



Getting Rid of Scale

Nortec RS Series
Steam humidifier with patented
scale management



 **nortec**
humidity.com

Nortec RS Series Humidifiers For Critical Applications

Productivity and quality of life are directly affected by the indoor environment. People work better and feel better in favorable surroundings. So do products and machines! They all respond in various ways to changes in air quality, temperature, and humidity. All three elements must be just right to maximize performance and reliability, both in humans and equipment. Correct humidity is critical, since too much humidity can be as destructive as too little.

Nortec is a world leader in state of the art humidification technology. Our focus is concentrated exclusively on designing and building better humidification systems. Every Nortec RS Series model has been engineered to meet the highest standards of cost effective, efficient performance. They are designed for ease of installation, adaptability, simplicity of operation, ease of maintenance and servicing, energy efficiency, cleanliness and long term reliability.

Nortec RS Series humidifiers offer complete application flexibility to systems engineers, contractors and customers. They can be integrated into central Heating/Ventilating/Air Conditioning (HVAC) systems or placed in specified locations for individual room control. Models are available to serve small or large areas with outputs of 10-180 lbs/hr.

You can count on Nortec when you need humidity for

- commercial offices
- hospitals
- computer rooms
- museums
- clean rooms
- schools
- high-tech centres
- printing plants

Patented Scale Management

A technical innovation that solves the scale problem.

The patented scale management removes the separated scale particles from the steam cylinder during operation and automatically leads them into the designated scale collection tank. Scale deposits are continuously removed from the steam cylinder.

The pieces of scale are collected in an external scale collection tank where they can be emptied easily. Maintenance work is therefore significantly reduced and operational reliability maximized. The patented scale management system ensures reduced maintenance times and long life of RS steam humidifiers.

Easy cleaning and maintenance

Maintenance intervals are extremely long and the actual maintenance work is reduced to a minimum due to the external scale collection tank. The external location of the scale

collection vessel below the unit ensures very easy access. The tank can be removed and emptied easily without the need for opening the unit housing. This makes maintenance tasks simple and very quick.

Innovative drain pump

Scale deposits are not only undesirable in the air humidifier itself; it can also cause problems in the drain piping of a building, if scale remains are left in the drain water. This can reduce the drain pipe cross sections and even block them.

For this reason, in the RS steam humidifier, the drain pump has been placed above the scale collection tank. Scale deposits drop into the collection tank, where they accumulate. This prevents scale remains from being sucked in and transferred to the drain piping.

This arrangement of the drain pump protects the drainage system of the building against undesirable and problematic scale deposits.



scale forms



patented scale management
breaks away scale



scale from the humidifier
gravitates into the scale tank



scale collection
tank is emptied

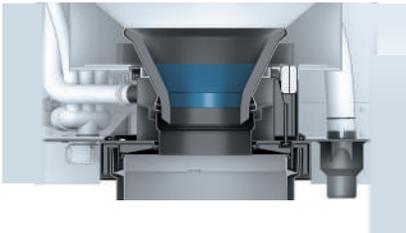
Electric steam humidifier with patented scale management

Scale control

The patented scale management system prevents permanent deposition of scale particles on the heating elements. Scale deposits are successively detached and removed from the steam cylinder into the scale collection tank. Scale management ensures short maintenance operations and a long operation time.

Cold water pool protects in- and outlet against deposition of scale

Near the in- and outlet connections, the twin walled cylinder design of the unit creates a cold water pool which always remains below the temperature of scale formation. Water in- and outlet are therefore protected against scale deposition.



External scale collection tank

The location of the scale collection tank below the unit ensures very easy access. The tank can be removed and emptied easily without the need for opening the unit housing. This makes maintenance tasks quick and simple.





Flexible steam distribution

Nortec RS for use in HVAC-Systems

Nortec RS with blower pack for direct room humidification



Corrosion-resistant stainless steel cylinder

Touch Controller for precise control

The innovative control system fitted to RS steam humidifiers ensures intuitive unit operation, outstanding transparency of functions and precise steam supply.

Perfect integration into Building Management Systems

Standard connection using Modbus, BACnet IP, and BACnet MSTP (Slave). Option required for LonWorks or BACnet MSTP (Master). BTL options also available.



Nortec RS steam humidifiers are optimized for use with deionized, reverse osmosis, or potable water. The design features employed ensure outstanding reliability in

use, precise control, and simple operation. The units are the result of decades of experience and they define the state of the art in modern steam humidification.

Resistive Steam Humidifier With Outdoor Enclosure

Heavy Duty Weatherproof Cabinet

Robust outdoor cabinet provides protection from all of the elements. Complete shielding from rain, snow and dust to allow for installation in all climates.

Compact Design

Fully integrated enclosure to minimize the outer cabinet dimensions. Industry leading space efficiency to optimize the available rooftop area.

Standard Remote Status Indication

Outdoor model complete with remote status relay board which indicates if the unit is operating, producing steam, requires maintenance or has a fault.

Touch Screen Display

Now fully integrated with the Indoor unit, providing a flexible and user friendly controller interface. Provides the same convenient building management system connectivity as the Indoor model.

Single Power Supply

Standard 120V transformer internal to the electrical cabinet allows for the built-in heater to be powered directly from the single power supply to the humidifier.

Wide Temperature Range

Built-in heater designed to maintain full operational capabilities of the unit down to -40°F (-40°C).



