



STULZ the natural choice

STULZ UltraSonic®

Humidifying Systems



STULZ UltraSonic®

The humidifying system with maximum energy efficiency

The advantages at a glance

- **Maximum energy savings**

STULZ UltraSonic® uses up to 93 % less electricity than electrode/resistance steam humidifiers with the same output.

- **Excellent control characteristics**

Full humidifier capacity is available without delay as soon as the unit is switched on. Likewise, humidification stops as soon as the unit is switched off.

- **Energy-saving cooling effect**

STULZ UltraSonic® simultaneously cools the room. This considerably reduces the running time of the compressors when air conditioners are used at the same time.

- **Flexible actuation**

The STULZ UltraSonic® system can be actuated by means of moisture sensors, external request or ON/OFF contact.

- **Very fine mist**

The water particles have an average size of just 0.001 mm. As in isothermal steam humidifiers, the mist is absorbed immediately.

- **Long service life**

The principal components of STULZ UltraSonic® humidifier systems are of stainless steel or high-grade plastic. The oscillators have a minimum running time of 10,000 operating hours at nominal capacity.

- **Rapid amortisation / future-proof investment**

STULZ UltraSonic® humidifier systems pay for themselves within a very short time.

Because of rising energy prices, the STULZ UltraSonic® system is a future-proof investment!

- **Hygienic humidification**

Thanks to a continual supply of fresh water (no recirculating water!) and a regulated purification or flushing cycle, humidification is always perfectly hygienic.





Air quality made-to-measure

In computer rooms, laboratories, clean rooms, hospitals and offices - in fact, wherever humidification is a vital element of optimum air conditioning.

For printing presses, lithographers, photo labs and electronics factories, made-to-measure humidifier solutions ensure highly efficient production. Humidification also plays an important role in the leather and textile industry.

In baking firms and cheese factories, in warehouses for fruit and vegetables and in food counters, humidification preserves quality and optimises the production process.

In all cases, with our STULZ UltraSonic® humidifying systems, STULZ provides made-to-measure humidification to ensure the best possible processes and high quality standards.

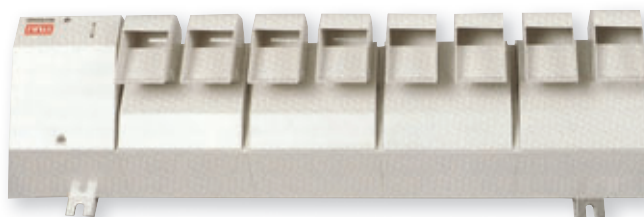
This is how it works

A rapid change in pressure produces ultrasonic waves. In order to make use of these ultrasonic waves for the humidification process, the electronically produced ultrasonic frequency must be converted into mechanical energy by a piezoelectric converter. The surface of the oscillating converter vibrates at such a speed that the water can no longer follow the movement due to inertia, giving rise to a momentary vacuum and therefore compression. The air bubbles created in this way impact with one another with great force, in a process known as cavitation. In addition, the sonic power is focused just under the surface of the water producing cross waves. At the point where these waves intersect, tiny droplets of water break down to form a mist that is assimilated by the flow of air. The process of optimum "cool" humidification is complete.

STULZ UltraSonic®

ENS humidifiers for integration

Devices from the UltraSonic® ENS model series are designed for use in ventilation and air-conditioning systems. They can be installed in ventilation ducts, box-type units and air conditioners, for example. The ENS 1200-9600 series is modular in design, with graduated humidifying capacities ranging from 1.2 kg/h to 9.6 kg/h. In addition, the ENS 14 and ENS 18 models are available as ready built units in a stainless steel casing, with humidifying capacities of 14 kg/h and 18 kg/h. Tried and tested controller components ensure that the desired room humidity is precisely maintained.



ENS 3600



ENS 18

ENS 14



ENS humidifiers for integration

| Model | Humidifier capacity (l/h) | No. of oscillators | Unit dimensions H x W x D (mm) | Power consumption (VA) | Weight without water (kg) |
|----------|---------------------------|--------------------|--------------------------------|------------------------|---------------------------|
| ENS 1200 | 1.2 | 2 | 157 x 220 x 145 | 65 | 1.5 |
| ENS 2400 | 2.4 | 4 | 157 x 340 x 145 | 125 | 2.2 |
| ENS 3600 | 3.6 | 6 | 157 x 460 x 145 | 185 | 2.9 |
| ENS 4800 | 4.8 | 8 | 157 x 580 x 145 | 240 | 3.6 |
| ENS 6000 | 6.0 | 10 | 157 x 700 x 145 | 310 | 4.3 |
| ENS 7200 | 7.2 | 12 | 157 x 820 x 145 | 375 | 5.1 |
| ENS 8400 | 8.4 | 14 | 157 x 940 x 145 | 435 | 5.8 |
| ENS 9600 | 9.6 | 16 | 157 x 1,060 x 145 | 495 | 6.5 |
| ENS 14 | 14.0 | 24 | 175 x 785 x 230 | 750 | 11.0 |
| ENS 18 | 18.0 | 30 | 175 x 950 x 230 | 960 | 13.0 |

STULZ UltraSonic®

BNB direct room humidifiers

For direct room humidification, STULZ offers units from the STULZ UltraSonic® model series BNB 1000 to BNB 8000. All major components of these units are made from stainless steel or high-grade plastic. A fan integrated in the housing distributes the cold mist, which is generated in the water bath, around the room. These units are employed, for example, in the humidification of production rooms, computer rooms, storage facilities, printing plants, museums, restoration workshops, theatres and many other areas in which optimum humidity is essential for production, storage or the indoor climate.



