

Supplemental Manual

Herrtronic® RDU-D

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I. LIMITED WARRANTY

Seller warrants the equipment of its manufacturing to be free from defects in workmanship and material for a period of 24 months after shipment. This warranty is limited, however, to the repair or replacement of defective equipment, which is returned, freight prepaid, to Seller's factory.

This limited warranty does not apply to any part or component that is damaged in transit or when handling, has been subject to misuse, negligence or accident, has not been installed, operated or serviced according to Seller's instructions, or has been operated beyond the factory-rated capacity or has been altered in any way.

Seller's liability is limited to replacement of defective parts or components and does not include any cost of labor (including, but not limited to, labor required to remove and/or reinstall any defective part) other than TRION/ HERRMIDIFIER factory labor.

TRION/HERRMIDIFIER shall not be responsible for loss of use of any product, loss of time, inconvenience, or damage to other equipment, or any other indirect or consequential damage with respect to property whether as a result of breach of warranty, neglect, or otherwise.

THE WARRANTIES AND LIABILITIES SET FORTH ARE IN LIEU OF ALL OTHER WARRANTIES AND LIABILITIES, EXPRESSED OR IMPLIED, IN LAW OR IN FACT, INCLUDING IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FORPARTICULAR PURPOSE.

The foregoing shall constitute the total liability of seller in the case of defective performance of all or any of the equipment or services provided to Buyer. Buyer agrees to accept and hereby accepts the foregoing as the sole and exclusive remedy for any breach or alleged breach of warranty by Seller.

II. GENERAL DESCRIPTION

The RDU-D Series Room Distribution Units are designed as a companion module for all MD Series Herrtronic humidifiers.

The RDU may be directly mounted on top of the Herrtronic cabinet or mounted remotely. The RDU consists of a fan, controls, & steam hose to distribute the steam directly into the space. RDU-D must he remotely mounted when used with an MDM series humidifier.

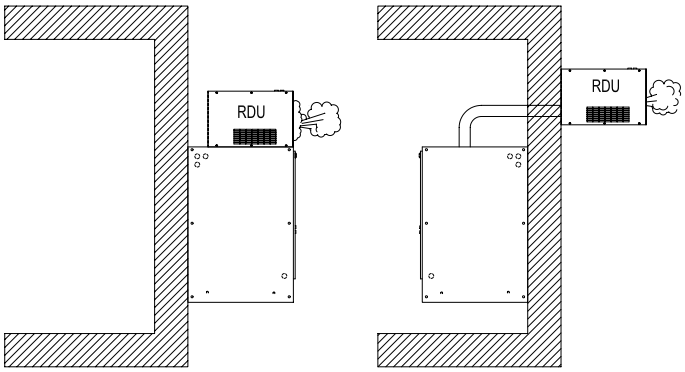


Figure 1 - Mounting Options

Model No	Electrical Characteristics	Capacity
RDU-D-1	208-240-1-50/60	5-50 lbs/hr.
RDU-D-1T	480-600-1-50/60	
RDU-D-2	208-240-1-50/60	60-100 lbs/hr.
RDU-D-2T	480-600-1-50/60	
RDU-D-2R	208-240-1-50/60	110-250 lbs/hr.
RDU-D-2L	208-240-1-50/60	
RDU-D-2TR	480-600-1-50/60	
RDU-D-2TL	480-600-1-50/60	

Note: 1T & 2T models include a transformer to provide 208/230 single phase power to the RDU.

Note: MDD Units require two RDU units. For Direct Mount you must use a specific right and left mount unit. For remote mount, two Identical units may be used.

For remote mounting applications, the plumbing and electrical connections may be routed through the bottom or back of the RDU. There are two electrical knockouts, two steam supply knockouts and one condensate return knockout on both the bottom and back to facilitate installation.

