



# HygroMATIK®

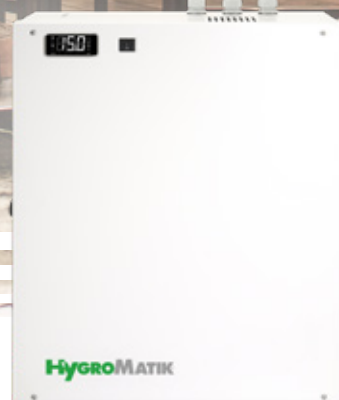
member of CAREL group

CAREL

Humidification and cooling  
Adiabatic low and high pressure systems

## LPS and HPS

Hygienic.  
Efficient.  
Certified.

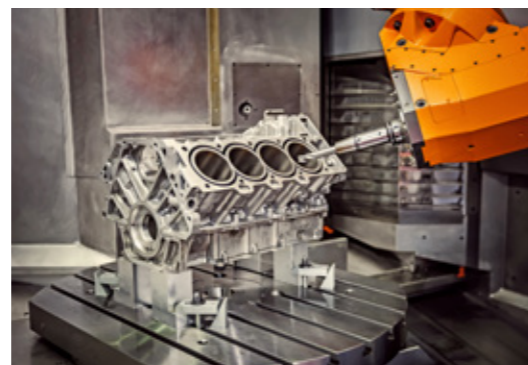


And the forecast for today.

AIR HUMIDITY: OPTIMAL  
TEMPERATURE: COMFORTABLE



Used for **comfort and process humidification and cooling**, e.g. in office complexes, shopping centres, production facilities and manufacturing plants.



## EFFICIENT HUMIDIFICATION AND COOLING

Our adiabatic humidification systems LPS and HPS have been developed for efficient use in **comfort humidification**. They provide for example in office complexes, hotels, shopping centres or clean rooms for the optimum relative humidity of the room air (comfort zone 40-60%) and are therefore an important element in company hygiene concepts and in the development of health-promoting measures.

Also in **process humidification**, e.g. in production plants, in painting facilities or in the automotive and in the aviation industry, they reliably control the air humidity for optimum and stable production conditions.

In addition, **the evaporation of the fine mist cools** the flow air in the duct and thus ensures noticeable cooling of the room air. In the case of exhaust air cooling in summer, **this can save up to 1/3 of the needed cooling capacity** in order to achieve pleasant room temperatures for employees and customers. Also in production plants the primary cooling load can be significantly reduced by reducing process waste heat.

The modular design of our LPS and HPS humidification systems enables **installation or retrofitting in almost any air-conditioning duct**. With a total of 5 performance classes, they can be perfectly matched to your humidification requirements. Up to a humidification capacity of 110 l/h, the **LPS offers a compact humidification system** that can be operated in a low pressure range from 5 to 15 bar (Low Pressure System). The **more powerful HPS** works in the high pressure range with a pressure of 25 to 75 bar (High Pressure System) and enables a humidification performance of up to 600 l/h.

Adiabatic. Dry. Accurate. Safe.

## HYGIENIC, EFFICIENT AND CERTIFIED

### ADIABATIC AND DRY

The adiabatic low and high pressure nozzle systems LPS and HPS from HygroMatik humidify the air in air conditioning and ventilation systems with fully demineralised water. The low and high pressure atomisation enables an **optimum spray pattern** with minimum energy consumption. The LPS and the HPS fulfil the hygiene requirements and are certified by TÜV according to VDI 6022.

High-precision stainless steel nozzles generate optimal aerosols, which are particularly quickly absorbed to the air in the humidification chamber. With their different spray angles, individual arrangement and optimum aerosol sizes, they ensure **almost dry walls** in the humidification chamber.

In addition, the Vortex wall made of specially developed **VortexModules** mixes the duct air with the aerosols over the shortest humidification distance. Due to the fast and efficient absorption there is almost no water loss – this saves additionally. The high-quality stainless steel aerosol separators from HygroMatik guarantee an aerosol-free supply air.

### ACCURATE AND SAFE

The high-quality system control offers precise, proportional humidification control. Through the constant monitoring of all system components and functions **highest operational safety** is guaranteed.

