

# High-pressure direct-room humidification



HUMIDIFICATION



COOLING



DUST BINDING



# High-pressure success —



## OUR SERVICES

Concept & planning support.  
Quick & comprehensive customer care.  
All components from a single source.



## YOUR APPLICATIONS

Flexible use in all building types.  
Can be integrated into any BMS  
or used as a stand-alone device.



## HUMIDIFICATION UNITS

Diverse range of product variants, adjustable  
for any application. Flexible positioning.  
Easy installation, modular & extendable.



## HIGH OPERATIONAL SAFETY

Silicone- & oil-free.  
Food-approved & hygienically tested  
components.



## PIONEERING TECHNOLOGY


Ultra-precise, individual zone control.  
Intuitive touch control pad.  
Minimal maintenance required.


# One technology, many applications.




## Humidification

Optimized climate for people, materials & the environment.

 Improves product quality, process reliability, indoor climate. Reduces electrostatics and dust.

 **PRINCIPLE**  
High-pressure humidification of water


 **FUNCTION**  
High pressure is applied to water using a pump and is then atomized in the air by means of MICRO DROP nozzles.


 **HUMIDIFICATION PERFORMANCE**  
Individually scalable from 4 lbs/h (1.8 l/h)





## Cooling

Creating a perfect climate with adiabatic cooling.

 Spot workplace cooling: Highly effective, creating a particularly pleasant atmosphere.

 **PRINCIPLE**  
Adiabatic cooling effect = evaporation cooling


 **FUNCTION**  
Energy is extracted from the air through water evaporation, causing it to cool down.


 **COOLING PERFORMANCE**  
Approx. 2,725 watts per gallon of evaporated water





## Dust binding

Clean air & odor reduction thanks to dust binding.

 Reduces dirt and problems related to dust exposure, promotes staff health. ATEX-compatible system.

 **PRINCIPLE**  
Dust is bound by water aerosols

 **FUNCTION**  
Emissions monitoring using water vapor: Minimization of airborne dust particles.

 **PERFORMANCE**  
Reduces up to 80 % of all dust particles in the air

# Seamless operation – from water treatment to high pressure nozzles

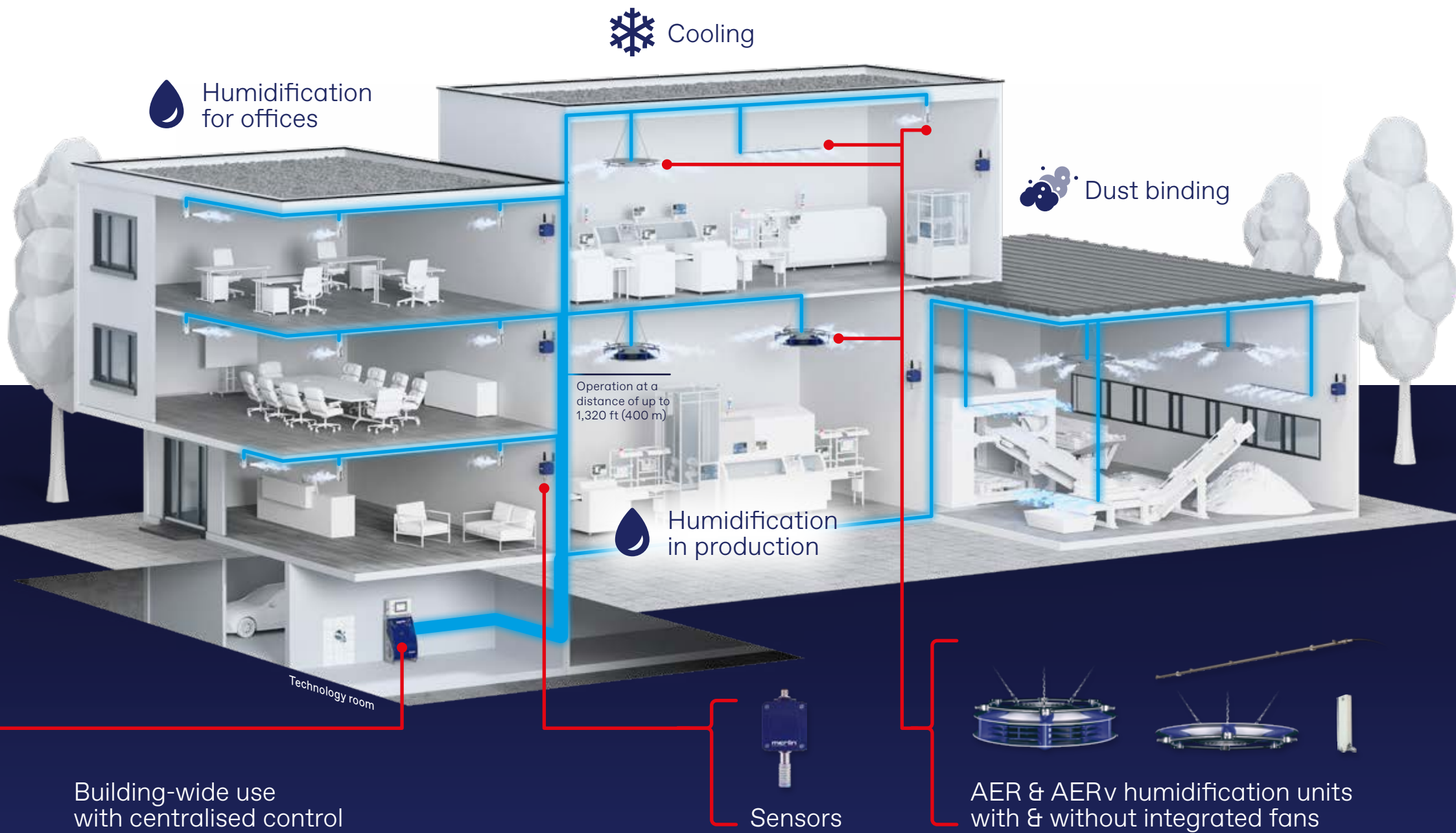
## Merlin turnkey solution – one stop shop for all components including installation

