

## Specification for Devatec RTH Resistive Type Humidifier

1. Humidifiers shall be Devatec RTH resistive steam humidifier for the production of pure and sterile steam.
2. Humidifiers will comply fully with CE, CSA-UL and GOST requirements.
3. Humidifiers shall be warranted for all components, including resistive elements, for a period of 2 years (to the exclusion of consumable parts such as valves).
4. The humidifier cabinet shall have separate water and electrical compartments for safety which have their own completely removable door panels providing access to the front and both sides of the unit for easy installation and maintenance. Units shall be epoxy-painted zinc galvanized steel.
5. Humidifiers will operate with tap, softened, DI or RO water with at least 30  $\mu\text{S}/\text{cm}$  for conductivity and max 400 ppm for hardness.
6. Humidifiers shall be able to operate at 208V, 230V, 380V, 400V, 415V, 440V, 460V, 480V, 575V, 600V and 690V.
7. The humidifier shall be capable of producing between 5 to 104 kg/h of steam. It shall have the capacity to work in a master/slave arrangement up to seven units.
8. Units shall be able to accept fully common modulating signal ON/OFF or proportional. The microprocessor shall regulate proper filling and draining, adjust steam capacity between 0 to 100%. Accuracy shall be  $\pm 2\%$ .
9. The digital display and keypad on the front panel shall indicate, in standard, all functions of the humidifier including steam production, actual current, steam required, control signal output, high level water, over-current, actual power consumption, operational hours, maintenance due and interval, steam volume produced, fault codes.
10. The tank must be permanent stainless steel.
11. The tank shall be a rocking one with an intermediary position to collect scale and minerals. A cooling cycle shall be available to reduce maintenance time.
12. The heating elements shall be self cleaning INCOLOY elements.
13. A power lamp shall display power to the humidifier and a steam production lamp shall be illuminated while steam is being produced.
14. Units should incorporate a programmable maintenance schedule timer: 500 hours in standard but adjustable from 100 to 20 000 hours.
15. Drainage of the cylinder for maintenance shall be via a switch, located in front of the cabinet, which can be used even without power supply.
16. Humidifiers shall include anti-foaming system.
17. Humidifiers shall remain or not the temperature of the water inside the tank at 80°C.
18. Humidifiers shall have a temperature sensor immersed in the evaporation chamber which prevents over-temperature. It shall be manual reset after an alarms occurs.
19. Humidifiers shall have the capacity to be linked with Devatec sensor and humidistat for fully automatic control.

20. Humidifiers shall be supplied with stainless steel steam distribution pipes with separate condensate drains. For large duct or short absorption distance, humidifiers shall be compatible with HumidiPack panel.

21. An end-of-season drain timer shall auto drain the cylinder after period of inactivity: 3 days in standard but adjustable from 12 hours to 7 days.

22. Water supply pressure to humidifier shall range between 1 to 6 bars, inlet valve shall include a flow restrictor and a built-in strainer.

23. Drain valve shall be with a large orifice for easy scale elimination. The maximum time for a complete drain unit shall be maximum 35 seconds.

24. The water level electrode shall be self cleaning.

25. Humidifiers shall operate with duct pressure up to 2500 Pa.

26. A high flow cooling fan shall be incorporated inside the cabinet.

27. Where direct room humidification is required a room distribution unit shall be used.

27. Options that should be available are:

- BMS with Modbus or Bacnet communication
- Remote information board which is a set of dry contacts indicating steam demand, cylinder cleaning and control circuit alarm
- Weather proof cabinet for outside application
- Support Legs for non wall-mounted installation