



Standard Water

“ER” Series Electric Humidifier

The “ER” Series Electric Humidifier from PURE Humidifier Co. is loaded with features and options. All you need is tap water, electricity, and a sanitary drain—the humidifier does the rest.

These units feature a Tri-Probe sensor made up of three Teflon®-coated stainless steel probes. The lower probe prevents the heating elements from energizing when the water level is too low. The middle probe electrically activates the water control valve to fill the reservoir. The top probe shuts off the water control valve when the water level reaches the proper height. A control box constantly monitors the humidifier cycle for efficient operation. High efficiency immersion water heaters heat the water to provide steam. Furthermore, a flusher serves to constantly remove surface water mineral buildup, and doubles as a water overflow safety pipe to the drain. A standard accumulative timed drain cycle performs automatic draining and flushing, thus reducing mineral buildup within the reservoir.

When it comes to installation, you have a choice with the “ER” Series Electric Humidifier. The humidifier can be free-standing with a simple (optional) flexible hose connecting the unit to the stainless steel injection tube inserted through the duct wall. For mounting under a duct you simply need hangers and support brackets.

They may also be mounted inside the air handling system (local codes may require moisture-proof construction of certain components).

The versatility of the “ER” Series Electric Humidifier allows you to design these easy-to-clean units into any system simply, efficiently, and reliably.

Our results are comforting



Capacities & Weights Electrical Specifications

Sheet No.
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Capacities & Weights

Standard Water Unit Model No.	Steam Output Capacity †		KW	Humidifier Reservoir Weight			
	lbs/hr	kg/hr		Empty		Full	
				lbs	kg	lbs	kg
ER-1	3	1.4	1	42	19	70	31.4
ER-3	9	4.1	3	42	19	70	31.4
ER-5	15	6.8	5	42	19	70	31.4
ER-6	18	8.2	6	42	19	70	31.4
ER-7	21	9.5	7	42	19	70	31.4

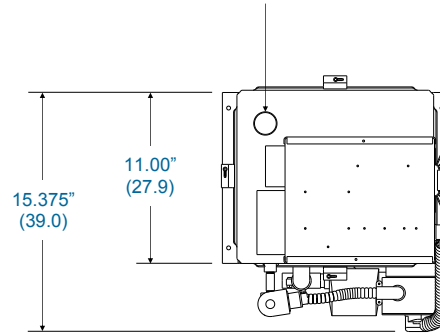
† The above capacities are based on 100% nominal efficiency. Actual humidifier capacity may vary due to the heat loss from the humidifier reservoir. The ambient air temperature, air velocity, and injection tube system will affect the rate of heat loss from the humidifier reservoir. This can also be affected by makeup water temperature, voltage variations, carryover losses, heater resistance tolerance, etc.

Single Phase Amperage*

Standard Water Unit Model No.	Unit KW						No. of Heaters	Heater KW	Control Circuit Voltage
		120V	208V	240V	480V	600V			
ER-1	1	8.3	4.8	4.2	2.1	1.7	1	1.0	24 vac
ER-3	3	25.0	14.4	12.5	6.3	5.0	1	3.0	24 vac
ER-5	5		24.0	20.8	10.4	8.3	2	2.5	24 vac
ER-6	6		28.8	25.0	12.5	10.0	2	3.0	24 vac
ER-7	7				14.6	11.7	2	3.5	24 vac

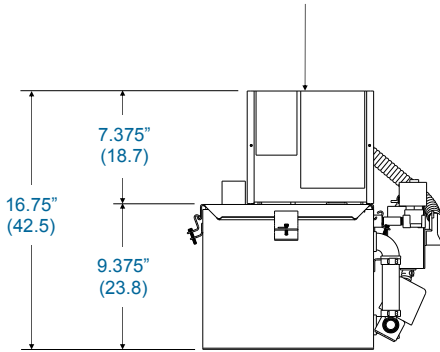
* Other voltages available upon request. Please consult factory for specific availability.

