

*Deionized, Demineralized, or Reverse Osmosis Water*

# *“ERDDR” Series Electric Humidifier*

Loaded with features and options, that's the “ERDDR” Electric Series Humidifier from PURE Humidifier Co. All you need is deionized, demineralized or reverse osmosis water, electricity and a sanitary drain. The humidifier does the rest.

These units are designed to operate with absolutely pure water which is corrosive and will not conduct electricity. They feature special stainless steel construction combined with special assembly techniques, assuring corrosion resistant joints.

The water level is maintained with a special float valve to control the water level (instead of the Tri-Probe sensor which is utilized on the “ER” series). A low water cut-off switch is utilized to protect the heating elements. Both floats are protected from the water turbulence by an internal baffle. Since the reservoir's water level is automatically and constantly adjusted, there is no downtime; steam is always available.

A solid state controller mounted on the cover, constantly monitors the humidifier demand and cycles heaters for efficient operation. The controller also indicates the status of the humidifier. High efficiency immersion water heaters heat the water to provide steam. Furthermore, a water overflow safety pipe is standard on all “ERDDR” units.

Since water mineral buildup does not occur with pure water, there is no need for an automatic drain system or cleaning. These units are practically maintenance-free.

When it comes to installation, you have a choice with the “ERDDR” 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.

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

The unique and easy to clean cover-mounted heater assembly, and versatility of the “ERDDR” Series Electric Humidifier will allow you to design them into any system simply, efficiently and reliably.

“ERDDR” units are designed for water supplies having a minimum of 100k ohm-cm resistivity up to water having 18 meg ohm-cm resistivity.

*Our results are comforting*



## Capacities & Weights Electrical Specifications

Sheet No.  
**ERDDR-2**

### Capacities & Weights

Deionized Water Unit Model No.	Steam Output Capacity †		KW	Humidifier Reservoir Weight			
	lbs/hr	kg/hr		Empty		Full	
				lbs	kg	lbs	kg
ERDDR-1	3	1.4	1	42	19	70	31.4
ERDDR-3	9	4.1	3	42	19	70	31.4
ERDDR-5	15	6.8	5	42	19	70	31.4
ERDDR-6	18	8.2	6	42	19	70	31.4
ERDDR-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\*

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

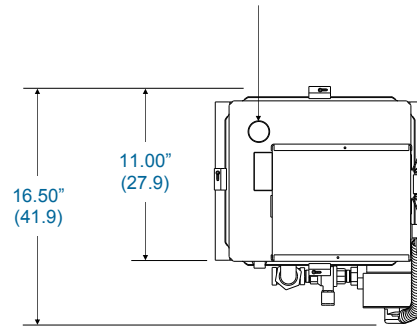
\* Other voltages available upon request. Please consult factory for specific availability.



