SKH ATOMIZING HIGH PRESSURE HUMIDIFIER

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The SKH pumps water at high pressure through a series of nozzles to produce a fine mist. By way of the adiabatic process, the SKH uses energy (heat) from the surrounding air to evaporate the fine mist (water droplets). This evaporative cooling/humidification process provides a very low energy impact with power consumption values of 1.5 kW to 7.5 kW, which is less than other technologies of equivalent capacity, such as compressed air.

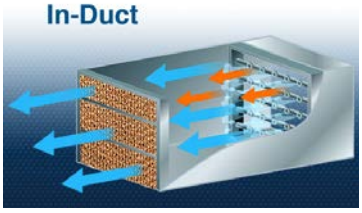
- Up to 12°C of free cooling
- Close control humidity
- Uses energy from ambient air
- Up to 10 zones
- View and control from any zone
- Fast and easy maintenance

Typical Applications

With capacities from 30 to 2,108 kg/h, multi-zone capability and its low energy impact, the SKH High Pressure Humidifier is ideal for applications such as:

- Commercial Space
- Wood Processing
- Paint Spray Booths
- Greenhouses
- Textile Industry

Typical Installation (or "Distribution")



Custom nozzle racks make it ideal for use in AHUs.

- 1 to 4 stages for sequential control
- 1st stage modulates for close control
- Droplet separator if required

Spray directly into the space for high ceiling applications (approximately 9.1m)

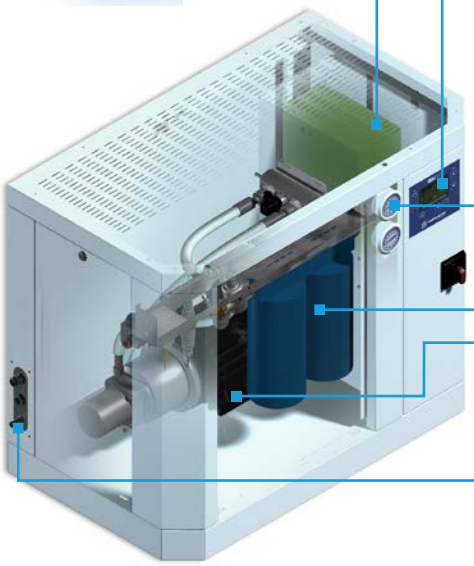
- Flexible nylon high-pressure hoses or hydraulic high-pressure hoses
- With stainless steel, quick connect fittings

Spray directly into the space with a fan (MDU: Mist Distribution Unit) for low ceiling applications (minimum 4.6m)

- Horizontal air flow assists in the evaporation process

System Overview

Nozzles
Anti-drip nozzles produce droplets of less than 20µm.



Variable Frequency Drive
Regulates motor and pump RPMs to ensure greater energy savings and longer pump life.

Intelligent Controller
Networkable (BACnet MS/TP), field configurable controller manages sequences of operation and provides close control for up to 4 stages and 10 zones.

Pressure Regulator and Gauge
Water inlet pressure regulator and gauge to adjust the appropriate water inlet pressure.

Pre-filter and Silver Ion Cartridge
Water pre-treated with 5µm pre-filter and anti-bacterial silver ions prevent microbial growth.

High Pressure Water Pump
High efficiency, water cooled axial piston pump (maintenance free).

High Pressure Water Outlet
Ranges varying from 30 - 2,108 kg/h per pump station depending on model.

Pump

- Very high efficiency, small and compact
- All stainless steel design
- Water cooled
- Axial piston pump
- Maintenance free (no oil to change)
- Extreme recirculation capability (up to 90%) without overheating
- Fulfils most stringent hygiene requirements, such as VDI 6022

Controller

- Microprocessor based, field configurable controller
- Real-time clock with flexible scheduler
- Simple viewing and exporting of trending log and alarm log
- In-field firmware upgradeable via micro SD card
- LCD (128 x 64) with context-driven, userfriendly menu

BACnet MS/TP Communication

- Select MAC address via menu or network
- BACnet scheduler (up to 6 events)
- Firmware upgradeable via network
- COV (change of value)
- Automatic baud rate detection
- Automatic device instance configuration