The forwarding of operating and collective fault messages to your building control system is a matter of course and enables **short reaction times in the event of a fault**.



Clear LED display with operating buttons (LPS)



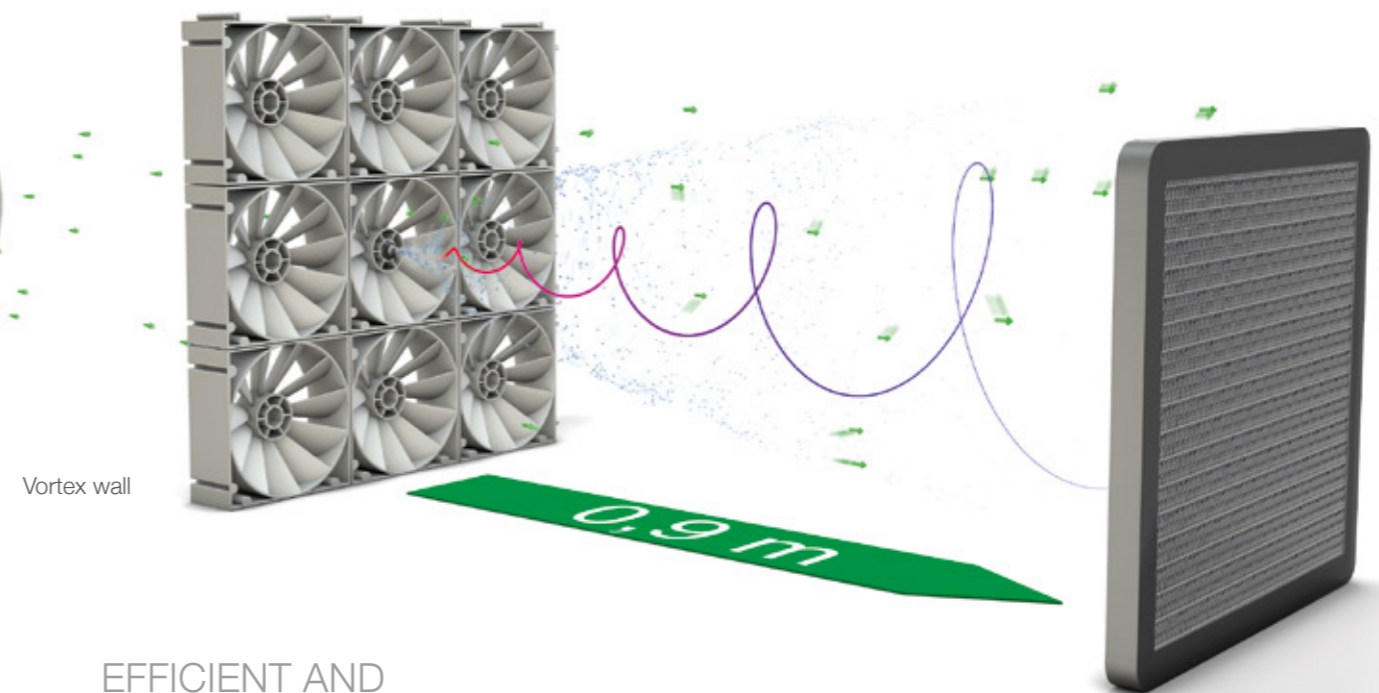
Capacitive 3.5" touch colour display (HPS)

### HYGIENIC

Our hygiene concept deliberately dispenses with biocides and chemical disinfectants. Only the used fully demineralised water\* **without additives** is released into the air we breathe.

The systems do not contain any porous or water-storing components. Standing water is effectively prevented, and **when the system is at a standstill it is automatically drained** and rinsed in regular VDI 6022-1 compliant cycles.

In the HygroMatik LPS and HPS, only **inert materials** come into contact with the humidifying water. With their material properties, these ensure hygienically harmless and perfect humidification – the basic requirement in air conditioning technology.



Vortex wall

### EFFICIENT AND CONSERVING RESOURCES

The adiabatic systems from HygroMatik offer high humidification performance with low energy demand. Due to their **high degree of efficiency and exact controllability**, the systems allow a particularly efficient use of the resources used.

