5	5,8	6,2	6,6	7,1	7,5	8,0	8,5	9,1	9,7	10,5	10,9
RH53%	5,3	5,7	6,0	6,5	6,9	7,3	7,8	8,3	8,9	9,4	10,0	10,7	11,4
RH55%	5,5	5,9	6,3	6,7	7,1	7,6	8,1	8,6	9,2	9,8	10,4	11,1	11,8
RH57%	5,7	6,1	6,5	6,9	7,4	7,9	8,4	9,0	9,5	10,2	10,8	11,5	12,2
RH59%	5,9	6,3	6,7	7,2	7,7	8,2	8,7	9,3	9,9	10,5	11,2	11,9	12,6
RH61%	6,1	6,5	7,0	7,4	7,9	8,4	9,0	9,6	10,2	10,9	11,6	12,3	13,1
RH63%	6,3	6,7	7,2	7,7	8,2	8,7	9,3	9,9	10,5	11,2	11,9	12,7	13,5
RH65%	6,5	6,9	7,4	7,9	8,4	9,0	9,6	10,2	10,9	11,6	12,3	13,1	13,9

Too dry
Humidity is low
Optimal
Too humid

HUMON