

# SKS4 STEAM TO STEAM HUMIDIFIER



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# SKS4 STEAM TO STEAM HUMIDIFIER

The SKS4 humidifier provides chemical free steam by using an on-site central boiler or steam generating station as a heat source. The raw steam under pressure from the boiler provides the energy to produce clean steam through a heat exchanger.

The SKS4 is recommended for applications such as schools, hospitals, printing shops, museums and offices.

## Advantages

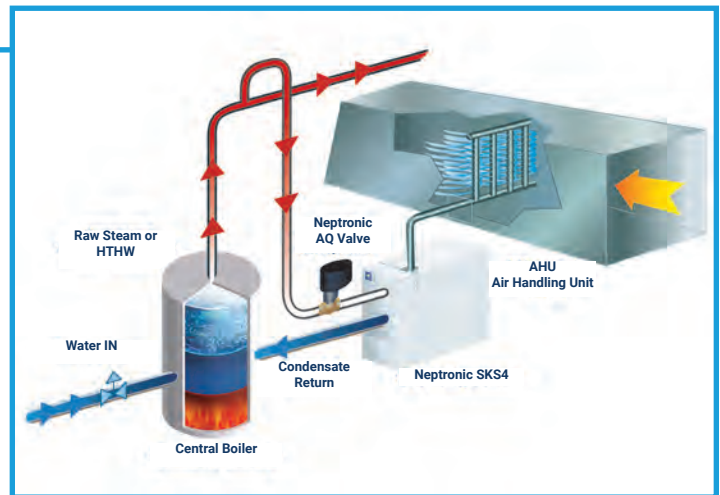
- Capacities from 33 to 1250 lbs/hr (15 to 570 kg/hr) of steam
- Stainless steel (for raw steam) heat exchangers
- Comprehensive scale management system
- Ease of servicing: clean and re-install within minutes
- Patent-pending water level detection system using 2 sensor technologies
- Uses domestic, RO or DI water
- Available with BACnet MS/TP or Modbus communication
- Optional ethernet module for BACnet IP or Modbus IP, and web services
- Patented Anti-Foaming Energy Conservation (AFEC) System
- Drain water tempered to below 140°F (60°C)

## Typical Installation

### Steam to Steam Humidification

The main energy source of the SKS4 is raw steam under pressure from an on-site central boiler.

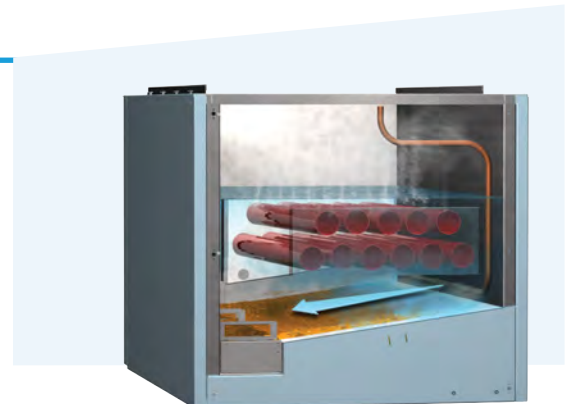
The raw steam passes through the heat exchanger of the humidifier, thus providing the energy to produce clean sterilized steam to be distributed to the Air Handling Unit (AHU) system or duct.



## Self-Cleaning System

### Scale Management System

The SKS4 is designed with a comprehensive scale management system. The supply of cold water, located at the sloped bottom of the evaporation chamber, forces the precipitated mineral deposits into baskets that can easily be removed and cleaned.



# System Overview

## Heat Exchanger

Raw steam passes through the heat exchanger, thus providing the energy to produce clean steam. Made with 316 stainless steel for 5-15 psig (34.5-103kPa) steam.

## Evaporation Chamber

The 304 stainless steel evaporation chamber cover is equipped with handles for easy removal without any tools.

