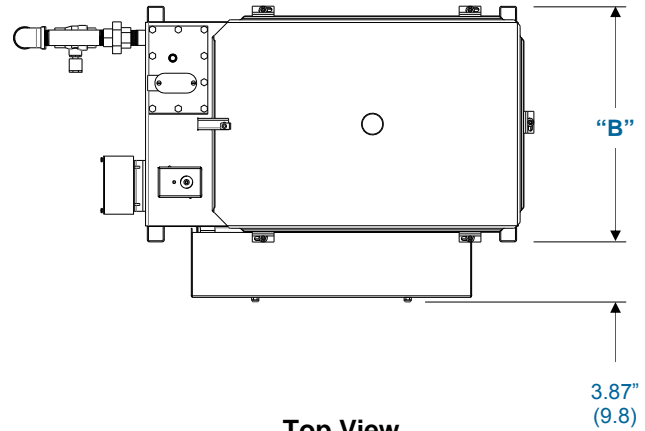
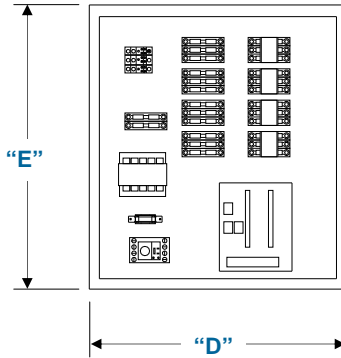
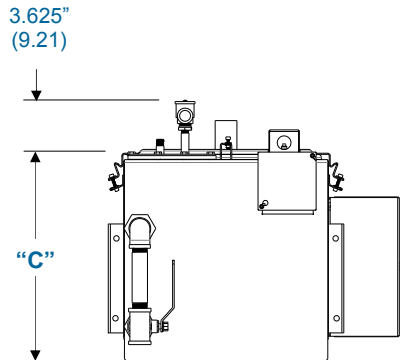


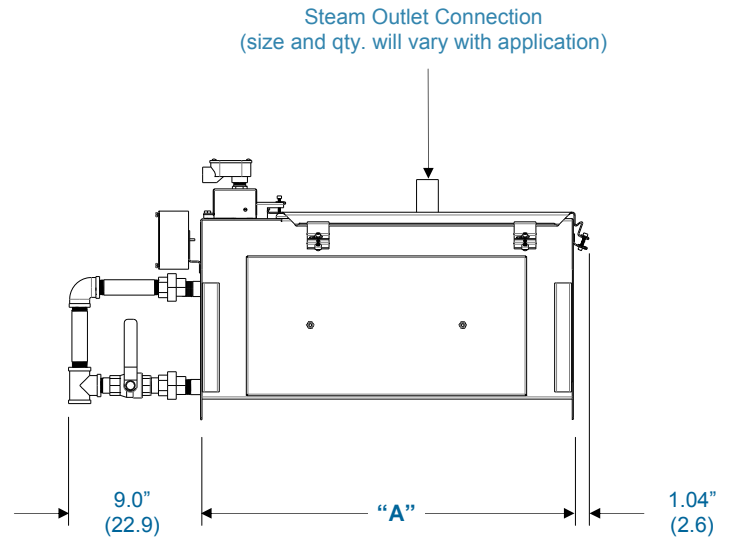
NEMA- 12 Humidifier Control Cabinet
 (reference control cabinet notes)



1. Door has been removed from the drawing for clarity.
2. Control cabinet is shipped loose for field mounting unless optional factory mounting is specified.
3. Dimension "F" = Control cabinet depth.



