

HUMIDIFIER

HT-1445, HT-965 and HT-485

USER MANUAL





Contronics Engineering B.V., Ambachtsweg 8, 5492 NJ Sint-Oedenrode, The Netherlands, hereby declares that products HT-1445, HT-965 and HT-485 produced and delivered by Contronics Engineering B.V., are in accordance with the following CE directives:

EMC-Directive : 2004/108/EG

Directive for low-voltage
electrical installation : 2006/95/EG

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1. PREFACE

This user manual contains the operating, installation and maintenance instructions for the ultrasonic humidifier of types HT-1445, HT-965 en HT-485. These have an automated fluid exchanger.

WARNING

It is possible that bacteria could be present in the humidifier's water supply. Some bacteria (Legionella) could be harmful to health if they are present in the aerosols that are blown out by the humidifier.

Through the construction and materials used, Contronics has ensured that the stimulation of bacterial growth is kept to the absolute minimum. In order to ensure the supply of pure water, it is strongly recommended that demineralised water is used (see the Contronics product range). Contronics cannot be held liable for any harm caused by bacteria or micro-organisms. It is the responsibility of the user to regularly carry out maintenance and to check the quality of the supplied water.

IMPORTANT

Although the installation of this product may appear quite simple for experts, the manufacturer urges the installer to carefully read through the instructions before starting to install the device.

2. INTRODUCTION

Principle of ultrasonic air humidification

Minute water droplets with a size of 1 to 3 microns are ejected above the water surface by means of high-frequency vibrations (1.7 MHz). The humidifier's air movement system ensures that these water droplets are then blown into the area to be humidified. The major advantages of this humidifier are the very low energy consumption, the limited amount of maintenance required and the low noise level.

Capacity

As a result of the very high frequency of 1.7 MHz, the water droplets are minute, causing them to evaporate quickly and thereby cause less condensation in the humidifier's distribution pipes on their way towards the area to be humidified.

Water quality

Although the humidifier itself on plain tap water can be connected up to 8 ° German hardness, recommends Contronics demineralised water. Maintenance of the device is kept to a minimum and the life of the vibrating images is significantly extended. This will also prevent all kinds of substances from the tap water, such as lime, salts, minerals and bacteria to moisten in the space. Contronics has various filters in its product range, which work on the basis of reverse osmosis. (See also warning on page 4)

3. SAFETY REGULATIONS

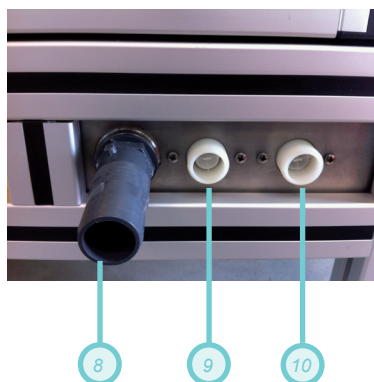
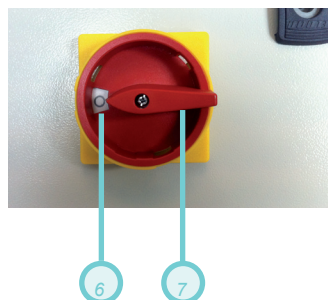
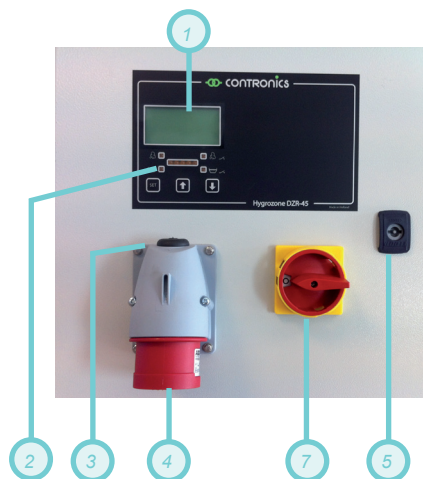
IMPORTANT

The humidifier has an open water tank. Any overflow of the water tank could damage the electronics inside the humidifier.

The following measures must always be observed:

- Always disconnect the mains voltage from the humidifier before moving it and/or carrying out maintenance activities.
- Always keep the humidifier horizontal and motionless while it is in operation and for up to 2 minutes afterwards.
- Ensure that the water is always discharged via the outlet and ensure that this is never blocked.

