

# 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

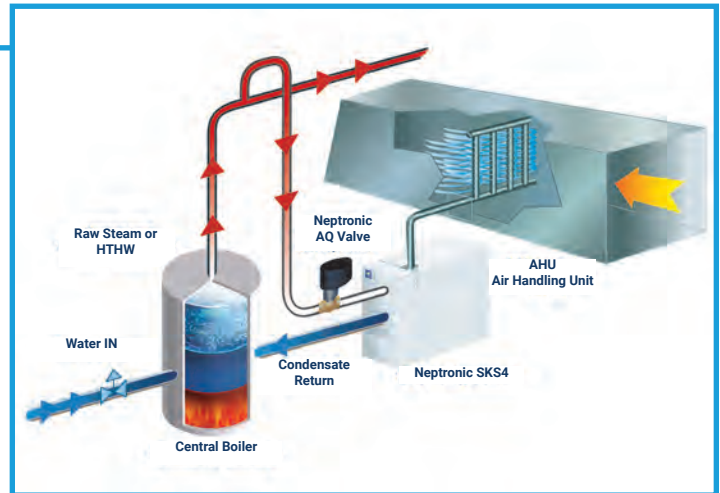
- Capacities from 33 to 1250lbs/hr (15 to 570kg/hr) of steam
- Stainless steel (for raw steam) heat exchangers
- Comprehensive scale management system
- Ease of servicing: clean and re-install within minutes
- Patent-pending water level detection system using 2 sensor technologies
- Uses domestic, RO 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.

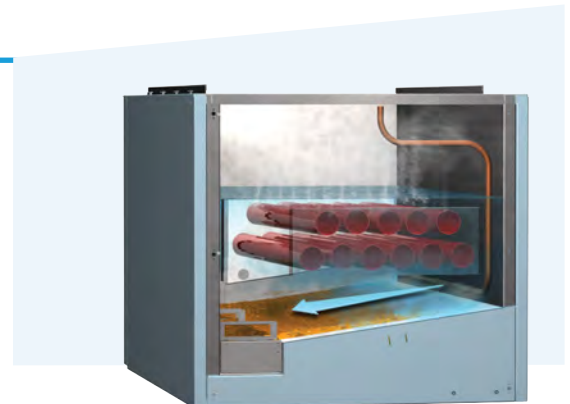
The raw steam passes through the heat exchanger of the humidifier, thus providing the energy to produce clean sterilized steam to be distributed to the Air Handling Unit (AHU) system or duct.



## 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.

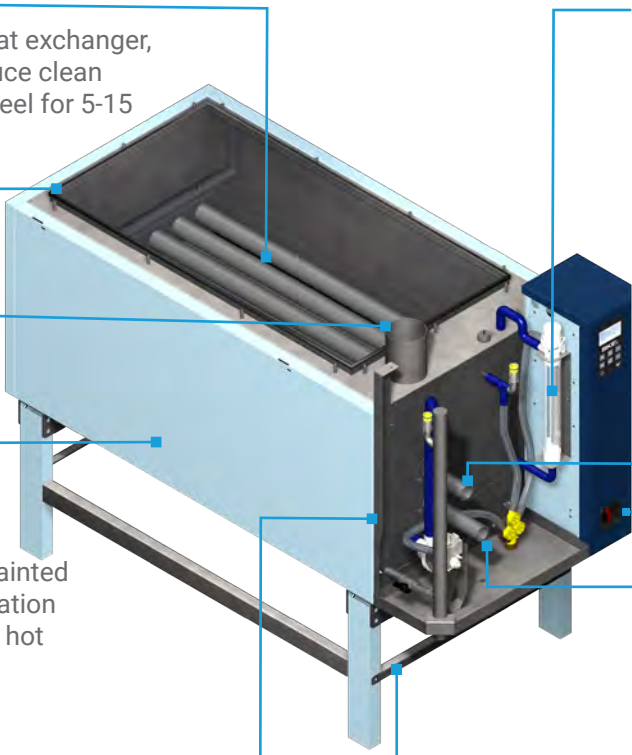
## Steam Outlet

## 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 patent pending  
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? Nepronic has developed a web application that saves you time when sizing and specifying Nepronic 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
<b>Type</b>					
<input checked="" type="radio"/> Isothermal (Hot Steam) <input type="radio"/> Adiabatic (cold mist)					
<b>Category</b>					
<input type="radio"/> Commercial Electric <input type="radio"/> Commercial Gas <input type="radio"/> Residential Electric					
<input checked="" type="radio"/> Steam to Steam <input type="radio"/> Direct Steam					
<b>Entering Air Conditions</b>		<b>Indoor Conditions</b>		<b>Distribution</b>	
Temperature <input type="text"/> °F		Temperature <input type="text" value="69.8"/> °F		<input checked="" type="radio"/> In Duct	
Relative Humidity <input type="text"/> %		Relative Humidity <input type="text" value="30"/> %		<input type="radio"/> In Space	
<b>Ventilation System</b>					
<input type="radio"/> Natural <input checked="" type="radio"/> Mechanical <input type="radio"/> Economizer					
Total Air Flow <input type="text" value="3531"/> CFM				Outside Air <input type="text" value="100"/> %	
<b>Humidifier(s)</b>					
<input type="checkbox"/> Entry Load Manually		Calculated Load <input type="text" value="70.06"/> lb/hr		Total Capacity <input type="text" value="100.00"/> lb/hr <a href="#">Select Model</a>	

## 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
<b>Flexible Steam Hose</b>		<b>High Limit &amp; Air Pressure Switch</b>			
<input type="text" value="3"/> ft		<input type="checkbox"/> Air Pressure switch APS			
		<input type="checkbox"/> High Limit Duct Humidistat HC201			
<b>Heat Exchanger</b>			<b>Electrical Actuated Steam Valve</b>		
<input checked="" type="radio"/> Stainless Steel			<input type="radio"/> None		
<input type="radio"/> Stainless Steel Teflon Coated			<input checked="" type="radio"/> Brass Trim		
<input type="radio"/> Stainless Steel Nickel Plated			<input type="radio"/> Stainless Steel Trim		
<input type="radio"/> Copper					
<input type="radio"/> Copper Teflon Coated					
<input type="radio"/> Copper Teflon Plated					
<b>Other Options</b>					
<input checked="" type="checkbox"/> BACnet (MS/TP) Network Capability					
<input checked="" type="checkbox"/> Float / Thermostatic Steam Trap					
<input type="checkbox"/> Steam Supply Strainer					
<input checked="" type="checkbox"/> Floor Legs					
<input type="checkbox"/> Wall Mounting Brackets					
<input type="checkbox"/> Hanging Brackets					
<input type="checkbox"/> Standard DI/RO Water (below 18 megohm)					
<input type="checkbox"/> Humidifier Weather Enclosure (W)					

# Humidifier Product Line



## Electric



### SKE4

- Capacities from 6 - 270 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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