Front View



Right Side View

Unit Dimensions						
Model	Dim. "A"		Dim. "B"		Dim. "C"	
	inches	cm	inches	cm	inches	cm
ESDDR-3 thru 19.5	17.68"	44.9	16.21"	41.2	13.84"	35.2
ESDDR-22 thru 63	25.68"	65.2	16.21"	41.2	13.84"	35.2
ESDDR-66 thru 102	34.18"	86.8	20.46"	52.0	13.84"	35.2

Control Cabinet Dimensions						
Model	Dim. "D"		Dim. "E"		Dim. "F"	
	inches	cm	inches	cm	inches	cm
ESDDR-3 thru 19.5	14.00	35.6	16.00	40.6	6.00	15.2
ESDDR-22 thru 63	20.00	50.8	20.00	50.8	7.00	17.8
ESDDR-66 thru 102	20.00	50.8	24.00	61.0	7.00	17.8
ESDDR-*	24.00	61.0	30.00	76.2	7.00	17.8

* Control panel for use with units having 123 amps or higher



Electrical Specifications
“ESDDR” Series

Sheet No.
ESDDR-4

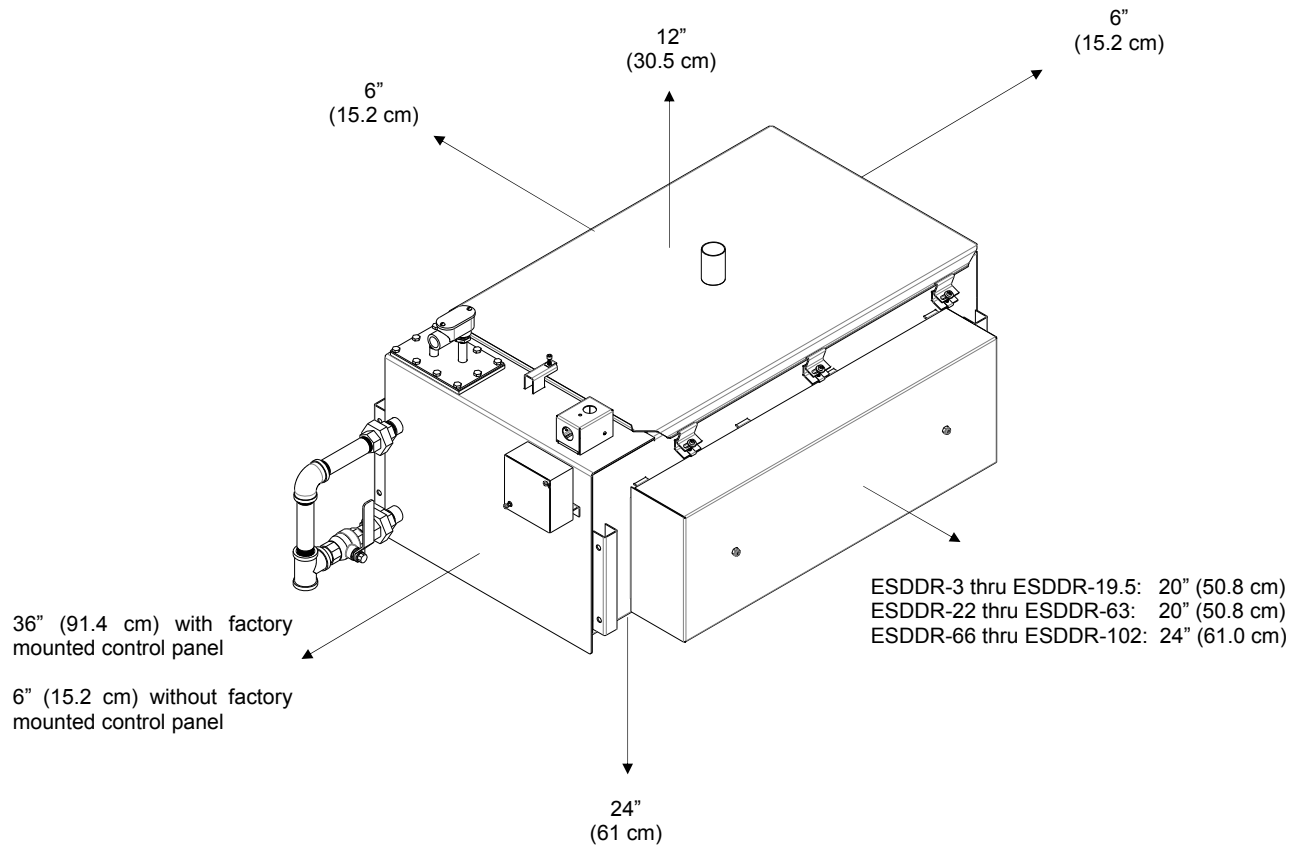
Single Phase Amperage†

Model	Unit KW	120V	208V	240V	480V	600V	No. of Heaters	Heater KW	Control Circuit Voltage
ESDDR-3	3	25.0	14.4	12.5	6.3	5.0	3	1.0	24 vac
ESDDR-4.5	4.5	37.5	21.6	18.8	9.4	7.5	3	1.5	24 vac
ESDDR-5.5	6.0		28.8	25.0	12.5	10.0	3	2.0	24 vac
ESDDR-7.5	7.5		36.1	31.3	15.6	12.5	3	2.5	24 vac
ESDDR-11	10.5				21.9	17.5	3	3.5	24 vac
ESDDR-14	13.5				28.1	22.5	3	4.5	24 vac
ESDDR-15	15				31.3	25.0	3	5.0	24 vac
ESDDR-16.5	16.5				34.4	27.5	3	5.5	24 vac
ESDDR-19.5	19.5				40.6	32.5	3	6.5	24 vac
ESDDR-22	21				43.8	35.0	6	3.5	24 vac
ESDDR-28	27				56.3	45.0	6	4.5	24 vac
ESDDR-30	30				62.5	50.0	6	5.0	24 vac
ESDDR-33	33				68.8	55.0	6	5.5	24 vac
ESDDR-39	39				81.3	65.0	6	6.5	24 vac