4. CONNECTIONS AND FUNCTIONS



1. Readout window.
2. Indication LEDs.
3. Push buttons.
4. Mains connection.
5. Lock
6. Indication.
7. On/off turn button.
8. Water drain.
9. ECAS supply.
10. RO water supply.

Figure 1 Connections and functions.

5. INSTALLATION INSTRUCTIONS

IMPORTANT

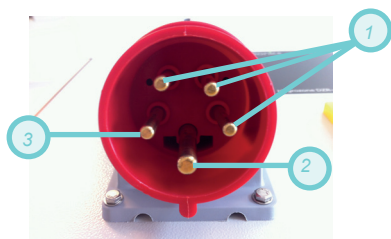
The guarantee will become void if the humidifier is installed incorrectly or if it is handled in an improper manner.

1. Place the humidifier in an environment with a temperature between 0°C and 35°C and humidity < 100%.
2. Place the humidifier in a level position (2-dimensional).
3. Means the area consider opening the doors for maintenance.

6. ELECTRICAL CONNECTIONS

Supply voltage (230/400VAC $\pm$ 10%)

Ensure there is an earthed wall socket (3-fase, 0 en earth) next to the humidifier.



1. 3-phase.
2. Earth.
3. 0.

7. WATER CONNECTIONS AND FLUSHING CYCLE

IMPORTANT

Thoroughly flush out the piping before connecting the humidifier in order to prevent installation debris from blocking the intake valve.

Water supply

The humidifier has an integrated flow-reduction valves and can handle a water pressure from a minimum of 1 bar to a maximum of 6 bar. The water level in the humidifier is controlled by a float switches and a solenoid valves.

Demineralised (R.O.) water must be used for the humidifier and will provide adequate protection against bacteria. The use of plain tap water will lead to faster contamination of the water tank and transducers, which will result in a shorter service life. Moreover, the dissolved calcium and mineral particles in ordinary tap water will be blown into the area to be humidified together with the fog droplets and will be precipitated in the area. Depending on the hardness of the water, this could cause a layer of dust after only a few days (see also the warning on page 4).

Water discharge

The outlet of the pipe must be free.

IMPORTANT

The water discharge connection point on the humidifier must constitute the highest point on the water discharge channel. The water discharge is not pressurised. A blocked outlet could damage the humidifier.

A blocked water discharge channel could cause the humidifier to overflow. For this reason, never place the humidifier on a tray with raised edges as this could cause damage to the humidifier for which the manufacturer cannot be held liable.

8. AIR CONNECTIONS

Air supply

Ensure a clean air supply without water droplets. Any air supply channel must be free from obstructions.

Air outlet

The air outlet must always be extended by a 90° turn and 100 cm pipe to allow larger droplets to be captured. Mount the outlet so that it slopes towards the humidifier to ensure that any condensed fog can flow back.

The connected pipe must be free from dust, dirt and oil residues. If an outlet opening is blocked, the capacity will be reduced. The length of the air outlet channel to the outlet may not exceed 6m with a diameter that remains the same.

9. SWITCHING ON AND STARTING UP/FUNCTIONAL TEST

Switching on

Check the following before the humidifier is switched on for the first time:

- The humidifier is positioned level.
- All pipes have been properly connected.
- The mains voltage is correct and connected.
- The water discharge channel has been connected according to the instructions.
- The water supply has been connected according to the instructions. The water piping has been flushed in order to prevent any installation debris blocking the water valve.

IMPORTANT

Never switch the mains voltage on if the humidifier is not in the correct position, as this would cause the transducers to burn.

Start up and functional test

- Open the water valve
- Switch on the power and check if:
 - a. The water runs to the humidifier.
 - b. The water flow stops after about 20 seconds - 20 minutes.
(depending on the water pressure)
 - c. Set capacity at 100%.
 - d. The production of mist starts after a few seconds.
- Switch off the power and check if:
 - a. The water content is drained away.
 - b. After about 5 minutes the water reservoir is emptied completely.
- Switch on the main supply again.
- Set the capacity to the desired value.
- Control if necessary the airspeed.