Our core competencies include high-pressure humidification and water treatment. Our reliable, single source systems are meticulously designed to the smallest detail, providing ideal conditions for maximum hygiene and functionality. Take advantage of our expertise to optimize your processes and enhance operational efficiency!

## Custom planning & engineering

With Merlin you can be sure to get the perfect system to meet your needs. We analyze your requirements and preferences to design your customized system, drawing on our expertise and experience gained since 1995.







# Humidification in offices & public buildings



Improving well-being &  
the indoor climate



Reducing static charge



Improving health –  
breathing, skin, allergies,  
fewer air-borne pathogens



Cooling effect in summer,  
lower heating costs in winter

## Healthy workplace air

Humidification by Merlin contributes to the well-being of staff and visitors in office buildings, museums, restaurants and other properties. You can optimize your indoor climate by ensuring an ideal air humidity of 40 – 60 %. At this level, the spread of airborne microbes and pollutants are significantly reduced.



*During the heating season, air humidity in the offices had dropped to a drastically low level of under 20 %. Merlin offered a flexible retrofitting solution to handle the challenging structural conditions. The indoor climate improved considerably. The system is running reliably and is easy to operate.*

Vera Wohlgemuth  
Managing Director of Werba-Chem GmbH



# Humidification in production halls & warehouses



Reduction of static charge,  
dust & fire hazards



Process optimization –  
improvement of processing  
conditions & machine performance



Improvement of product  
quality & consistency



Optimization of  
durability & storage

## Cost-efficient climate in production facilities

Greater success thanks to the right level of humidity:  
The profitability of companies is influenced by factors that  
depend directly on an optimized level of humidity. Many  
problems decrease significantly at a consistent humidity  
value of 40 – 60 %, resulting in increased profit. In production  
and assembly facilities and warehouses of virtually all  
industries, humidification by Merlin can help to save  
materials and energy and to increase product quality.



Application example: ALPHA system

“

*We can achieve great energy  
savings compared to the steam  
humidification we used in the past,  
saving around 128 MWh per year.*

Dipl.-Ing. Katrin Fett  
Energy Efficiency Concepts  
at Grundfos Pumpenfabrik GmbH

”



# Spot workplace cooling



Increases productivity, reduces heat-related health problems



Counteracts the effects of machine waste heat



Targeted spot workplace cooling instead of expensive whole-building systems



Significantly lower energy consumption than air-conditioning systems

## Creating a perfect climate with adiabatic cooling

Adiabatic cooling, also known as evaporation cooling, is the most efficient cooling method for office and production workplaces. It can be used anywhere, even in large warehouses in which traditional air-conditioning systems would be too expensive or infeasible. Work areas can be cooled selectively in a targeted manner in order to improve the well-being and work performance of staff. Merlin also has solutions for effective, customized outdoor cooling.