Humidification with demineralised water\* excludes lime precipitation and guarantees **minimum maintenance requirements**.

This ensures a **quick amortisation** of the investment costs and, through the use of high-quality components, a **long service life**.

### CERTIFIED

LPS and HPS comply with the German standards VDI 6022-1 and VDI 3803-1 as well as the comparable Austrian and Swiss standards.

A recognised independent testing institute has examined and confirmed conformity with the guidelines and the current state of the art (TÜV certificate numbers: SEIT/1068/18-B for LPS, SEIT/1068/18-A for HPS).



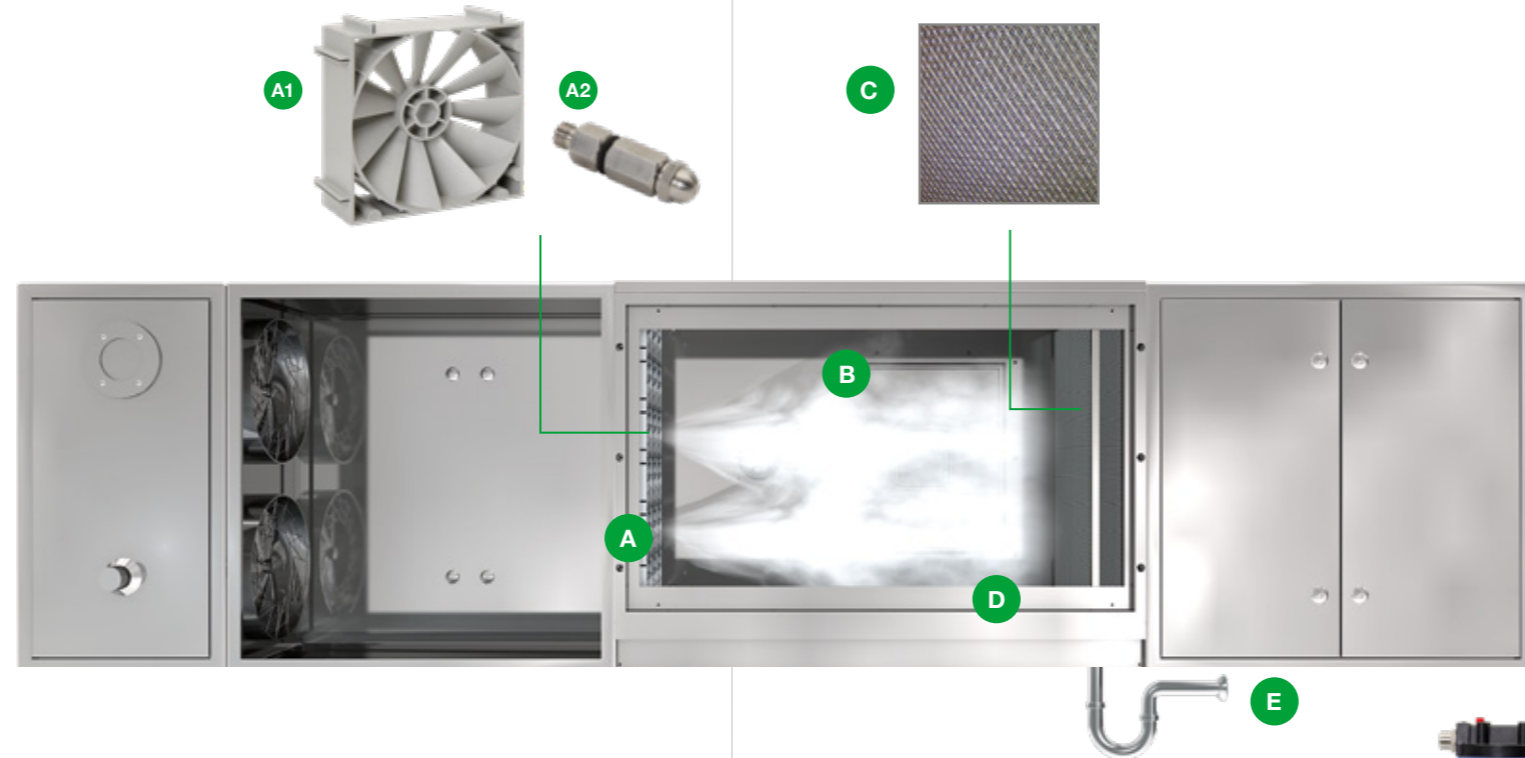
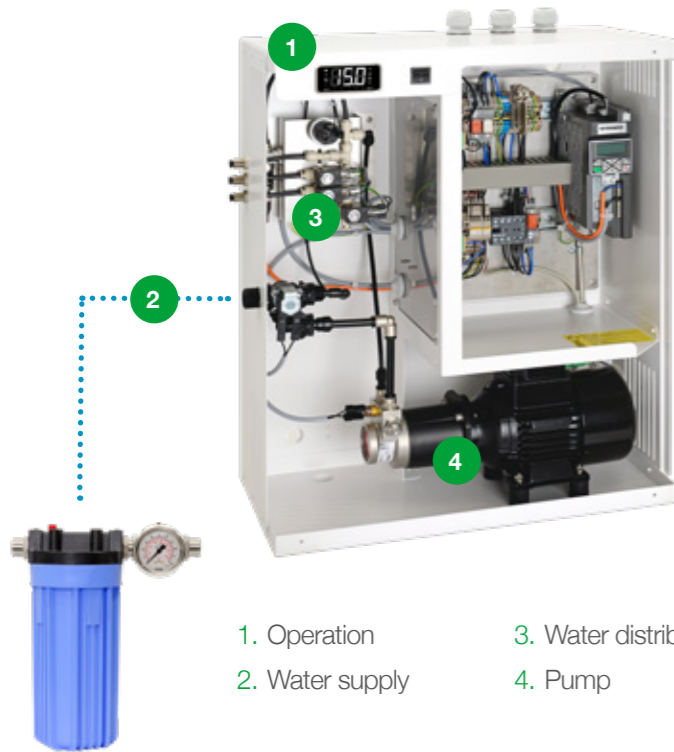
\* Residual conductivity 5-50 µS/cm