As shipped, the RDU is set up for direct unit mounting. Longer wiring and condensate return tubing (supplied) will be required for remote mounting. Be sure to use 18 gauge (minimum) copper conductor wire with insulation rated for 600 VAC. Supply power may originate from the Herrtronic humidifier or a separate supply. If a separate source is used, be sure to install a dedicated power disconnect. All hardware and accessory components required for installation are included as listed below:

Accessory Bag Contents

Item	Quantity
¾" I.D. Plastic bushing	2
3" Diameter plastic hole plug	2
5/16" I.D. Plastic bushing	1
Steam inlet union	1*
2 ½" Stainless steel hose clamp	1*
¼" x 2" Lag screw	2
#8–32 x 3/8" Stainless steel machine screw	4
Wiring Kit	1
¼" O.D. Condensate return tubing	10'
*-Double quantity for RDU-D-2 series units	

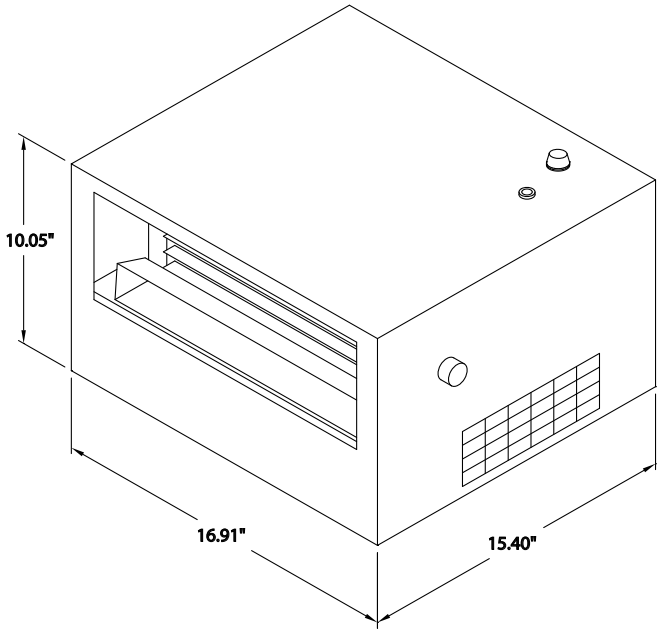


Figure 2 - Overall Dimensions

III. INSTALLATION PREPARATION

! WARNING !
Disconnect power to the humidifier while installing RDU.

The RDU unit must either be placed higher than the Herrtronic unit or provisions for handling the condensate via an external drain must be made. The following chart details the physical clearances around the cabinet for servicing the unit. Figure 13 details the clearances required due to the steam plume.

MINIMUM CLEARANCES AROUND CABINET
LEFT - 15"
RIGHT - 15"
TOP* - 2"
BOTTOM - 0"
* Subject to output, fan speed and room conditions

NOTE:
The steam plume should not impinge on walls, ceilings or other objects. Supply air registers, if present, must be directed away from RDU.