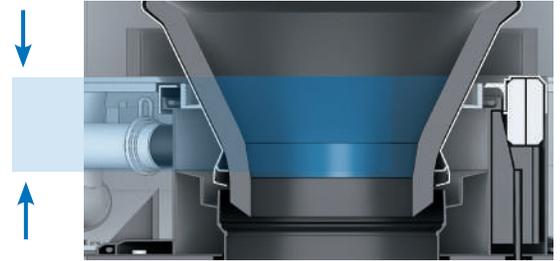
Nortec RO Reverse Osmosis

To dramatically reduce maintenance cycles, the Nortec RO reverse osmosis water treatment system is the right choice as the build-up of scale is eliminated.

Nortec RO water treatment systems operate reliable, economically and meet the industry's hygienic standards.

The Nortec RO series are specially designed for the use with steam humidifiers. The equipment can be installed directly from a tap water system or a water softener. The permeate output ranges along the product line at 5 °C of 40, 120, 200 and 300 l/h.

Cold water zone helps with scale management and blockage of water in / out parts



Flexible Choice of Water

The RS can operate on both potable water and mineral-free water. The resistive heating elements operate independently of the conductivity of the water in the tank. Therefore RS humidifiers are especially effective for operation with treated water. Operation with reverse osmosis water reduces the maintenance cycle even further.

Drain Water Cooler

A second water inlet valve placed underneath the steam cylinder and above the scale collector mixes cold water with the hot drain water during the drain cycle to ensure drain water does not exceed 140 °F (60 °C). Local plumbing codes are met.

Touch Controller for Precise Control

Optimum process transparency

The Nortec Integrated Controller allows verification of all unit and process data at a glance. Operating data can be called up in real time, and there is a comprehensive data history.

Precise control

The electronic control system allows the steam output to be varied continuously between 0 and 100%; this means accurate control and management of the steam supply rate.

Perfect BMS connectivity

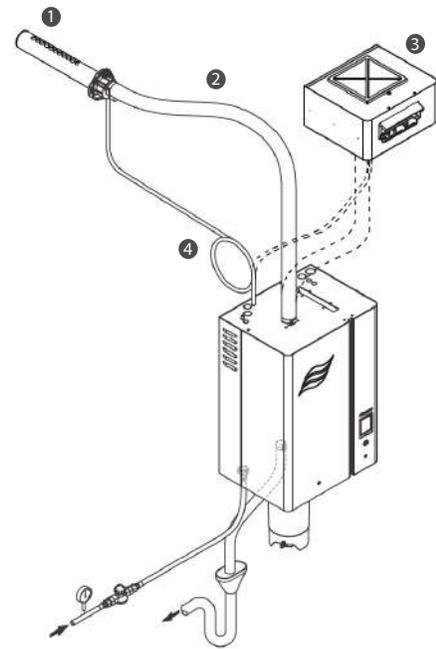
The RS series steam humidifier includes an interface for connection to BMS systems (Modbus and BACnet*) as standard. Remote control or remote monitoring is therefore possible without problems. For several humidifiers as part of a more complex installation, the networking system provides a clear overview about the system with rapid and early response in standard operation.

*BACnet IP, and BACnet MSTP (Slave) as standard. BACnet MSTP (Master) requires BTL option.



Features and Options

	STND	OPTN
Stainless steel steam cylinder	■	
Touch screen control	■	
Internal PI humidity controller	■	
Modbus communication interface	■	
BACnet IP, BACnet MSTP (Slave)	■	
Link-up system	■	
Real-time clock	■	
Timer programming	■	
Drain water cooler	■	
Remote fault indication board		■
Mounting rails		■
Mounting rack		■
Pressure compensation set up to units to inch of water column		■
Humidity sensors and humidistats		■
Scale collector tank		■
Reverse osmosis RO		■
BACnet MSTP (Master) interface		■
LonWorks Communication Interface		■
Solid State Relays for High Precision		■
Accessory Board (fan enable)		■



Accessories

- Steam distribution system for ducted installation [1]
- Steam distribution hose [2]
- Blowerpack (built-on or remote) for direct room humidification [3]
- Condensate hose [4]

Technical Data

Specification	RS 010	RS 015	RS 020	RS 030	RS 045	RS 065	RS 090	RS 090	RS 130	RS 180
Capacity (lb/hr)	0-11.4	0-17.6	0-22.8	0-31.8	0-47.9	0-71.9	0-95.4	0-95.4	0-143.2	0-189.3
Capacity (kg/hr)	0-5.2	0-8.0	0-10.4	0-14.5	0-21.8	0-32.7	0-43.4	0-43.4	0-65.1	0-86.0
Input kW max	3.9	6.0	7.7	10.8	16.3	24.5	32.1	32.6	48.0	64.2
Voltage	208-600	208-600	208-600	208-600	208-600	208-600	440-600	208-240	440-600	440-600
Phase	1 and 3	1 and 3	1 and 3	1 and 3	3	3	3	3	3	3
Number of tanks	1x small	1x small	1x small	1x med	1x med	1x med	1x med	2x med	2x med	2x med
Built-on Blower Packs	yes	yes	yes	yes	yes	yes	yes	no	no	no
Dimensions* (WxHxD)	16.5 x 26.4 x 14.6 (inch)			20.9 x 30.7 x 16.3			39.4 x 30.7 x 16.3			

Nortec is the world's leading manufacturer of commercial and industrial humidification and evaporative cooling products and systems, setting standards with regard to energy efficiency and hygienic solutions.

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