*We decided to opt for adiabatic cooling, because the production facilities get very hot in summer and air-conditioning is not suitable. These also have the advantage that they can counteract dry heating air in winter.*

Manuel Mayrhofer  
Production Technology / Industrial Engineering at Internorm



# Dust & odor binding in the construction & recycling industries



Up to 80 % dust reduction



Keeping the air clean –  
compliance with  
environmental requirements



Binding of odor particles &  
reduction of odors



Improved & consistent  
raw material quality

## Dust – an unsolvable problem?

Clean air and a comfortable working environment can be achieved in any setting, even in workplaces with high levels of airborne contaminants, such as sorting facilities within the construction and recycling industries. Manually controlled high-pressure humidification binds dust and odor particles directly when they are produced, e. g. at material transfer points. A higher-level sensor-controlled circulatory humidification system also helps to encourage remaining dust to descend. This is how Merlin high-pressure humidification reduces staff health issues as well as the need for elaborate cleaning and maintenance work.



Application example with AER 5 pipe and AER 6 humidification units

*We are very satisfied.  
Merlin high-pressure humidification  
is highly efficient for dust control  
and it's easy to install and service.  
Operating and investment costs  
are relatively low and the system  
requires very little room. The system  
can also be expanded very easily.*

Dr. Alexander Khoury  
Head of Test Center at Steinert GmbH

# Central high-pressure & control unit



Variable humidification performance of 4 – 2,975 lbs/h (1.8 – 1,350 l/h) per pump



Decentralised position at a distance of up to 1,320 ft (400 m) can be achieved



Also possible as a silicone- & oil-free system



Low maintenance

## Technical data

	Unit	ALPHA	VISCORE
Zones per control unit	Number	1 – 12	1 – 4
Humidification performance per pump	lbs/h (l/h)	4 – 2,975 (1.8 – 1,350)	4 – 1,060 (1.8 – 480)
Lubricant		Water   maintenance-free	Oil   low maintenance (1 x per year)
Flow pressure min. / max.	psi (bar)	30 – 60 (2 – 4)	30 – 60 (2 – 4)
Connected electrical load (max.)	kW	2.2 – 4.0	1.5 – 3
Voltage	V   Hz	400 – 480   50/60	220 – 240   50/60
Dimensions (w x d x h)	inch (mm)	26 x 19 x 62 (660 x 480 x 1,570)	44.5 x 22 x 51 (1,130 x 560 x 1,300)
Weight	lbs (kg)	approx. 243 (110)	approx. 209 (95)

# Energy-efficient, powerful

## Full throttle – a powerful central unit

The high-pressure units are home to the control logic, making them a central component of the high-pressure humidification system. The VISCORE and ALPHA product lines allow for solutions at any scale. The smart control system gives you full control and provides precise regulation even in the most sensitive areas of your operating environment.

### ✓ Efficiency

Sophisticated overall concepts.  
Powerful, cost & energy-efficient high-end technology.  
Economical, sustainable & eco-friendly systems.

### ✓ Flexibility

Functional design: Modular, easily extendable design.  
Versatile: Fully adjustable to any project.  
Customizable: Can be adjusted to meet any spatial requirements.



Application example: ALPHA system with water treatment

### ✓ Technology

Multi-functional high-end system in many different variants.  
Outstanding technical functionality with superior features.  
Easy & user-friendly operation.

### ✓ Maintenance

High-quality, durable & low-maintenance system components.  
The oil-free hydraulic water pump is entirely maintenance-free.

### ✓ Hygiene

Hygiene-tested for maximized safety.  
Highest degree of operator & system safety.  
Integrated hygiene management.