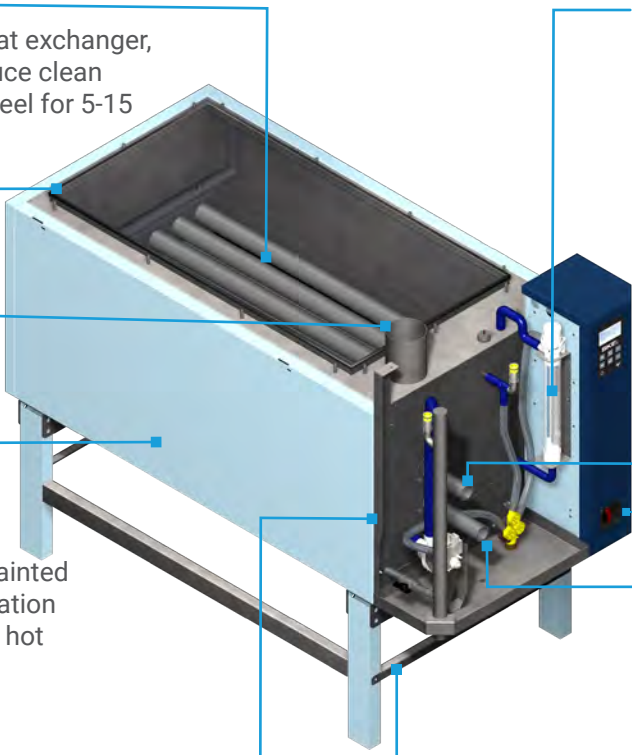
## Steam Outlet

## Insulated Cabinet

The fully enclosed steel, powder-painted cabinet with 1" (25mm) thick insulation eliminates accidental contact with hot surfaces and saves energy.

## Scale Trap Trays

These trays can be accessed from the top of the unit, allowing for easy maintenance and scale removal.



## Patent-Pending Water Level Detection System

- Self-cleaning and self-calibrating sensors
- Utilizes 2 different sensor technologies
- Precise and reliable water level detection
- Anti-Foaming Energy Conservation (AFEC) System: drains water when foam is detected

## Pressurized Steam Supply

## Disconnect Switch

## Condensate Return

## Floor Stand

Adjustable legs ensure proper level when installed directly on the floor.



## Modulating Control

The SKS4 is supplied with a linear actuated globe valve giving full modulation control of low pressure steam.



# Options

## Steam Distribution Systems

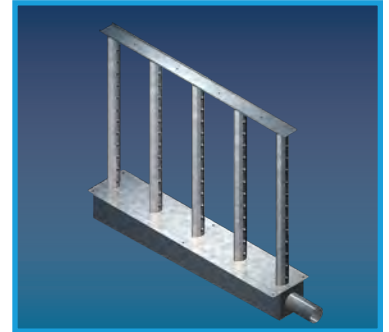
For duct distribution installation, the SKS4 requires either a Multi-Steam SD, Multi-Steam HD, or S.A.M.E2 as a steam dispersion system.



**Multi-Steam SD:**  
For absorption distance  
of less than 3' (914mm)



**S.A.M.E2:**  
For absorption distance  
of less than 5' (1500mm)



**Multi-Steam HD:**  
High efficiency steam distributor  
(channel and header) with  
steam ejector eyelets

## Outdoor Enclosure

- Hinged doors provide full access (serviceability) from the front, back and top of unit
- Fully insulated and constructed from heavy duty steel
- Stainless steel bottom drip pan
- Zinc primer and polyurethane powder coating for resistance against scratches and corrosion
- Built-in anti-freeze and overheat protection
- Easy installation on a roof curb, stand or slab



# Specifications

## Heat Exchanger - SLP Stainless Steel 316 (For Raw Steam)



Model	Output Steam Capacity lbs/hr [kg/hr] for Supply Steam Pressure					Steam Outlet Qty & Ø in [mm]
	5 PSI [34.5 kPa]	8 PSI [55.1 kPa]	10 PSI [68.9 kPa]	12 PSI [82.7 kPa]	15 PSI [103 kPa]	
SKS4-100-SLP	33 [15]	53 [24]	67 [30]	80 [36]	100 [45]	(1x) 3" [76]
SKS4-130-SLP	43 [19]	69 [31]	87 [39]	104 [47]	130 [59]	(1x) 3" [76]
SKS4-190-SLP	63 [28]	101 [46]	127 [57]	152 [69]	190 [86]	(1x) 3" [76]
SKS4-290-SLP	97 [44]	155 [70]	193 [87]	232 [105]	290 [132]	(1x) 4" [100]
SKS4-390-SLP	130 [59]	208 [94]	260 [118]	312 [142]	390 [177]	(1x) 4" [100]
SKS4-500-SLP	167 [76]	267 [121]	333 [151]	400 [182]	500 [230]	(1x) 5" [125]
SKS4-690-SLP	230 [104]	368 [167]	460 [209]	552 [251]	690 [314]	(1x) 5" [125]
SKS4-950-SLP	317 [144]	507 [230]	633 [287]	760 [345]	950 [432]	(2x) 4" [100]
SKS4-1250-SLP	417 [189]	667 [303]	833 [378]	1000 [454]	1250 [568]	(2x) 5" [125]

## Integrated, Multi-Platform Controller

The SKS4 controller is configured specifically for your SKS4 Steam Humidifier.