ESDDR-42	42				87.5	70.0	6	7.0	24 vac
ESDDR-45	45				93.8	75.0	9	5.0	24 vac
ESDDR-49.5	49.5				103.1	82.5	9	5.5	24 vac
ESDDR-58.5	58.5				121.9	97.5	9	6.5	24 vac
ESDDR-63	63				131.3	105.0	9	7.0	24 vac
ESDDR-66	66				137.5	110.0	12	5.5	24 vac
ESDDR-78	78				162.5	130.0	12	6.5	24 vac
ESDDR-84	84				175.0	140.0	12	7.0	24 vac
ESDDR-102	102					170.0	12	8.5	24 vac

Three Phase Amperage†

Model	Unit KW	208V	240V	480V	600V	No. of Heaters	Heater KW	Control Circuit Voltage
ESDDR-3	3	8.3	7.2	3.6	2.9	3	1.0	24 vac
ESDDR-4.5	4.5	12.5	10.8	5.4	4.3	3	1.5	24 vac
ESDDR-5.5	6.0	16.6	14.4	7.2	5.8	3	2.0	24 vac
ESDDR-7.5	7.5	20.8	18.0	9.0	7.2	3	2.5	24 vac
ESDDR-11	10.5	29.1	25.3	12.6	10.1	3	3.5	24 vac
ESDDR-14	13.5	37.5	32.4	16.2	13.0	3	4.5	24 vac
ESDDR-15	15	41.6	36.1	18.0	14.4	3	5.0	24 vac
ESDDR-16.5	16.5	45.8	39.7	19.8	15.9	3	5.5	24 vac
ESDDR-19.5	19.5			23.5	18.8	3	6.5	24 vac
ESDDR-22	21	58.3	50.5	25.3	20.2	6	3.5	24 vac
ESDDR-28	27	75.0	64.9	32.5	26.0	6	4.5	24 vac
ESDDR-30	30	83.3	72.2	36.1	28.9	6	5.0	24 vac
ESDDR-33	33	91.6	79.4	39.7	31.8	6	5.5	24 vac
ESDDR-39	39			46.9	37.5	6	6.5	24 vac
ESDDR-42	42			50.5	40.4	6	7.0	24 vac
ESDDR-45	45	124.9	108.3	54.1	43.3	9	5.0	24 vac
ESDDR-49.5	49.5	137.4	119.1	59.5	47.6	9	5.5	24 vac
ESDDR-58.5	58.5			70.4	56.3	9	6.5	24 vac
ESDDR-63	63			75.8	60.6	9	7.0	24 vac
ESDDR-66	66	183.2	158.8	79.4	63.5	12	5.5	24 vac
ESDDR-78	78			93.8	75.1	12	6.5	24 vac
ESDDR-84	84			101.0	80.8	12	7.0	24 vac
ESDDR-102	102			122.7	98.2	12	8.5	24 vac

