

# SKE4-Resistive Steam Humidifier Brochure



**neptronic**<sup>®</sup>

# SKE4 RESISTIVE STEAM HUMIDIFIER

The SKE4 humidifies by converting electricity into heat through a resistive heating element. The element is submerged thus heating up the water in the evaporation chamber to produce steam. The process allows steam to be generated quickly with any water condition.

## Advantages

- Capacities from 5 to 120 kg/hr
- Separate plumbing, controls, and high-voltage sections
- Remove the stainless steel evaporation chamber with ease
- Patent-pending water level detection system using 2 sensor technologies
- Drain water tempered to below 60°C
- Patented Anti-Foaming Energy Conservation (AFEC) System
- Available with BACnet MS/TP or Modbus communication interface
- Optional ethernet module for BACnet IP or Modbus IP, and Web services
- Independent scheduling system for unit operation and drain cycle

## Evaporation Chamber

### Evaporate water, not money!

The Neptronic SKE4 humidifier includes a permanent, lightweight and reusable stainless steel chamber instead of a disposable plastic bottle that must be replaced at least once a year, resulting in thousands of dollars of savings. These savings will more than pay for the initial cost of the humidifier.



No tools required



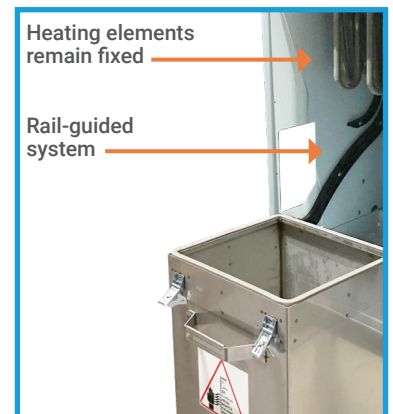
No heavy lifting required



Disconnect the water inlet



Disengage the 2 clamps



Drop down evaporation chamber with rail-guided system

# System Overview

## 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

## \*All Silicone Piping

- No copper piping
- Resistant to higher water temperatures
- Suitable for all water types including DI and RO (Consult factory for Ultrapure water)

\* Alternate piping available

## Manual Drain

- Functions even without power



## Power drain pump

## Quick Connect Water Inlet

- No tools required

## SD Card

- Event history log
- Firmware upgrade

## SSR with External Heat Sink

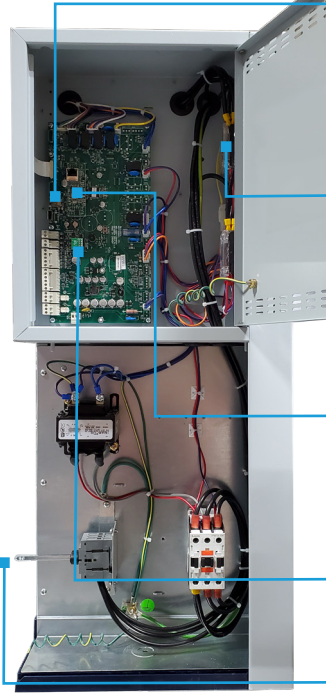
- No cooling fan required
- Reduces noise level

## Ethernet Module (optional)

- BACnet IP or Modbus IP
- Local and remote web services

## BACnet MS/TP and Modbus Module (optional)

## Disconnect switch



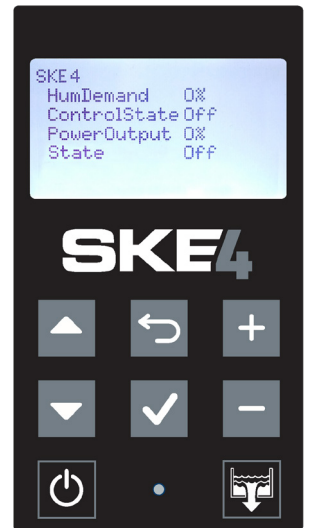
## Integrated, Multi-Platform Controller

The SKE4 controller is configured specifically for your SKE4 Steam Humidifier.

