

MECHANICAL SPECIFICATION

SECTION 23 84 13

ELECTRIC ELEMENT STEAM HUMIDIFIERS

1 GENERAL

1.1 DESCRIPTION

- A. Provide connection-ready HeaterLine steam humidifiers for fully automated and intrinsically safe production of mineral-free and pure steam in accordance with the Contract Documents.

1.2 WORK INCLUDED

- A. Install steam humidifier as shown on plans and as per manufacturer's instructions.
- B. Install operating controls as shown on plans and as per manufacturer's instructions.

1.3 SUBMITTALS

- A. Provide complete humidifier catalog data, including performance and all components provided.
- B. Provide power and control wiring diagrams.

1.4 QUALITY ASSURANCE

- A. Provide UL or CSA Listed electrode steam humidifier.

2 PRODUCTS

2.1 Self-Contained Humidifiers

- A. Humidifiers shall produce clean, sterile steam from standard tap water by means of electric heating elements immersed in water contained in a stainless steel cylinder. Humidifier shall operate on any quality of water, including demineralized, and shall have the following standard features:

1. Cleanable, re-usable stainless steel steam cylinder;
2. High-quality replaceable heating elements;
3. Protection against operation of heating elements with no water in cylinder;
4. Combined flushing and scale collection system for long operation before maintenance;
5. Heavy-duty blow-down pump to reduce maintenance by pumping out scale;
6. Steam hose adapter for quick installation and removal of the cylinder;
7. Easily accessible connection terminals;
8. Removable cover for easy accessible to components;
9. Corrosion-resistant stainless steel enclosure, with some parts also powder-coated.

- B. Optional features that may be specified on the plans:

1. Integrated drain water tempering to ensure a drain water temperature of max. 140°F;
2. Timer controlled stub flushing.

- C. Steam Distribution

For Duct Injection:

1. Provide stainless steel steam distribution manifolds sized for the duct dimensions, and having a duct mount plate, condensate return, and steam discharge holes designed for short evaporation without spitting.

For Room Injection:

2. Provide packaged room distribution units, consisting of a steam distribution manifold with condensate return, integral quiet cross-flow blowers, contained in a powder coated, corrosion resistant housing. Room distribution unit may be direct or remote mounted.
- D. Microprocessor Control: Highly-efficient control electronics with 16-bit processor for fastest possible steam production, optimum energy efficiency and low-maintenance operation. Comprehensive operational safety through continuous self-monitoring of the unit functions.

Basic Version:

1. Automatic system test incl. self-diagnosis to check all functions and components;
2. Constant or single-stage control;
3. 5 LEDs to indicate 18 operating and service messages;
4. 2 potential free remote signals, one of them freely programmable with 15 options;
5. Stand-by heating of cylinder water for rapid demand response;
6. Stand-by blow-down to prevent standing cylinder water according to VDI 6022;
7. Autonomous adjustment to the corresponding water quality;
8. Integrated communication protocol Modbus RTU (optional converter to BacNet MS/TP);
9. Optional serial interface RS-232 / RS-485 (EIA-232 / EIA-485);
10. Changeover to process humidification.

Comfort Version (includes all the Basic Version functions plus the following):

11. 2 integrated PI controls;
12. 4-line illuminated display;
13. 4 function keys.

Comfort Plus version (includes all the Basic and Comfort Version functions plus the following):

14. Rotary push encoder for simplified one-touch operation and programming;
15. Timer functions.

E. Optional

1. Relay circuit board to output 4 control commands / messages from 15 options.

F. Equipment

1. Humidifiers shall be HeaterLine electric element steam humidifiers as manufactured by HygroMatik GmbH. (www.HygroMatik.com)

G. Acceptable Manufacturers

1. HygroMatik GmbH.

3 EXECUTION

- 3.1 Comply fully with the manufacturer's installation instructions.
- 3.2 Comply fully with all local, electrical, and applicable codes.
- 3.3 Connect to untreated domestic water supply.