IMPORTANT

Overheating of the humidifier will be damaged beyond repair

The following conditions could cause overheating:

- **A blockage in the air inlet.**
- **A blockage in the air outlet.**
- **Air intake temperature too high.**
- **Water temperature too high.**
- **Water discharge blocked.**
- **Ambient temperature too high.**
- **Ventilator speed set too low.**

10. MAINTENANCE

Regular maintenance is important for the optimum operation of the humidifier and to maintain hygiene.

The maintenance interval of the water reservoir will depend on the quality of the water and the purity of the air that is sucked in. The transducers must be replaced after approximately 20,000 operating hours (i.e. after about 2 years in the case of continuous use).

Check the following before starting maintenance or shipping the humidifier:

- The mains plug has been removed from the socket and the ventilator is not moving.
- The water supply has been closed.
- The water supply pipe has been removed.
- The water reservoir is empty and the water discharge hose has been removed.
- The humidifier remains horizontal while dismantling.

IMPORTANT

All maintenance must be carried out by Contronics or by an organisation authorized by Contronics.

11. REPLACING SPARE PARTS

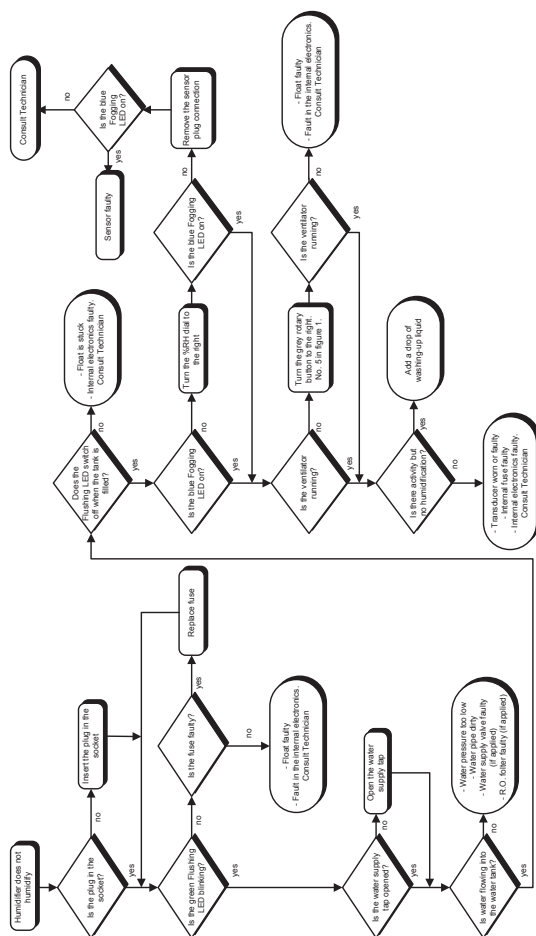
Replacing the transducers

The replacement of the transducers can only be done by Contronics or representatives authorised by Contronics.

12. APPLICATIONS OF THE HUMIDIFIER

Various information sheets and drawings are available covering different applications. These can be downloaded from www.contronics.nl.