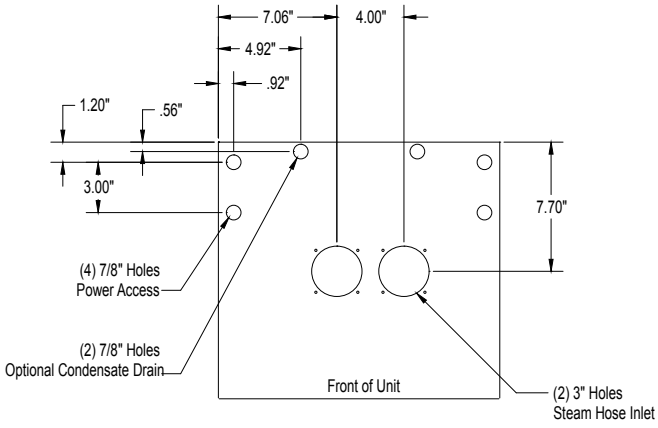


Figure 3 - Bottom View Dimensions

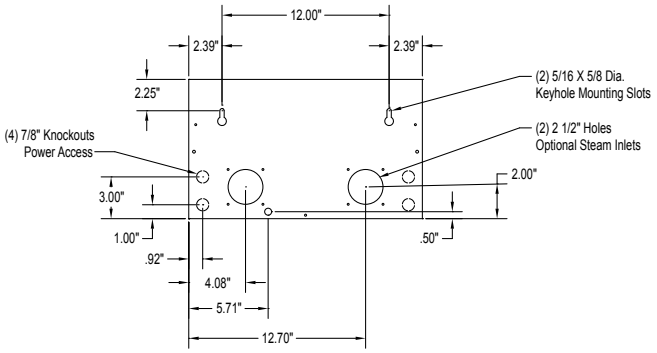
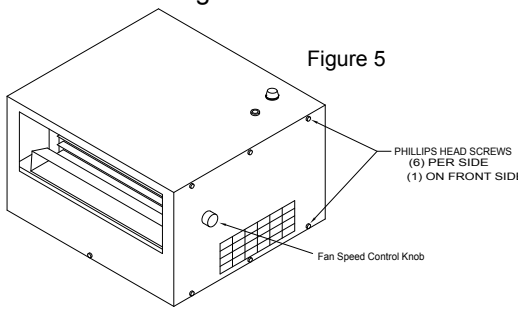


Figure 4 - Back View Dimensions

REMOVE THE COVER FROM THE RDU

1. Loosen the two hex socket head set screws on the fan speed control knob and remove knob (Figure 5).
2. Remove the phillips head screws which fasten the cover to the housing.

Figure 5



IV. DIRECT MOUNT OPTION (MDS, MDD)(Figure 6 & 7)

! WARNING!
Be sure to disconnect power to the Herrtronic Humidifier before beginning installation.

1. Assure that the mounting for the Herrtronic unit will support the additional 40 pound load of each RDU unit.
2. Remove the knock-out from the top of the Herrtronic cabinet and install the 5/16" I.D. plastic bushing for the condensate return.
3. Remove the rearmost 7/8" knockout from the top of the Herrtronic cabinet.
4. Install one 3/4" plasitc bushing from the inside into the rearmost 7/8" hole in the bottom of the RDU.
5. Place the RDU on the Herrtronic cabinet, guiding the steam hose(s) into the tank compartment.
6. Feed the wires (total of seven) through the 3/4" bushing and condensate tubing through the 5/16" bushing into the Herrtronic unit.
7. Fasten the RDU in place using four #8-32 self-tapping screws installed from inside the Herrtronic cabinet.
8. Replace the RDU cover & fan speed control knob.
9. Insert the condensate return tubing into the grey plastic fill tee. It will extend I" into the tee.
10. Connect wires # 1 -6 to the 6 pole RDU terminal strip located near the top of the Herrtronic high voltage electrical compartment. Connect the ground wire #24 to the Herrtronic ground terminal located near the bottom of the high voltage compartment.

NOTE
See Figure 15, 16 & 17 for standard electrical hookup for MDM and MDS.

11. Remove jumper wire #39 from the Herrtronic 12 pole controls terminal strip located in the low voltage electrical compartment between poles #1 and #2.

Installation is now complete. Proceed to the RDU Operation section of this manual then to the Start-Up section of the Herrtronic Installation and Operation Manual OM-93.