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



Mounting Location Considerations

Install in a location where the ambient air temperature is between 40°F - 100°F (4.4°C - 37.8°C) and relative humidity between 0% - 90% and non-condensing.

Install in a location where there is easy access to a water supply, electrical supply, and open sanitary drain.

Install as close as possible to the steam distribution grid.

Clearances shown are minimum recommendations only. Please consult local and national codes for final installation location.

Do not install where humidifier operational noise will be a nuisance.

Allow enough room for proper water seals depths.

Do not install above any critical processes, equipment, or locations incase of a water leak.

Do not install near variable frequency drives, electromagnetic equipment or motors.

SCR RELAY CLEARANCE NOTE

If SCR modulating control is supplied on a non-factory mounted control panel you will need to leave 12" clearance on the sides of the panels where the SCR heat sinks are located.



INTAC[®] Specification Sample "ESDDR" Series

Sheet No.
ESDDR-9

An INTAC[®] programmable electronic microprocessor humidifier control system shall be mounted and pre-wired to the humidifier control panel door. All humidifier electrical, ground and control terminal connections shall be enclosed in an ETL listed NEMA 12 enclosure. The INTAC[®] controller shall provide the following standard features:

- Self-diagnostics and system verification on start-up.
- Evaporating reservoir water level verification, control and safety interlock.
- Cold water tempering prevents excessively hot water from draining during an automatic or seasonal drain cycle.
- Safety circuit input terminals including over-temperature shut down.
- Terminal connections to accept virtually all control input signals. Input control range is selected as an "ON-SCREEN" prompt.
- User adjustable controlling and high-limit RH PID functions with adjustable parameters (if utilized).
- Door-mounted display and user interface. Provides two lines of system messaging on a vacuum fluorescent display screen, LED operational indication and keypad parameter entry system.
- Vacuum fluorescent display brightness is adjustable.
- Adjustable input signal filter to attenuate noisy control input signal.
- Numbered screen prompts for set-up and service identification.
- Keypad lock-out with user selected access levels.
- Time-delayed scrolling display loop will begin cycling ten minutes after no buttons have been pressed and will display the next item for 30 seconds before continuing down the list – displays system parameters including: Low and High RH Alarms, System Faults, System Status, Set Point and Actual Space RH, Set Point and Actual Duct RH (optional), Outdoor Air Temperature (optional), Percent Power Output, Humidifier Output (in lbs/hr or kg/hr), Accumulated Run Time, Time to Clean timer, Water Level, Water Temperature Set Point and Actual (optional) and Control Type.
- INTAC[®] controller will automatically shut down when the ambient temperature is outside of designed operating temperature range.
- Full Networking and BAS communication capability. Communication connections shall provide two-way communication via EIA-485 connected Modbus between the INTAC[®] controller and the Building Automation System (BAS) (if utilized).
- High/Low humidity deviation alarm contacts (modulating control only).
- Multiple humidifiers can run off of one control signal from a BAS system. Humidifiers can be set up to run in parallel or in series.
- Safety Circuit/System Fault/Low Water alarm contacts.
- Flash Memory – allows system upgrades through EIA-485 terminal connections with a laptop computer and access to e-mail.