AER 1 work



AER 1 office



AER 2



AER 3



AER 5

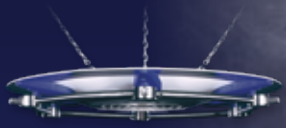
AER 5 pipe



AER 1 pipe



AER 1 pipe end

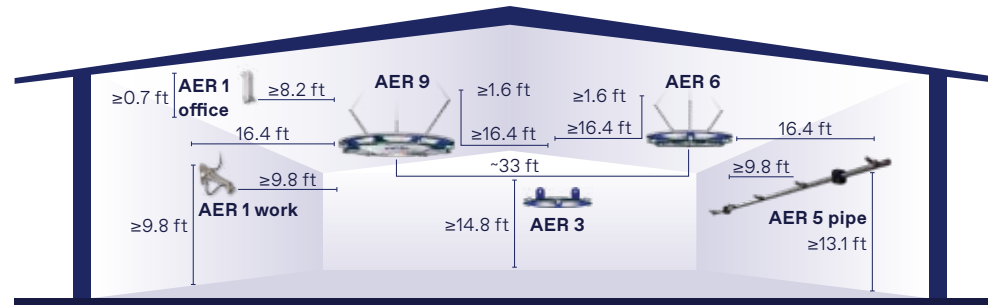


AER 6



AER 9

# AER humidification units without integrated fans



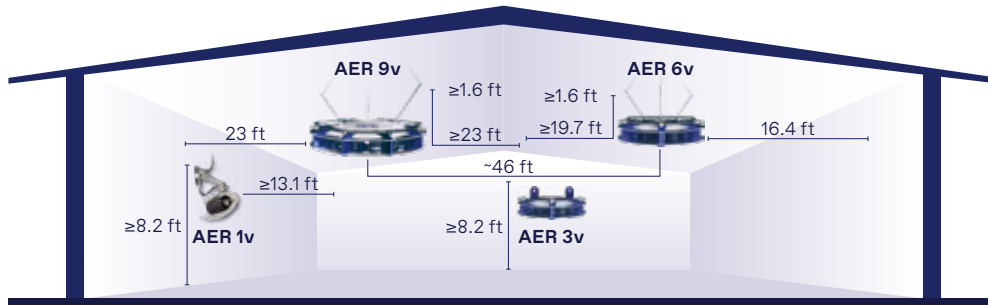
Installation options &amp; distances between AER humidification units

The Merlin AER and AERv humidification units are designed with the lowest possible construction height and deliver ultra-fine humidification tailored to each room's specific requirements, ensuring an optimal indoor climate. These units are versatile, with options available for pillar, ceiling, and wall installations.



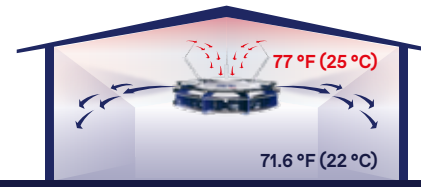
Humidification units without integrated fans can be used for corresponding spatial requirements. Due to their quiet operation, they are especially well-suited to exhibition rooms or office spaces, to name a couple of examples.

## AERv humidification units with integrated fans



### Installation options & distances between AERv humidification units

The number in the unit designations indicates the number of nozzles.  
Optimum distribution is achieved by maintaining the recommended installation clearances.



## Heat distribution

More uniform heat concentration and less pronounced temperature gradient. AERv units pull in warm room air from above and ensure quick, optimized humidity distribution.



**AER 1v**

## Ceiling & wall installation



**AER 3v**

## Wall installation



**AER 5v**



**AER 6v**

## Ceiling installation



**AER 9v**



Humidification units with integrated fans draw in the warm room air from above creating a warm cushion of air. This design promotes rapid evaporation while also achieving uniform moisture distribution in the room. An optional dust filter actively purifies the air passing through the unit. Due to the intake airflow from above, an active heat recirculation of heated air is achieved under the ceiling.

# Technologically sophisticated down to the smallest detail – wide range of accessories



FTS112



FTS140

## Humidity & temperature sensors with safety humidity switch

These are used for quick and highly precise measurement of the relative humidity and temperature in individual control zones. When sensor readings fall below the set point, the humification units in that zone are activated.

A mechanical safety humidity switch protects the systems against excessive humidification in case of a malfunction.

The sturdy **FTS112** humidity and temperature sensor is optimized for industrial use.

Thanks to its understated design, the **FTS140** blends seamlessly into office environments.

## High-pressure nozzle

- ✓ Corrosion & acid resistant stainless steel for minimized maintenance effort
- ✓ Swivelling nozzle adapter & blind nozzles for flexible installation
- ✓ Self-locking at pressures below 290 psi (20 bar)



## High-pressure hose

- ✓ Working pressure up to 1,160 psi (80 bar)  
Bursting pressure 18,800 psi (1,300 bar)
- ✓ Highly flexible & bendable:  
Easy to install like a cable
- ✓ Highly UV, ozone & wear resistant
- ✓ 100 % conductive



## Screw connection

- ✓ Metallic seal
- ✓ Corrosion & acid resistant stainless steel for minimized maintenance effort
- ✓ Can be installed with standard tools





## Flexible thanks to PLC multi-zone control automatics and Climate Control

The smart PLC control integrates the entire water treatment process as well as humidity and temperature sensors. It reads the sensor information and triggers humidification as needed, making perfect and consistent goal attainment possible. The optional Climate Control visualization and recording functions will give you an overview of all data of the high-pressure humidification system, such as relative and absolute humidity, wood equilibrium moisture, room temperature and dew point data.

