



# HygroMATIK®

member of CAREL group

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## Direct room humidifiers

Isothermal and adiabatic systems  
for direct room humidification



- Simple installation directly in the humidification environment
- Ideally suited for retrofitting
- Autonomous operation or connection to the building control system possible
- Modbus interface for integration into the building control system



Humidification for best conditions  
for industry, manufacturing processes, public buildings and offices

# Systems for direct room air humidification

Optimal air humidity for a healthy and stable room climate

## Direct room air humidification – flexible and independent

The air humidity in a room has a decisive influence on the room climate and therefore a great influence on the well-being of people. Even sensitive production processes or the storage of hygroscopic materials such as paper, wood or fabric can be optimised by controlling the humidity.

Systems for direct room air humidification are used, for example in the following areas of application:

- Office buildings, hotels and conference centres (comfort applications)
- Museums and antiquarian bookshops (conservation of value)
- Production and storage rooms (dust binding and quality assurance)
- Industrial sectors such as the luxury food and food industry (prerequisite for maturing processes), textile industry (avoidance of electrostatic charge)

**Direct room air humidification** is a simple and flexible way to regulate the humidity in rooms professionally. Space-saving complete systems for direct room air humidification offer many advantages:

- Fast and flexible installation directly in the humidification environment
- Ideal for small to medium-sized rooms and buildings, as there is no central ventilation or air conditioning system required
- Uncomplicated retrofitting of humidifiers
- Extension and optimisation by external controllers or sensors possible
- Modbus interface for optional integration into the building management system



Museums

Production and storage rooms

Food and beverage industry

## Two high-quality system solutions for different applications

In order to optimally serve applications with different conditions, we offer two system solutions for direct room humidification, both based on proven functional principles. Developed for long-lasting use, both systems are carefully manufactured from high-quality components.



**Isothermal:**  
**HygroMatik MiniSteam E**  
Electrodes Steam humidifier



### Operating principle:

Water is pumped into a cylinder, evaporated by means of live **electrodes** and delivered directly into the humidification environment.



**Adiabatic:**  
**Carel humiSonic direct**  
Ultrasonic nebuliser



### Operating principle:

Water is finely atomised by **high-frequency vibration** and is then airflow absorbed. The energy required for evaporation cools the air.



### Decision-making aid

- ✓✓✓ Excellent
- ✓✓ Very good
- ✓ Good

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	MiniSteam E	humiSonic direct
Operation with drinking / tap water	yes	not useful
Operation with demineralised water	not possible	requirement
Suitable for comfort air conditioning	✓✓✓	✓✓✓
Durable and robust	✓✓✓	✓✓
Effect on room temperature	remains constant	cooling effect
Sound level	✓✓✓	✓✓
Maintenance	✓✓	✓✓✓
Integrated Modbus interface	yes	yes
LED display	integrated	optional
Certification	CE, VDE, EAC	CE
Investment costs per kg humidification	✓✓✓	✓
Operating costs energy	✓	✓✓✓
Operating costs water (water treatment)	✓✓✓	✓

# HygroMatik MiniSteam E (electrodes)

Isothermal steam humidifier for operation with drinking water

## Hygienic, compact and durable with integrated ventilation unit

The HygroMatik MiniSteam E is a steam humidifier for direct room humidification. It adapts automatically to **all drinking water qualities**. Connection to an additional RO or softening system is therefore not necessary. This makes the HygroMatik MiniSteam E a compact complete system.

Its integrated, smooth-running ventilation unit distributes the **hygienically pure, mineral-free steam** evenly throughout the room and enables optimum humidification without the need for an air conditioning system. The ambient temperature is not changed by the isothermal humidification process.

The housing tray of the MiniSteam E is made of corrosion-resistant stainless steel. For easy and thorough maintenance, the unit cover can be completely removed. For safety reasons, the unit is lockable to prevent unauthorised access. The excellent HygroMatik quality also ensures a **long service life**.

## Various options for individual configuration

The MiniSteam E can be equipped with individual features and configuration with numerous options specifically tailored to the needs of different areas of application. So almost every project requirements can be optimally fulfilled. If necessary, it is possible to retrofit these options at a later date.

- **SuperFlush:** The innovative cylinder flushing device significantly extends the cylinder service life
- **HyFlow:** The DVGW-compliant system separator protects drinking water from contamination
- **HyCool:** The integrated waste water cooling ensures that the temperature of the waste water does not exceed 60 °C
- **Choice of electrode shapes and materials:** Allows for optimal adaptation to different water qualities



## Maximum operating convenience integrated – all information at a glance

The MiniSteam E is equipped with a clear LED display. This means that all important device and process information is always in view. The simple display symbols give immediate information on the status of the steam humidifier. The control buttons allow quick and intuitive navigation through the clear and easy to understand menu.