# LOW PRESSURE SYSTEM

# HIGH PRESSURE SYSTEM

LPS

HPS



- 1. Operation
- 2. Water supply
- 3. Water distributor
- 4. Pump

- A. VortexModule wall
- A1. VortexModule
- A2. Nozzle
- B. Window with darkening according to VDI 6022-1
- C. Aerosol separator 2-stage

- D. Humidification chamber with service door and water tray
- E. Water drainage (with siphon)

- 1. Operation
- 2. Water supply
- 3. Water distributor
- 4. Pump

LPS

HPS

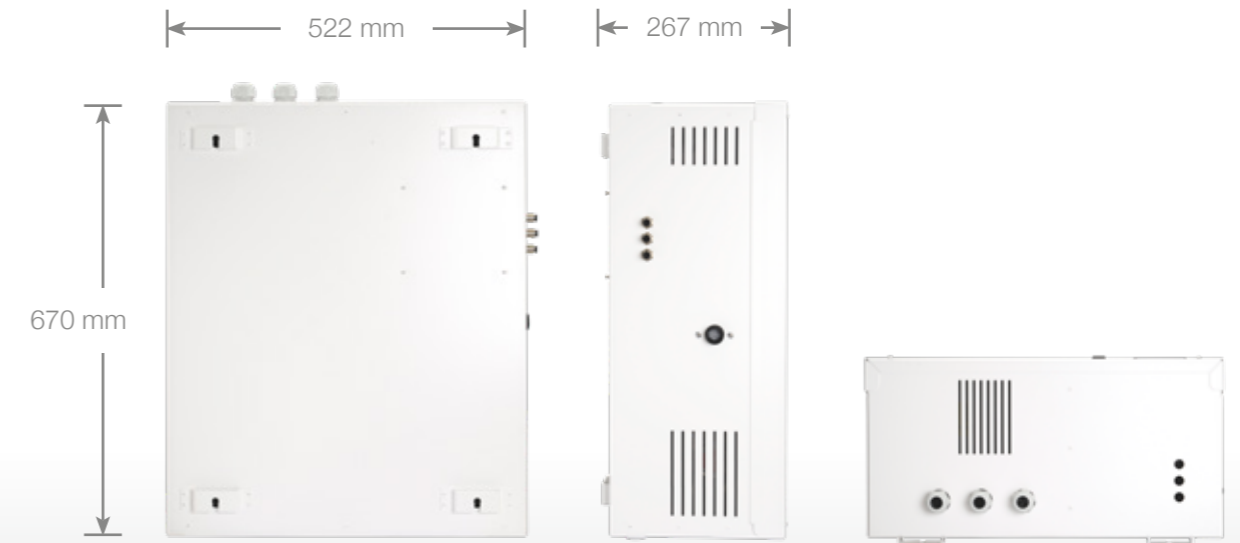


## Performance characteristics

	LPS	HPS
Humidification output	up to 110 litres per hour	up to 600 litres per hour
Efficiency	up to 80%	up to 98%
Low energy consumption with particularly low maintenance requirements	✓	✓
Excellent for retrofitting in air conditioners and air washers	✓	✓
Time-saving installation due to uncomplicated construction and simple commissioning	✓	✓
Use of only inert materials	✓	✓
Capacitive 3.5" touch colour display with convenient menu navigation to set the relevant operating parameters	-	✓
Clear LED display with control buttons for quick and intuitive navigation	✓	-
Annual maintenance according to service schedule	nozzles + water filter	nozzles + water filter + pump
Adjustment of the rinsing and idling parameters during commissioning	✓	✓
Especially low noise	✓✓	✓
ModBus and BacNet protocols	✓	✓



**LOW PRESSURE SYSTEM LPS**  
 WORKING PRESSURE: 5-15 BAR  
 HUMIDIFICATION OUTPUT: 4-110 LITRES/H



**Technical data LPS**

Type		45	72	110
Effective humidification performance	[kg/h]	up to 45	up to 72	up to 110
Humidification capacity max. (15 bar)	[l/h]	56	90	140
Current connection	[A]	1.9	2.1	2.7
Performance	[kW]	0.44	0.48	0.62