OPTIONAL CONTROL FEATURES TO BASE SPECIFICATION

- A. Time Cycle Modulation. Provides 0-100% time proportioned control of the heater output. A compatible humidity sensor shall be shipped loose for field installation ($\pm 3-4\%$ RH).
- B. SCR Modulation. Provides 0-100% power modulation of the heater outputs down to a one-second cycle rate. All heater sets have full SCR control. A compatible humidity sensor shall be shipped loose for field installation ($\pm 1-2\%$ RH).
- C. SCRmod Control. This is a trim, plus-stage setup using SCRs on one heater set and contactors on the rest. Provides 0-100% power modulation of the heater outputs down to a one-second cycle rate. A 3% hysteresis is built-in so the contactors are not turning on and off quickly. A compatible humidity sensor shall be shipped loose for field installation ($\pm 2-3\%$ RH).
- D. Variable air volume (VAV) anticipation control. The INTAC[®] software shall accept a modulating high-limit humidity input and space controlling RH input, then modulates the heater output to prevent over saturation of the supply air due to changes in the quantity of air flow. A compatible humidity sensor shall be shipped loose for field installation.
- E. Cold weather relative humidity reset. The INTAC[®] software shall accept a modulating temperature input and automatically reduce the space RH set-point on a drop in the outside temperature. The reduction of the RH set-point during cold weather periods prevents damage due to interior window condensation.
- F. Reservoir thermocouple water temperature control. The INTAC[®] software provides standby water temperature sensing and freeze protection.



Reference the "Specification Sample" for the humidifier base specification.



Options "ESDDR" Series

Sheet No.
ESDDR-10

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.

Freeze Protection. A factory-installed temperature sensor shall be mounted onto the humidifier reservoir. The system shall maintain the water temperature above freezing.

Stand-by Water Temperature Sensing. Consists of a temperature sensor to maintain water temperature at a selected level for fast response upon a call for humidity.

DDR Seasonal End of Use Drain. Provides automatic seasonal drain of reservoir. Will drain water from the humidifier tank after a period of time with no humidity demand.

Mounting

Support Legs. Provide support legs made of 1-1/4" x 1-1/4" x 1-1/4" (3.2 cm) angle iron and painted with enamel gray paint. Distance from humidifier bottom to floor shall be 24" (61 cm).

Wall Brackets. Provide two wall brackets made of 1-1/4" x 1-1/4" x 1-1/4" (3.2 cm) angle iron and painted with enamel gray paint.

Injection Tubes

Injection Tube(s) and Flexible Hose. Each unit shall include one or more 10-foot (305 cm) sections of 1-1/2" (3.8 cm) I.D. flexible hose and a 1-1/2" (3.8 cm) O.D. stainless steel injection tube long enough to extend across the duct. 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.

Blower Pack. Blower pack consists of a two-speed contained in an 18-gauge steel cabinet with a factory mounted and wired temperature interlock. One Blower Pack can be used per each 33 KW.

Fast-Pac Multiple Tube Assembly. Tube assembly consists of a stainless steel supply/condensate header with a 3/4"-NPT drain connection and horizontal 1-1/2"Ø stainless steel injection tubes.

Insty-Pac Tube Assembly. Tube assembly consists of a steam supply/separators 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.

To Control Cabinet

Control Cabinet Factory Mounting. Humidifier control cabinet shall be factory-mounted and wired to the left side of the humidifier.

NEMA 4 Control Cabinet. A NEMA 4 weather-tight control cabinet shall be substituted for the standard NEMA 12 cabinet.

Control Panel Door Lock. Control cabinet shall be provided with a factory-installed key lock on the cabinet door.

Controls and Safety Devices

Communications Gateway. Allows Modbus to communicate with BACnet or LonWorks networks.

Web Interface. For remote control and monitoring of humidification system, data logging, and e-mail alerts.

Air Flow Proving Switch. A diaphragm operated air flow 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.

Miscellaneous Accessories

DCT-927 Drain Tempering Kit. Provides cold water mixing of the 212°F drain water.

Condensate Pump. Used to lift condensate from the humidifier or tube assembly.

Outdoor Enclosure. Galvanized steel enclosure with tank freeze protection, control panel mounted, support legs, insulated tank, enclosure heater and hinged access doors. Enclosure is ready to be curb-mounted with the humidifier pre-installed. Ships as one piece. Roof curb is not included.

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Reference the "Specification Sample" for the humidifier base specification.