**Dimensions & Layout**  
**"ERDDR" Series**

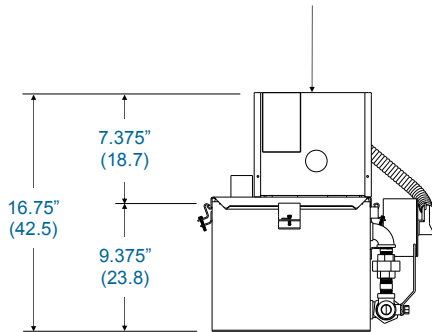
Sheet No.  
**ERDDR-3**

1 1/2"Ø Steam Outlet Connection

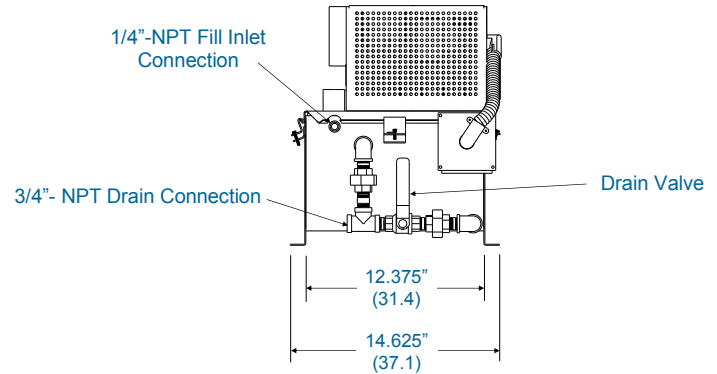


**Top View**

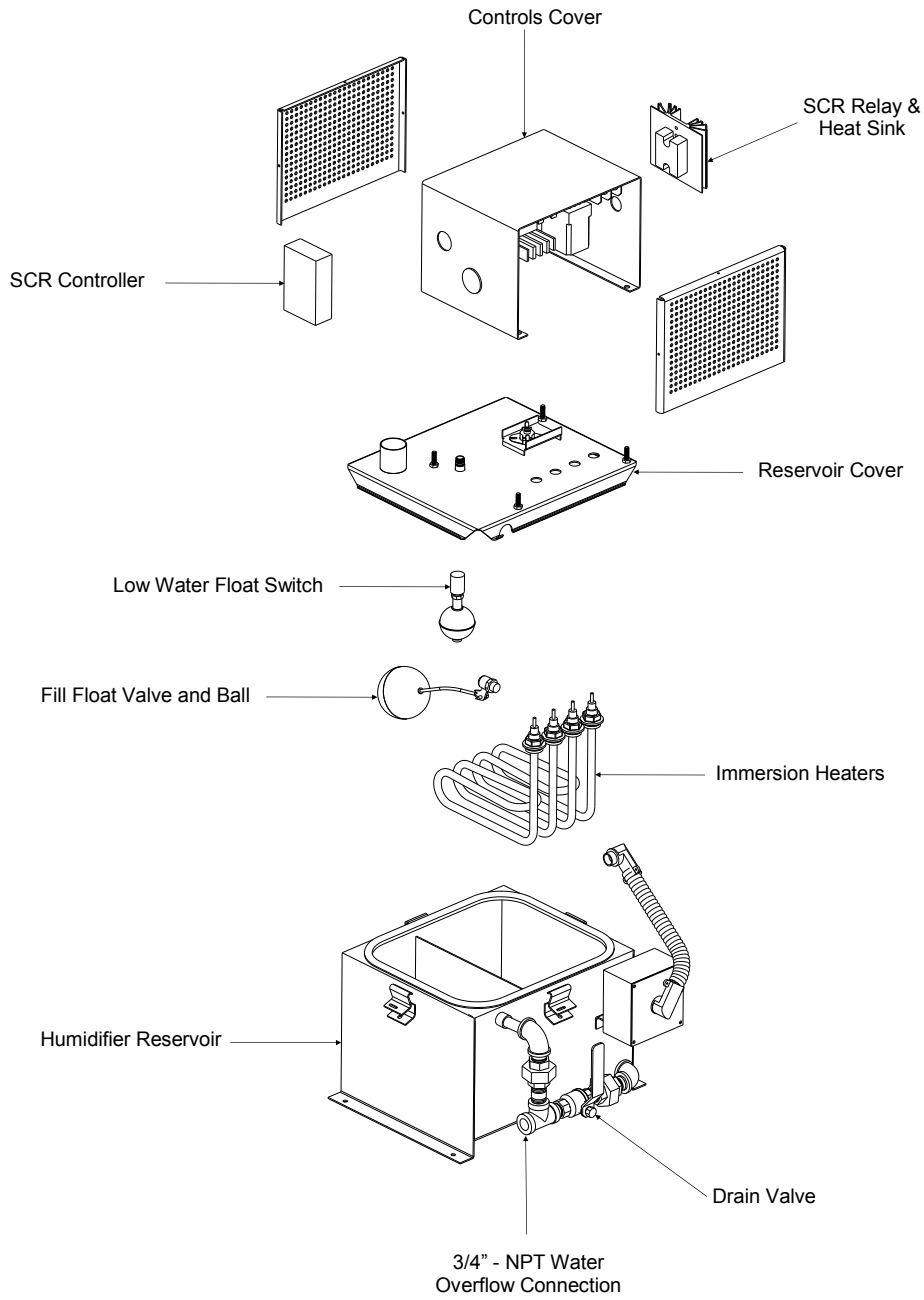
Electrical Control Box



**Front View**



**Right Side View**





**Specification Sample**  
**"ERDDR" Series**

Sheet No.  
**ERDDR-5**

**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 Testing Laboratories, Inc.
3. The humidifier shall be suitable for use with deionized, demineralized, or reverse osmosis water with a maximum purity of 18 mega-ohms per centimeter resistivity.
4. 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.
5. A stainless steel float-operated low water cut-off switch shall be provided. The float switch shall provide positive low water cut-off of the humidifier immersion heaters.
6. A stainless steel, float-operated, water fill valve mounted on the top near the front shall be provided. The fill valve shall provide automatic refilling of the humidifier reservoir. The water inlet shall be located to allow a minimum water gap of 1-1/2" (3.81 cm).
7. 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.
8. The humidifier shall have a 1/2" (1.3 cm) overflow pipe to prevent overflowing of the humidifier reservoir.
9. A 1/2" stainless steel ball valve shall allow for manual draining of the humidifier reservoir.
10. 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.
11. 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.
12. The electrical control box shall be mounted on the humidifier cover. The control box shall include a magnetic contactor, 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 "ERDDR" Series

Sheet No.  
**ERDDR-6**

### 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 VAV humidistat shall be supplied to provide a single modulating output signal to the humidifier control cabinet (SCR modulating option must be specified). The humidistat shall allow the use of a modulating wall or return duct mount humidistat and a modulating supply air duct high-limit humidistat 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.