Voltage connection	[V/Ph/Hz]	230 / 1 / N / 50-60		
Control signal *	[V/mA/Ohm]	0-10 / 4-20 / 0-140		
Dimensions of VortexModules	[mm]	150 x 150		
Max. number of nozzles		15	22	32
Humidification distance, optimum	[m]	0.9		
Installation length, optimum	[m]	1.5		
Flow rate	[m/s]	0.9-2.8		
Pressure drop in duct (dry)	[Pa]	80 at 2.0 m/s air velocity		
Water connection		fully demineralised water, residual conductivity 5-50 µS/cm		

\* Other control signals on request.  
 We reserve the right to make technical changes.

HPS



## HIGH PRESSURE SYSTEM HPS

WORKING PRESSURE: 25-75 BAR

HUMIDIFICATION OUTPUT: 14-600 LITRES/H



### Technical data HPS

Type		250	500
Effective humidification performance	[kg/h]	up to 250	up to 600
Humidification capacity max. (75 bar)	[l/h]	260	620
Current connection	[A]	6.45	10.4
Performance	[kW]	1.48	2.4
Voltage connection	[V/Ph/Hz]	230 / 1 / N / 50-60	
Control signal *	[V/mA/Ohm]	0-10 / 0-20 / 0-140	
Dimensions of VortexModules	[mm]	150 x 150	
Max. number of nozzles		6-39	18-104
Humidification distance, optimum	[m]	0.9	
Installation length, optimum	[m]	1.5	
Flow rate	[m/s]	0.9-2.8	
Pressure drop in duct (dry)	[Pa]	80 at 2.0 m/s air velocity	
Water connection		fully demineralised water, residual conductivity 5-50 µS/cm	

\* Other control signals on request.  
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)

**HYGROMATIK**<sup>®</sup>  
member of CAREL group 

HygroMatik GmbH  
Lise-Meitner-Str. 3  
24558 Henstedt-Ulzburg  
Germany

T +49 4193 895-0  
F +49 4193 895-33  
[hy@hygromatik.de](mailto:hy@hygromatik.de)  
[www.hygromatik.com](http://www.hygromatik.com)