| BNB direct room humidifiers | | | | | | |
|-----------------------------|---------------------------|--------------------|--------------------------------|------------------------|-----------------------|---------------------------|
| Model | Humidifier capacity (l/h) | No. of oscillators | Unit dimensions H x W x D (mm) | Power consumption (VA) | Air throughput (m³/h) | Weight without water (kg) |
| BNB 1000 | 1.0 | 2 | 255 x 254 x 200 | 100 | 72 | 7.1 |
| BNB 2000 | 2.0 | 4 | 255 x 364 x 200 | 180 | 108 | 9.3 |
| BNB 3000 | 3.0 | 6 | 255 x 474 x 200 | 250 | 144 | 11.2 |
| BNB 4000 | 4.0 | 8 | 255 x 584 x 200 | 340 | 216 | 14.0 |
| BNB 5000 | 5.0 | 10 | 255 x 694 x 200 | 430 | 252 | 16.1 |
| BNB 8000 | 8.0 | 16 | 255 x 1,024 x 200 | 670 | 396 | 23.0 |

STULZ UltraSonic®

Ultrasonic humidifiers with distribution system



STULZ KNB UltraSonic® humidifier

For greenhouses, fruit, vegetable and asparagus warehouses, mushroom cultivation, etc.



STULZ BBA UltraSonic® humidifier

For the prevention of electrostatic charge, e.g. in the paper and film processing industry



STULZ SCA UltraSonic® humidifier

For selective, universal humidification



STULZ FN 400 UltraSonic® humidifier

For air conditioners and fan coil units



| Humidifier | | | | | | |
|-----------------------------------|---------------------------|--------------------|--------------------------------|------------------------|-----------------------|---------------------------|
| Model | Humidifier capacity (l/h) | No. of oscillators | Unit dimensions H x W x D (mm) | Power consumption (VA) | Air throughput (m³/h) | Weight without water (kg) |
| KNB 2000 | 2.0 | 4 | 245 x 280 x 220 | 195 | 48 | 8.0 |
| BBA 1000 X ¹⁾ | 0.2-1.0 | 2 | 1,004 x 690 x 233 | 160 | 240 | 84.0 |
| BBA 2000 X ¹⁾ | 0.2-2.0 | 4 | 1,004 x 690 x 233 | 220 | 240 | 84.0 |
| BBA 1000 XL (400 V) ¹⁾ | 0.2-1.0 | 2 | 1,004 x 690 x 233 | 160 | 240 | 84.0 |
| BBA 2000 XL (400 V) ¹⁾ | 0.2-2.0 | 4 | 1,004 x 690 x 233 | 220 | 240 | 84.0 |
| SCA 1000 | 1.0 | 2 | 195 x 272 x 220 | 100 | — | 6.0 |
| SCA 2000 | 2.0 | 4 | 195 x 272 x 220 | 160 | — | 7.0 |
| SCA 1000 X ¹⁾ | 0.2-1.0 | 2 | 195 x 272 x 220 | 100 | — | 6.0 |
| SCA 2000 X ¹⁾ | 0.2-2.0 | 4 | 195 x 272 x 220 | 160 | — | 7.0 |
| SCA 2000 T ²⁾ | 2.0 | 4 | 195 x 272 x 220 | 160 | — | 8.0 |
| FN 400 H | 0.4 | 1 | 95 x 158 x 90 | 40 | — | 1.7 |
| FN 400 HD ³⁾ | 0.4 | 1 | 95 x 158 x 90 | 40 | — | 1.7 |

¹⁾ with variable humidifier capacity

²⁾ with additional flow divider pipes and 8 aerosol outlets

³⁾ with integrated water drain

STULZ USM/USS UltraSonic® controller

The STULZ UltraSonic® controller is fully integrated in a control system, which can actuate up to 15 humidifiers as a master-slave solution. Each humidifying system requires the installation of just one controller, with plain text display for entering setpoints and showing control feedback values and status messages/alarms, in the USM master control unit. All other humidifiers in the system are controlled by the USS slave control units.

STULZ UltraSonic® controllers – Advantages at a glance

- Plain text display
- 2 analog inputs (0-1 V/0-10 V/optional: 4-20 mA)
- Optional connection of 2 temperature sensors or 1 sensor + external control signal
- Proportional closed-loop control by means of a solid-state relay
- Stepless compensation with 2 simultaneous input signals thanks to staggered limit sensors
- Time-controlled actuation of an external valve (hygienic flushing cycle)
- Optional connection of a conductivity monitor can be connected (with discontinuous water conditioning)
- Water level, water shortage and water temperature monitoring
- 48 V low-voltage control for greater safety
- Status signals provided as a floating output and optical signal
- Fault signals provided as a floating output and optical signal
- Optional connection of a limit monitor
- Remote ON/OFF
- Display text available in various languages (optional)



USM master control unit



USS slave control unit



Control module

| USM/USS UltraSonic® controller | | | |
|--------------------------------|------------------------------|----------------------|----------------|
| Model | Dimensions H x W x D (mm) | Transformer power VA | Weight (kg) |
| USM 503 | 600 x 400 x 210 | 500 | 27.0 |
| USM 1303 | 600 x 400 x 210 | 1,300 | 38.0 |
| USS 503 | 400 x 400 x 210 | 500 | 22.0 |
| USS 1303 | 400 x 400 x 210 | 1,300 | 33.0 |

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STULZ the natural choice

Close to you all over the world.

... With specialist, competent partners in our subsidiaries and exclusive sales and service partners around the world. Our five production sites are in Europe, North America and Asia.