1 1/2" Ø Steam Outlet Connection

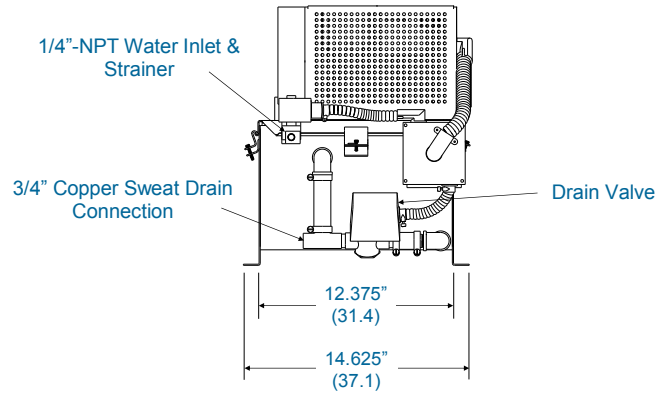


Top View

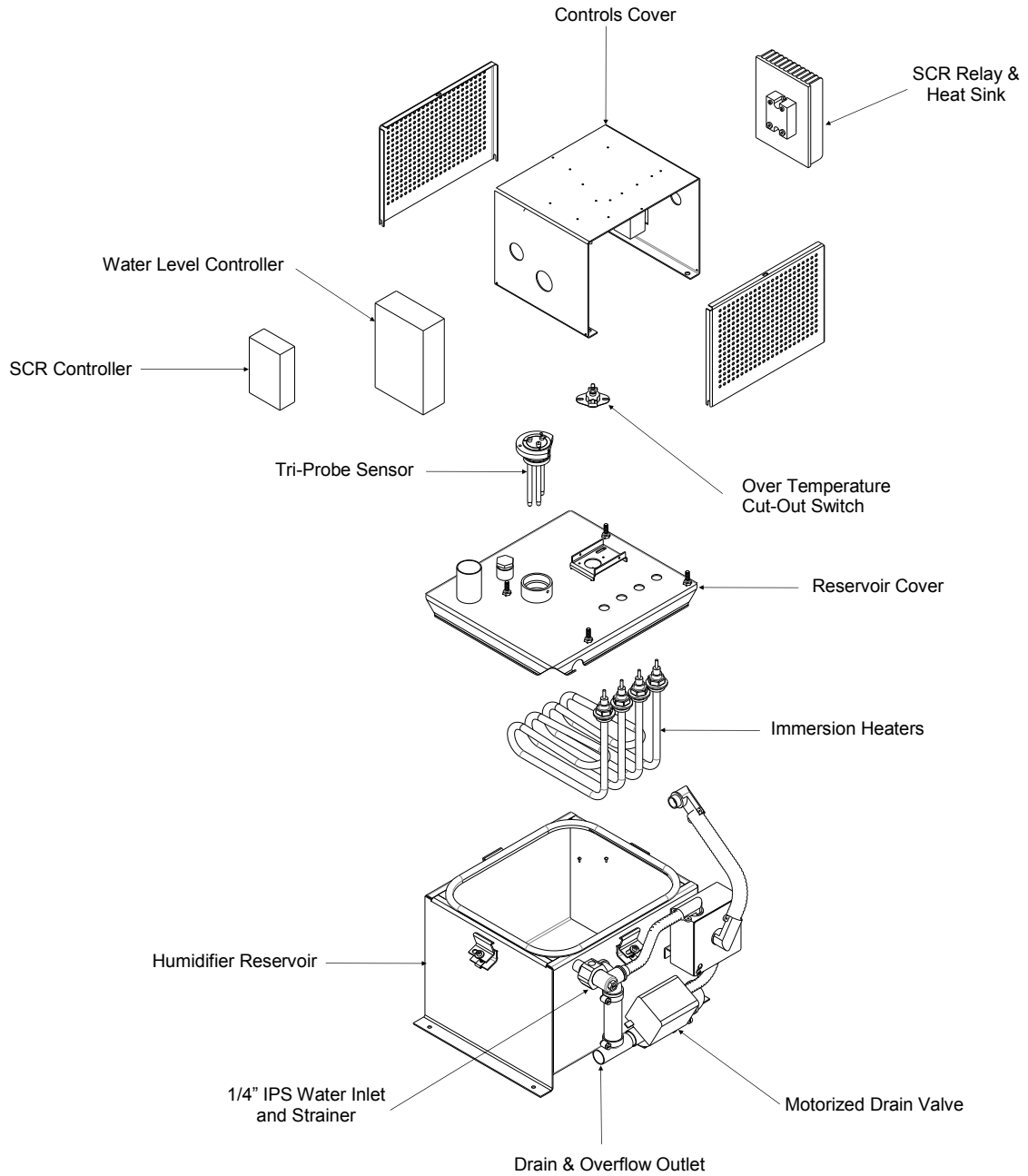
Electrical Control Box



Front View



Right Side View





Specification Sample "ER" Series

Sheet No.

