

## **MECHANICAL SPECIFICATION**

### **SECTION 23 84 13**

### **ELECTRODE STEAM HUMIDIFIERS**

#### **1 GENERAL**

##### 1.1 DESCRIPTION

- A. Provide connection-ready MiniSteam 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 passing electric current between electrodes through water contained in a plastic cylinder. Humidifier shall have the following standard features:
  - 1. Integrated quiet fan unit for even distribution of steam into the room;
  - 2. Cleanable plastic cylinder – easy to clean without chemicals, and reusable;
  - 3. Solid plate stainless steel electrodes – greatly reduced maintenance, can be replaced quickly without tools;
  - 4. Heavy-duty blow-down pump to reduce maintenance by pumping out scale;
  - 5. Steam hose adapter for quick installation and removal of the cylinder;
  - 6. Easily accessible connection terminals;
  - 7. Removable cover for easy accessible to components;
  - 8. Corrosion-resistant stainless steel enclosure, with some parts also powder-coated.
- B. Optional features that may be specified on the plans:
  - 1. CylinderStar for longer life expectancy of the electrodes in highly conductive water;
  - 2. Integrated drain water tempering to ensure a drain water temperature of max. 140°F;
  - 3. Timer controlled stub flushing;
  - 4. Cylinder rinsing system for decreased maintenance, optional pulse system;

5. Galvanized electrodes for optimized electrical life expectancy for high chlorine content.
- C. 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 blow-down to prevent standing cylinder water according to VDI 6022;
6. Autonomous adjustment to the corresponding water quality;
7. Integrated communication protocol Modbus RTU (optional converter to BacNet MS/TP);
8. Optional serial interface RS-232 / RS-485 (EIA-232 / EIA-485);
9. Changeover to process humidification.

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

10. 2 integrated PI controls;
11. 4-line illuminated display;
12. 4 function keys.

D. Optional

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

E. Equipment

1. Humidifiers shall be MiniSteam electrode steam humidifiers as manufactured by HygroMatik GmbH. ([www.HygroMatik.com](http://www.HygroMatik.com) )

F. 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.