- User-friendly interface consisting of a menu driven 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





# Options

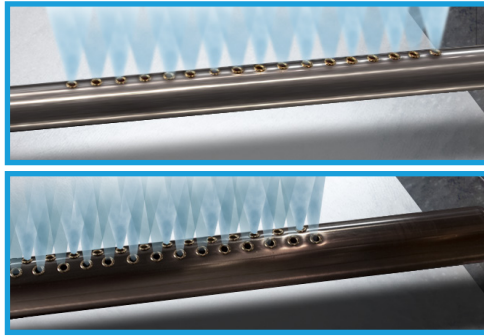
## Steam Distribution Systems

For duct distribution installation, the SKE4 requires either a Multi-Steam, S.A.M. or S.A.M.E2 as a steam distribution system to disperse steam.

For fan distribution installation, the SKE4 can supply steam directly with an SDU (Steam distribution unit) into the room without a duct network or for a localized area.



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



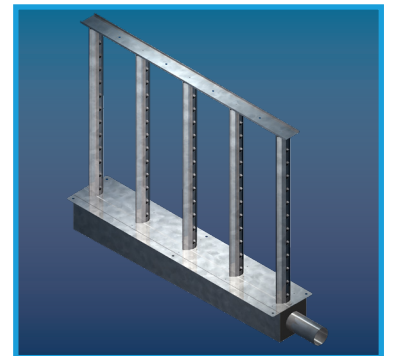
**S.A.M. & S.A.M.E2**  
For absorption distance of less than 5' (1500mm)



**SDU**  
For Models SKE4-E05 to SKE4-E40

## X-Stream™ Technology

- High efficiency insulated steam distributor (channel and header) with steam ejector eyelets
- Double wall 304 stainless steel with encapsulated Armacell UT/ Solaflex™ foam insulation
- Specially engineered 304 stainless steel eyelets prevent condensate ejection on start up and any modulating humidity demand
- Significant reduction in wasted energy
- Reduces airstream heat gain and generated condensate



Multi-Steam™ HD

## Outdoor Enclosure

- 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 on the exterior and interior surfaces
- Built-in anti-freeze and overheat protection
- Easy Installation on a roof curb or stand
- Connection can be made from side or bottom of unit for flexibility in any configuration



# Specifications

## Output and Consumption

| Model     | Steam            | Consumption |          |       | Steam Output |               |                               |
|-----------|------------------|-------------|----------|-------|--------------|---------------|-------------------------------|
|           | Capacity (kg/hr) | Power (kW)  | Amperage |       | QTY          | Diameter (mm) | Space Distribution Unit (SDU) |
|           |                  |             | 230/1    | 400/3 |              |               |                               |
| SKE4-E05  | 5                | 3.7         | 16       | 5.5   | 1            | 35            | SDU4-1                        |
| SKE4-E10  | 10               | 7.5         | 33       | 11    | 1            | 35            | SDU4-2                        |
| SKE4-E20  | 20               | 15          | -        | 22    | 1            | 51            | SDU4-3                        |
| SKE4-E30  | 30               | 22          | -        | 33    | 1            | 51            | SDU4-3                        |
| SKE4-E40  | 40               | 30          | -        | 44    | 1            | 51            | SDU4-3                        |
| SKE4-E50  | 50               | 36          | -        | 53    | 1            | 76            | -                             |
| SKE4-E60  | 60               | 44          | -        | 64    | 1            | 76            | -                             |
| SKE4-E80  | 80               | 60          | -        | 87    | 1            | 76            | -                             |
| SKE4-E90  | 90               | 66          | -        | 96    | 1            | 76            | -                             |
| SKE4-E100 | 100              | 74          | -        | 107   | 1            | 76            | -                             |
| SKE4-E110 | 110              | 82          | -        | 119   | 2            | 76            | -                             |
| SKE4-E120 | 120              | 90          | -        | 130   | 2            | 76            | -                             |

Note: Designate the letter M for modulating units (i.e.: SKE4-E20M)