# Everything under control

- ✓ **Connection & integration**  
Can be used as a stand-alone device or integrated into any BMS:  
Wide range of network integration & data recording options (IoT)
- ✓ **Interfaces**  
Can be connected to smart interfaces
- ✓ **Control**  
Fast-response touch control pad with intuitive user surface,  
digital monitoring is possible

## Pioneering & smart: Technical advantages of Merlin



Up to 12 zones can be independently controlled with one control system, run & break times are freely adjustable



The hygiene interval switch maximizes operational safety



Climate Control – clear visualization & recording of all climate data



Development in cooperation with



Campus  
Wels

Campus  
Steyr

Professional association memberships



FGK



Be on the safe side with us

Our company and our products are certified according to all relevant standards. Cooperation with acclaimed universities as well as laboratories and membership in relevant industry associations combined with our comprehensive expertise, enable us to draw up the best indoor climate concept for you:

- ✓ Company-run competence center
- ✓ Customized maintenance concepts
- ✓ Ensuring impeccable hygiene for your systems
- ✓ VDI-trained technicians

## Tested, certified, confirmed – highest level of safety & quality

Our certifications



ISO 9001

Quality  
management  
Company certification



ISO 14001

Environmental  
management  
Company certification



ISO 22000

Food  
safety  
Company certification



ÖNORM H 6020

Ventilation & air conditioning  
plants for locations for medical use  
Company certification

## HygieneForce®

The Merlin HygieneForce ensures a perfectly hygienic indoor climate!

## TechForce

Highly qualified technical staff creates the foundation for superior high-pressure humidification!

# Superior Service – customer-focussed

Headquarters in Austria

## SalesForce

The Merlin SalesForce is here to help from planning through to commissioning!

### Rooted in Austria – at home throughout the world

Our headquarters in Upper Austria in the heart of Europe and our Europe-wide service network with over 40 partners means we can be by your side at any time and at short notice. Our service network's coverage is particularly extensive in the DACH region. You can be sure that your nearest technician is no more than 300 km away. Our branch in Chicago in the US allows us to offer comprehensive services internationally as well.



- ✓ Customer support  
remote, multi-lingual
- ✓ Delivery of replacement parts  
within 48 hours in Europe
- ✓ Service hotline  
+1 847 227 9500  
officeusa@merlin-technology.com
- ✓ Service hours  
MON – FRI: 7:30 am – 8 pm CET  
SAT & public holidays: 9 am – 3 pm CET

# Best climate for human, material & environment



officeusa@merlin-technology.com



HU**M**AN



HON**E**ST



**R**EVOLUTIONARY



EMOTION**L**



**I**NNOVATIVE



SUSTAIN**N**ABLE

## From people for people

Since 1995, the owner-run family company Merlin Technology GmbH based in Upper Austria has been offering top conditions for a productive and innovative corporate culture.

Customers from around the world benefit from this. Our humidification and cooling solutions made in Austria are used by over 7,000 customers in 81 countries. "Superior service and 100 % customer satisfaction" is our motto – and we are fully committed to it!

Directed by Johannes Part (CFO), Dominik Reisinger (CTO) and Johann Reisinger (CEO), Merlin is a place where innovative, sustainable product solutions are born.

# All Merlin solutions

As a specialist in the fields of indoor climate and humidification, Merlin has a comprehensive product range that offers solutions for any problem.  
Let's talk about your Merlin success story!



**Merlin**  
**High-pressure direct-room humidification**  
Humidification | Cooling | Dust binding



**Merlin**  
**High-pressure humidification in AHU systems**  
Humidification | Cooling



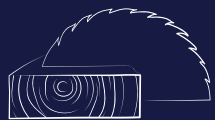
**Merlin**  
**Ultrasonic & rotation lamellae systems**  
Humidification | Cooling



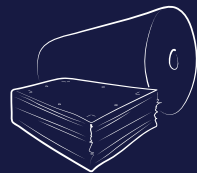
**Merlin**  
**Water treatment**  
for the entire industrial sector

## Industries

The Merlin SalesForce includes experts for any industry.



**WOODWORKING**



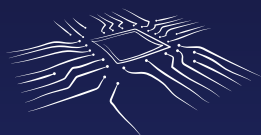
**PAPER & PRINTING**



**BUILDING & OFFICE**



**AUTOMOTIVE & AVIATION**



**ELECTRONICS**



**PLASTIC**



**FOOD**

Other  
industries?

**CUSTOM SOLUTIONS**



VISIT US

[MERLIN-HUMIDIFICATION.COM](https://www.merlin-humidification.com)



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