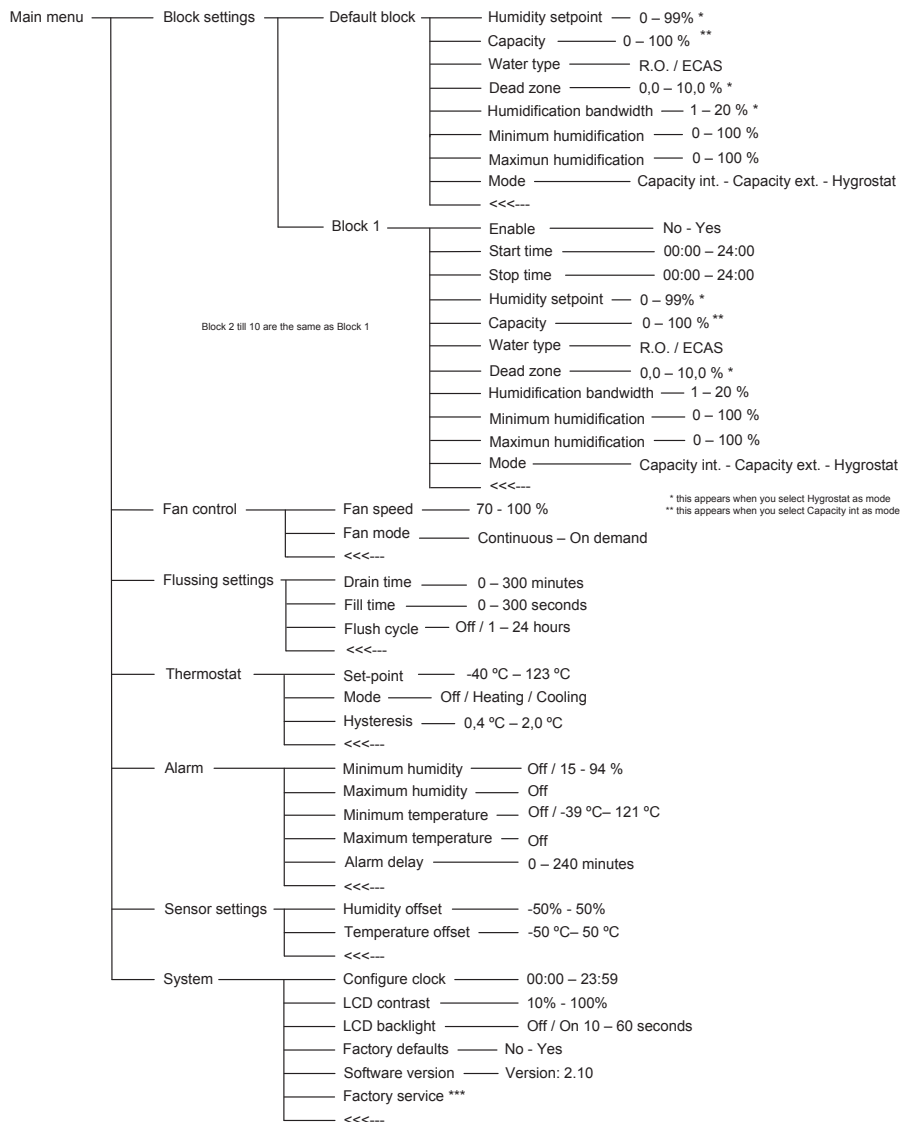
13. MALFUNCTIONS



14. TECHNICAL SPECIFICATIONS

	HT-1445	HT-965	HT-485
Transducer frequency	1,7 MHz	1,7 MHz	1,7 MHz
Maximum capacity	100 kg/hr (adjustable)	65 kg/hr (adjustable)	35 kg/hr (adjustable)
Service life of the transducers	10.000-20.000 hour	10.000-20.000 hour	10.000-20.000 hour
Size of water droplets	1-3 micron	1-3 micron	1-3 micron
Diameter of outlet flange	4 x 200 mm	4 x 160 mm	4 x 110 mm
Diameter of suction flange	435 mm	435 mm	435 mm
Air flow	adjustable (0-800 m ³ 0 Pa)	adjustable (0-800 m ³ 0 Pa)	adjustable (0-800 m ³ 0 Pa)
Outlet pipe length	40 meter	40 meter	40 meter
Water pressure	1-6 bar	1-6 bar	1-6 bar
Water connection	2 x 3/4" external	2 x 3/4" external	2 x 3/4" external
Water discharge	1" external	1" external	1" external
Content of water tank	24 liter	16 liter	8 liter
Mains voltage	400V ± 10% 50 Hz	400V ± 10% 50 Hz	400V ± 10% 50 Hz
Power consumption	8kW	5.4kW	2.8kW
Ambient temperature	0 °C till 35 °C	0 °C till 35 °C	0 °C till 35 °C
Ambient temperature compared to supply air temperature	Non condensing	Non condensing	Non condensing
Dimensions	112 (L) x 95 (W) x 178 (H) cm	112 (L) x 95 (W) x 137 (H) cm	112 (L) x 95 (W) x 96 (H) cm
Housing	Cabinet: plastic and aluminium Water tank: Stainless steel 316L	Cabinet: plastic and aluminium Water tank: Stainless steel 316L	Cabinet: plastic and aluminium Water tank: Stainless steel 316L
Weight	400 kg	320 kg	240 kg

15. MENU OVERVIEW



*** Only accessible with the manufacturer's access code

DISCLAIMER

Contronics works continuously on the further development of its humidifiers. We therefore reserve the right to modify the design, construction and technology of the product at any time. For this reason, no claims can be made based on the data, illustrations and description in this user manual.

Additional, up-to-date information is available on www.contronics.nl



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