## SKE4 Series



SKE4-E05



SKE4-E10  
SKE4-E20  
SKE4-E30  
SKE4-E40



SKE4-E50  
SKE4-E60  
SKE4-E80



SKE4-E90  
SKE4-E100  
SKE4-E110  
SKE4-E120

## Specify your SKE4 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

| Project  | Humidifier | Dispersion  | Options  | Reports  | Pricing |
|--|------------|---|--|--|---------|
| Type   |            |   |  |  |         |
| <input checked="" type="radio"/> Isothermal (Hot Steam) <input type="radio"/> Adiabatic (cold mist)  |            |   |  |  |         |
| Category   |            |   |  |  |         |
| <input type="radio"/> Commercial Electric SKE <input type="radio"/> Commercial Gas <input type="radio"/> Residential Electric<br><input checked="" type="radio"/> Commercial Electric SKE4 <input type="radio"/> Steam to Steam <input type="radio"/> Direct Steam |            |   |  |  |         |
| Entering Air Conditions  |            | Indoor Conditions   |  | Distribution   |         |
| Temperature <input type="text" value="15.6"/> °C<br>Relative Humidity <input type="text" value="35"/> %  |            | Temperature <input type="text" value="21.1"/> °C<br>Relative Humidity <input type="text" value="40"/> % |  | <input checked="" type="radio"/> In Duct<br><input type="radio"/> In Space |         |
| Ventilation System   |            |   |  |  |         |
| <input type="radio"/> Natural <input checked="" type="radio"/> Mechanical <input type="radio"/> Economizer   |            |   |  |  |         |
| Total Air Flow <input type="text" value="5663"/> m <sup>3</sup> /hr  |            |   | Outside Air <input type="text" value="100"/> % |  |         |
| Humidifier(s)  |            |   |  |  |         |
| <input checked="" type="checkbox"/> Enter Load Manually                 Entered Load <input type="text" value="2.04"/> kg/hr                 Total Capacity <input type="text" value="5.00"/> kg/hr <a href="#">Select Model</a>                                   |            |   |  |  |         |

## Easy to Use

Go to 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.

| Project   | Humidifier | Dispersion | Options | Reports | Pricing |
|---|------------|------------|---------|---------|---------|
| Flexible Steam Hose   |            |            |         |         |         |
| 54 mm <input type="text" value="4"/> m <input checked="" type="checkbox"/> Straight Hump Silicone Hose SF 4501-55                                       |            |            |         |         |         |
| Drain Cooler  |            |            |         |         |         |
| <input checked="" type="checkbox"/> IDC Internal Drain Cooler (standard feature)<br><input type="checkbox"/> External Drain Cooler (thermostatic valve) |            |            |         |         |         |
| Other Options   |            |            |         |         |         |
| <input checked="" type="checkbox"/> BACnet (MS/TP) Network Capability<br><input type="checkbox"/> Humidifier Weather Enclosure (W)                      |            |            |         |         |         |

# Humidifier Product Line

**SKE4** ⚡



Electric

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

**SKG4** 🔥



Gas Fired

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

**SKS4** ↑↑↑



Steam to Steam

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

**SKVF** → → → ❄️



Evaporative Cooler

- Airflow up to 10194 m<sup>3</sup>/h
- ECM fan with variable output
- Compact, quiet and standalone

**SKR** ⚡



Residential

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

**SKH** 🕒



High Pressure Atomizer

- Capacities up to 2100 kg/hr
- Up to 3 zones
- Installation in-duct or in-space

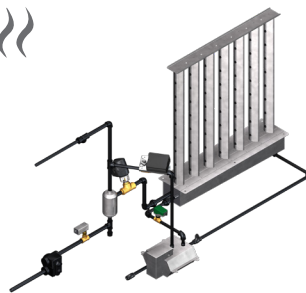
**SKV** → → →



Evaporative

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

**SKD** ~~~



Direct Steam

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

**Distribution**



Steam Distribution

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



**MANUFACTURER OF**

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



**neptronic.com**