## Reliable and safe thanks to precise control technology

The MiniSteam E processes all common control signals and adapts itself automatically to the existing drinking water quality.

- Continuous or single-stage control
- Integrated PI control
- Integrated communication protocol Modbus RTU
- Automatic system test
- 2 potential-free remote signals
- Integrated galvanically isolated serial interface RS-485 (EIA-485)
- Stand-by blowdown and stand-by heating

### Technical data MiniSteam E (electrodes)

A higher humidification performance is possible by connecting units together.

Type	MSE05	MSE10	MSE10
Steam output [kg/h]	4.6	5.0	10.0
Electrical connection <sup>(1)</sup>	230V/1Ph/N/50-60Hz	400V/3Ph/N/50-60Hz	
Rated power [kW]	3.5	3.7	7.5
Nominal current [A]	15.0	5.4	10.8
Fuse [A] <sup>(3)</sup>	1 x 16	3 x 10	3 x 16
Operating weight (empty) [kg]	20 (15)		
Width x height x depth <sup>(5)</sup> [mm]	390 x 595 x 255		
Water connection	Tap water of varying qualities, 1 to 10 bar, for 3/4" external thread		
Drain water connection	Connection Ø 1 1/4"		
Sound level at 1 m distance [dB(A)] <sup>(6)</sup>	50		

We reserve the right to make technical changes.

<sup>(1)</sup> Other voltages upon request.

<sup>(3)</sup> 13/28% above nominal power consumption after full blowdown. Observe actuation characteristics of automatic circuit-breakers. If necessary, select the next highest circuit-breaker level.

<sup>(5)</sup> Outer dimensions of width and depth. Height incl. drain connection.

<sup>(6)</sup> During sporadic blowdowns higher values.

# CAREL humiSonic direct

Adiabatic ultrasonic nebuliser for operation with demineralised water



## Direct humidification and cooling – hygienic, low-maintenance and quiet

CAREL humiSonic direct is an adiabatic ultrasonic nebuliser for direct humidification of the room air with which an additional cooling effect is achieved. Because with the adiabatic humidification microscopic water droplets evaporate spontaneously in the air. The change of state from liquid to gaseous withdraws energy from the air in the form of heat stored. The outflowing air cools down and reduces the ambient temperature.

CAREL humiSonic direct is operated with purified deionised water. In addition all water-bearing components are made of stainless steel. In the humidifier housing no water accumulates at the end of the humidification cycle, and if the system is not working the stand-by blowdown ensures maximum hygiene.

When operated with demineralised water, CAREL humiSonic direct is equipped with guaranteed 10.000 continuous operating hours very easy to maintain. Its integrated, quiet running ventilation unit distributes the aerosols evenly in the room and enables optimum humidification.

## More comfort, more functions – optionally expandable

With an optional interface card, CAREL humiSonic direct can be connected to an external display for quick and intuitive configuration. This can be spatially be installed separately from the device.



The CAREL humiSonic direct can be controlled continuously or single stage.

Optionally, the control can also be carried out via PI control, e.g. to precisely control the humidity in larger rooms.



### Technical data CAREL humiSonic direct

A higher humidification performance is possible by connecting units together.

Type	UU02R	UU04R	UU06R	UU08R
Steam output [kg/h]	2.0	4.0	6.0	8.0
Electrical connection	230V/1Ph/N/50-60Hz			
Rated power [kW]	0.18	0.33	0.48	0.69
Nominal current [A]	0.8	1.5	2.1	3.0
Fuse [A]	1 x 16			
Operating weight (empty weight) [kg]	10.3 (9.5)	14.1 (12.5)	17.9 (15.5)	21.7 (18.5)
Width x height x depth [mm]	483 x 317 x 274	608 x 317 x 274	733 x 317 x 274	858 x 317 x 274
Water connection [mm]	6 inside / 8 outside Pa hose			
Water outlet [mm]	6 inside / 8 outside Pa hose			
Sound level at 1 m distance [dB(A)]	52.9			

We reserve the right to make technical changes.

## Our service for 100% customer satisfaction

- Long availability for replacement parts
- Technical hotline +49 4193 895-293  
or [hotline@hygromatik.com](mailto:hotline@hygromatik.com)
- HygroMatik distributes in more than 45 countries
- Operating manuals, planning data and information  
on workshop events available online at  
[www.hygromatik.com](http://www.hygromatik.com)

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