- User-friendly, menu-driven interface on a 128 x 64 LCD with 8 function buttons for faster configuration and operation
- User rights management system allows for menu to display only functions available to the type of user logged in: End User, Service Technician, Installer or Integrator
- Quick Config menu allows for faster and easier installation, by displaying only the most commonly used functions and configurations
- Independent scheduling system for unit operation and drain cycle configurable via the menu or the BACnet communication interface
- In-field firmware upgradeable via SD card, USB or BACnet
- Simple viewing and exporting of trending log and alarm log

### Optional features:

- The selectable BACnet MS/TP or Modbus menus allow access to over 75 objects/ registers for integration with a BMS and IoT (Internet of Things)
- Ethernet module
- BACnet IP or Modbus IP
- Web services make it possible to perform humidifier configurations, remote diagnostics and many more functions from any location



## Specify your SKS4 online

### Humidifier System Design and Specification Web Application

Ready to specify your Humidifier? Neptronic has developed a web application that saves you time when sizing and specifying Neptronic commercial, industrial or residential humidifiers.



## Features

- Automatic humidification load calculation
- Web based
- Selection specific report generator
- Only options related to your selections appear
- Manage users, clients, job sites and humidifier specs
- History log

**Projects Humidifier Dispersion Options Reports Pricing**

Type  
 Isothermal (Hot Steam)     Adiabatic (cold mist)

Category  
 Commercial Electric     Commercial Gas     Residential Electric  
 Steam to Steam     Direct Steam

Entering Air Conditions    Indoor Conditions    Distribution  
 Temperature  °F    Temperature  °F     In Duct  
 Relative Humidity  %    Relative Humidity  %     In Space

Ventilation System  
 Natural     Mechanical     Economizer

Total Air Flow  CFM    Outside Air  %

Humidifier(s)  
 Entry Load Manually    Calculated Load  lb/hr    Total Capacity  lb/hr    [Select Model](#)

## Easy to Use

Go to [neptronic.com](http://neptronic.com), select Humidisoft and log in. Enter design requirements and Humidisoft automatically calculates the humidification load and adjusts available options based on your selections. When done, print a complete schedule, CSI and/or submittal report at the click of a button.

**Projects Humidifier Dispersion Options Reports Pricing**

Flexible Steam Hose    High Limit & Air Pressure Switch  
 ft     Air Pressure switch APS  
 High Limit Duct Humidistat HC201

Heat Exchanger    Electrical Actuated Steam Valve  
 Stainless Steel     None  
 Stainless Steel Teflon Coated     Brass Trim  
 Stainless Steel Nickel Plated     Stainless Steel Trim  
 Copper  
 Copper Teflon Coated  
 Copper Teflon Plated

Other Options  
 BACnet (MS/TP) Network Capability  
 Float / Thermostatic Steam Trap  
 Steam Supply Strainer  
 Floor Legs  
 Wall Mounting Brackets  
 Hanging Brackets  
 Standard DI/RO Water (below 18 megohm)  
 Humidifier Weather Enclosure (W)

# Humidifier Product Line



## Electric



### SKE4

- Capacities from 6 - 300 lb/hr
- Remove chamber easily, without tools
- Outdoor unit available

## Gas Fired



### SKG4

- Capacities from 110 - 810 lb/hr
- Modular design
- Outdoor unit available

## Steam to Steam



### SKS4

- Capacities from 33 - 1250 lb/hr
- Scale management system for easy maintenance
- Insulated external panels

## Residential



### SKR

- Capacities from 4.5 - 12 lb/hr
- Permanent cleanable chamber
- Reliable siphon drain

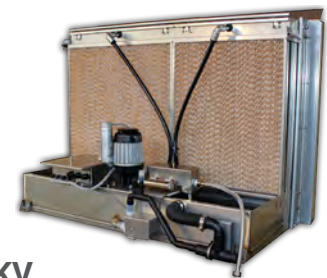
## High Pressure Atomizer



### SKH

- Capacities up to 4638 lb/hr
- Up to 10 zones
- Installation in-duct or in-space

## Evaporative



### SKV

- Free cooling up to 22°F (12°C)
- Custom design to fit your application
- Hygienic operation with silver ion dosing system

## Direct Steam



### SKD

- Capacities from 5 - 1650lb/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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