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Humidifier

1. The humidifier shall be electrically heated immersion heater type as manufactured by PURE Humidifier Co. of Chaska, Minnesota.
2. The humidifier shall be tested and approved by ETL/ETL-C Testing Laboratories, Inc.
3. The humidifier shall have an evaporating reservoir with a gasket-sealed cover that is capable of operating at pressures of at least 19" (48 cm- W.C.) without steam or water leaks. The reservoir shall be made of type 304L stainless steel with welded joints.
4. A surface water flusher shall be included to drain away a portion of the water upon each refill cycle. This is to allow mineral deposits produced by earlier evaporation cycles to be removed. Flusher shall be designed for minimal water waste and efficient flushing.
5. The immersion heater(s) shall be incoloy-sheathed and designed for 80 watts per square inch. They shall be attached to the reservoir cover and be easily removed for cleaning or inspection. Expansion and contraction of the heater sheath allows mineral build-up to flake off.
6. A solenoid-operated water fill valve shall be factory-mounted on the body of the humidifier reservoir. The fill valve shall be located to allow a minimum water gap of 1-1/2" (3.81 cm).
7. The humidifier shall have a manual reset over-temperature switch factory-installed on the humidifier reservoir cover. The temperature switch shall provide humidifier over-temperature protection.
8. A solid state, plug-in type control module shall be factory-mounted in the controls box and shall electronically control the automatic refilling, low water cut-off, high water cut-off, manual surface water flushing, and safety switch interlock functions. The module shall include automatic drain functions to drain the reservoir. A cumulative timer shall be field adjustable between 10 to 150 hours of operation. When the system is activated the fill valve will be energized to provide a cool-down tempering of the water prior to draining.
9. The control module shall incorporate LED lights to indicate safety switch interruption, power, fill, heat ready, and drain. The control module shall control all water level control functions through a Tri-Probe sensor mounted on the cover of the humidifier reservoir. The Tri-Probe sensor with stainless steel shield shall electrically sense the water level within the reservoir.
10. SCR Modulation, 100% solid state power controller shall be provided in the control box. The SCR power controller will modulate the humidifier between 0-100% of its rated capacity according to humidistat demand.
11. The electrical control box shall be mounted on the humidifier cover. The control box shall include a magnetic contactor, water level control module, fused control circuit transformer, numbered terminal block, and heater fuse(s). The high voltage wiring shall be shielded to prevent shock hazard. The modulating control voltage shall be field adjustable to match the controlling input signal.

Reference the "Options" page for a description of the options which can be added to the base specification.



Options "ER" Series

Sheet No.

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Humidifier

Insulation. Unit shall be covered (except top cover) with 3/4" (1.9 cm) thick fiberglass duct insulation. Insulation material shall have aluminum foil facing.

Dispersion Methods

Injection Tube(s) and Flexible Hose. Each unit shall include one 10-foot (305 cm) section of 1½" (3.8 cm) I.D. flexible hose and a 1½" (3.8 cm) O.D. stainless steel injection tube long enough to extend across the duct. Steam ports shall direct steam upward into the airflow. The reservoir cover shall have a matching connection so the flexible hose can be connected with two stainless steel hose clamps. A two-piece duct plate shall be provided to seal the duct opening.

Fast-Pac Multiple Tube Assembly. Tube assembly consists of a stainless steel supply/condensate header with a 3/4"-NPT drain connection and horizontal 1½"Ø stainless steel injection tubes.

Insty-Pac Tube Assembly. Tube assembly consists of a steam supply/separator header constructed of stainless steel with steam inlet, condensate drain outlet, and steam jacketed injection tubes welded to header. Steam jacketed injection tubes constructed of stainless steel with punched steam ports of the proper size and spacing to deliver the maximum specified capacity.

High Efficiency Insulated Tubes. Thermoplastic wrap reduces condensate loss and unwanted heat gain during cooling mode.

Blower Pack. Unit shall allow for direct space humidification without the use of ductwork. Unit shall be contained within a cabinet that is constructed of 18-gauge steel with a baked enamel paint finish. Unit shall have a two-speed field-adjustable fan. The fan is controlled by a thermostat interlock mounted on the steam distributor, it shall activate the fan before steam is discharged and deactivate the fan after all residual steam has been discharged. The blower shall be designed for remote wall mounting.

Controls

VAV Control. A dual input, single output auto-selector shall be supplied to provide a single modulating output signal to the humidifier control cabinet (SCR modulating option must be specified). The auto-selector shall allow the use of a modulating wall mount humidistat and modulating duct high-limit humidistat (optional) to control critical variable air volume (VAV) air handling systems. The system shall automatically determine which of the two modulating signals is dominant and slowly reduces the humidifier output capacity, thus preventing over-saturation of the VAV system.

Outdoor Air Temperature Setback. Provides automatic reduction of RH set-point to prevent condensation on windows during extreme cold weather.

Airflow Proving Switch. A diaphragm-operated airflow proving switch with adjustable control range of .05" W.C. to 12.0" W.C. shall be provided for field installation. Switch rating shall be 2.5 amps at 120V.

Duct High-Limit. A high-limit humidistat shall be provided for duct installation. The high-limit shall be field-set to prevent over saturation within the supply duct.

Drain Tempering Kit. DCT-927 self-actuated drain tempering kit – The drain tempering kit is designed to provide drain and condensate water at a temperature of less than 140°F.

Condensate Pump. Used to lift condensate from the unit and dispersion tube. Separate 120V (3.1 amp) services required by others.