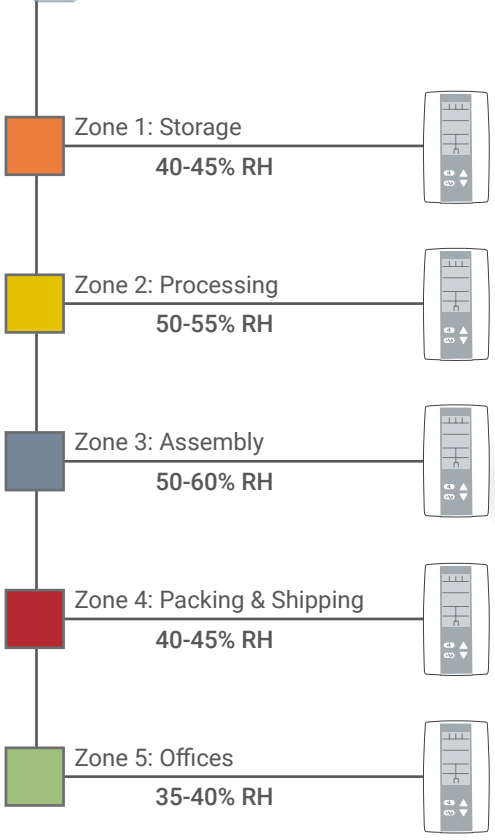
Multi-Zone System

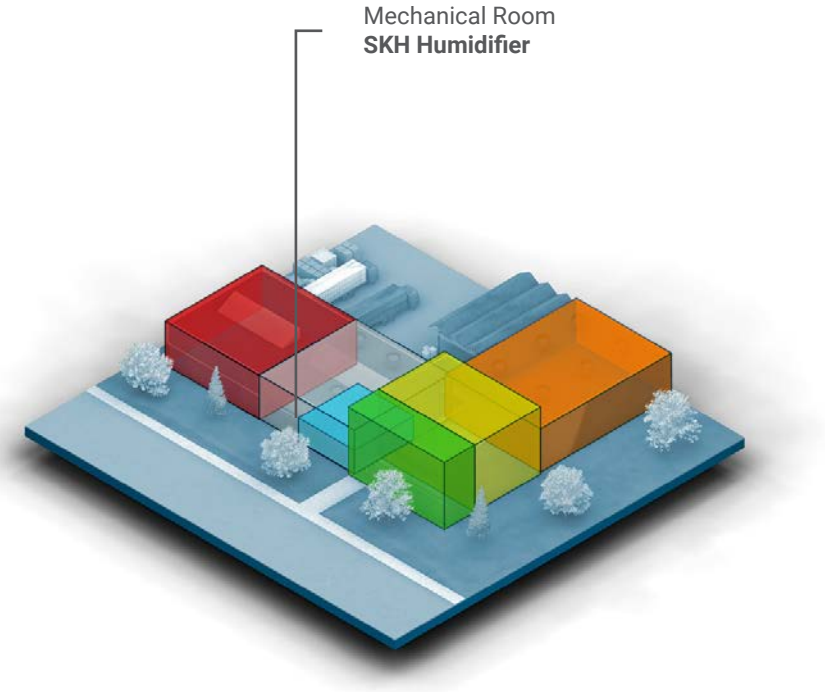
A single pumping station can be used to supply pressurized water to up to 10 zones. The master controller, located in the master pumping station, communicates with each zone controller via a proprietary network. The zone controller communicates its local readings and status to the master controller as well as to the local wallmount user interface. Using the data received, the master controller manages the distribution and atomization system to maintain close control humidity.

- Up to 10 zones
- 4 sequential stages per zone including 1 proportional stage.
- Connect to any zone with a computer to view and control the system
- BMS Integration via BACnet MS/TP @ 9600, 19200, 38400, or 76800 bps

Maintain optimal humidity levels in every zone, with only one unit.

Each zone has an independent humidistat





Remote System Control

- Each SKH unit has an integrated system controller that manages all sequences of operation for each zone
- Unique to Neptronic, you can tap into the system directly from within the zone by connecting to the zone's thermostat/ humidistat.
- With its BACnet MS/TP communication, integrate the system with your Building Management System (BMS)

Building Management System

Zone 1: Storage
40-45% RH

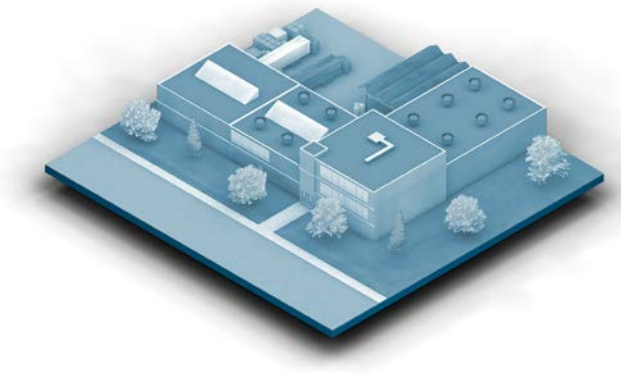
Zone 2: Processing
50-55% RH

Zone 3: Assembly
50-60% RH

Zone 4: Packing & Shipping
40-45% RH

Zone 5: Offices
35-40% RH

Connect directly to any zone



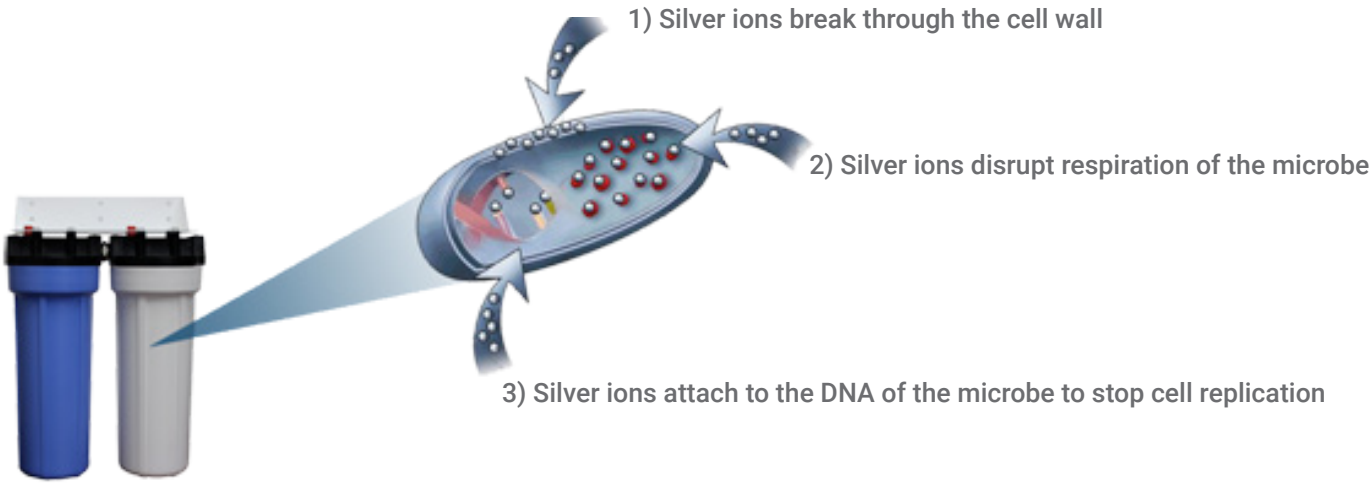
ASHRAE BACnet™

Models and Capacities

Model	Capacity		Motor	
	lb/hr	kg/hr	HP	kW
SKH100	66-660	30-300	2	1.5
SKH200	141-1126	64-512	3	2.25
SKH300	231-1454	105-661	5	3.75
SKH600	453-2343	206-1065	7.5	5.6
SKH900	585-3645	266-1657	10	7.5
SKH1200	805-4638	366-2108	10	7.5

Hygienic and Safe

- RO water recommended to
  - increase hygienic performance
  - minimize maintenance
  - avoid nozzle blockage
  - eliminate the introduction of dust into the space
  - eliminate use of biocide and chemical disinfectants
- The systems contain no standing water
- Automatically activated rinsing of the system prevents standstill contamination, and this without any downtime
- System design ensures only inert materials come in contact with the water
- Auto reduction of output in case air absorption capacity is lower than design condition
- Water pre-treated with 5µm pre-filter and anti-bacterial silver ions prevent microbial growth



Energy Efficient

- By combining a high pressure water pump with the adiabatic process, the SKH uses less energy than other humidifier types that require more expensive air compressors to evaporate the water
- Misting without expensive compressed air saves on energy costs, compressor maintenance and installation
- Humidifying in the winter reduces heating costs. Providing free cooling in the summer reduces cooling costs
- VFD regulates pump performance to best match the current humidity demand, which ensures greater energy savings

Fast and Easy to Service and Install

- The master controller displays all maintenance intervals and status messages via a multi-functional display screen
- An indication also appears on the wall-mount user interface. Operating and fault signals can be integrated into your Building Management System (BMS)
- Monitoring and troubleshooting can be done remotely via the BACnet network
- The water pump is water cooled and lubricated and therefore maintenance is further minimized since there is no oil to change in the pump
- The nozzle rack is custom made to fit duct or AHU dimensions
- The SKH system features quick connects between the nozzle rack, or MDU and pump station

Humidifier Product Line

Electric

SKE4

- Capacities from 5 - 120 kg/hr
- Remove chamber easily, without tools
- Outdoor unit available

Gas Fired

SKG4

- Capacities from 50 - 400 kg/hr
- Modular design
- Outdoor unit available

Steam to Steam

SKS4

- Capacities from 15 - 670 kg/hr
- Scale management system for easy maintenance
- Insulated external panels

Residential

SKR

- Capacities from 3 - 5 kg/hr
- Permanent cleanable chamber
- Reliable siphon drain

High Pressure Atomizer

SKH

- Capacities up to 2100 kg/hr
- Up to 10 zones
- Installation in-duct or in-space

Evaporative

SKV

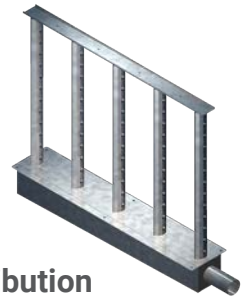
- Free cooling up to 12°C
- Custom design to fit your application
- Hygienic operation with silver ion dosing system

Direct Steam

SKD

- Capacities from 2 - 750 kg/hr
- Jacketed or Multi-Steam™ SD/HD
- Unique electronic steam controller
- Optional pressurized condensate return (PCR) system

Steam Distribution



Distribution

- Multi-Steam™ SD/HD distribution
- S.A.M. & S.A.M.E2 wands
- SDU (Space distribution unit)

Humidity Controls

Controls

- Humidity controls/sensors
- Safety controls
- BACnet compatible

MANUFACTURER OF

- HVAC CONTROLS
- ELECTRIC ACTUATORS
- ACTUATED VALVES
- HUMIDIFIERS
- ELECTRIC HEATERS

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