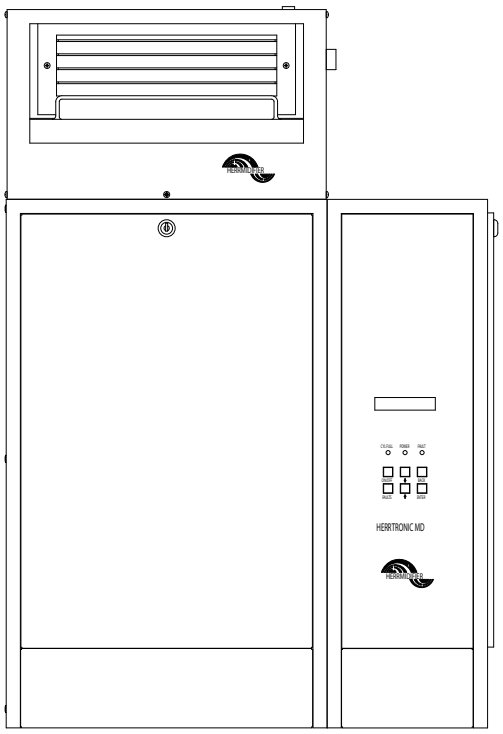


Figure 6 - MDS Direct Mount

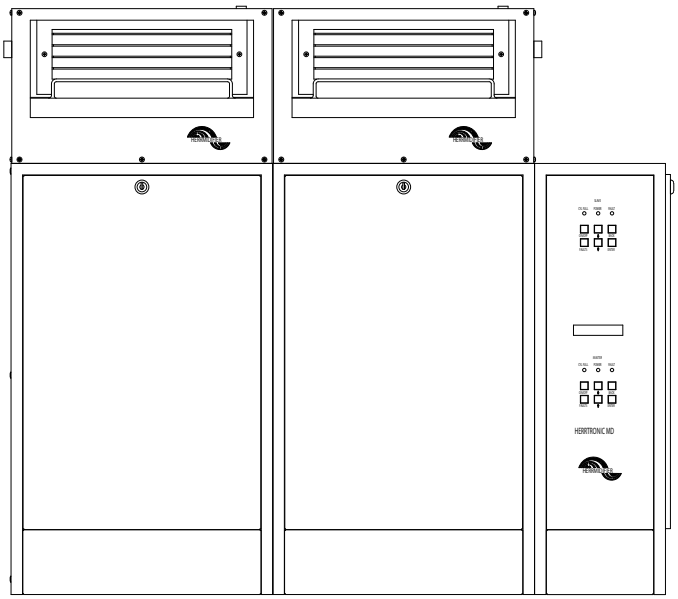


Figure 7 - MDD Direct Mount

V. REMOTE MOUNT OPTION (MDM, MDS, MDD)

1. The RDU may hang directly on a wall using the two 1/4" x 2" lag screws included. There are two key-hole slots on the back of the cabinet which engage these screws. Be certain that: 1) the screws are fastened securely enough to the wall to support the 40 lbs. weight of each RDU unit, and 2) the screws are level. Turn the screws in until the heads are 1/8" away from the mounting surface.
2. Hang the unit on the wall and tighten the two lag screws.
3. The steam hose(s) is to be connected using the steam inlet union(s) (Figure 8).
4. Trim the steam hose(s) which is connected to the RDU manifold so that it fits properly onto the union(s) and secure connections with a hose clamp(s).
5. Fasten steam inlet union(s) to bottom or back of RDU cabinet with screws.
6. Remove the knockout from the top of the Herrtronic cabinet and install the 5/16" I.D. plastic bushing (included).
7. Remove the 18" piece of condensate return tubing connected to the manifold elbow.
8. Uncoil the 10' piece of condensate return tubing (drain line), feed into the RDU cabinet, from the bottom or back, and connect to the manifold elbow.
9. Run the condensate return tubing down into the Herrtronic cabinet through the 5/16" I.D. plastic bushing.
10. The condensate tubing can be attached to the steam hose or electrical conduit interconnecting the RDU and Herrtronic with cable ties or equivalent.
11. After the condensate tubing is secured, insuring that there are no kinks or low spots, the length should be trimmed so that it can extend 1" into the grey plastic fill tee in the Herrtronic unit.
12. National, state or local electrical codes may require the use of two separate conduits - one for high voltage supply power and one for control wiring.
13. There are a total of seven wires which are to be connected between the RDU and the Herrtronic unit. The RDU receives all of its power and control from the Herrtronic unit. Use the two 7/8" holes or knockouts on the bottom or back of the RDU cabinet and the two 7/8" knockouts on the top of the Herrtronic cabinet for wiring conduit.
14. Wires #3 and #4 are the high voltage power supply and should be run in one conduit.
15. Along with the ground wire #24, wires #1, #2, #5, and #6 should be run in the second conduit.
16. Connect wires # 1-6 to the 6 pole RDU terminal strip located near the top of the Herrtronic high voltage electrical compartment. Connect the ground wire #24 to the Herrtronic ground terminal located near the bottom of the high voltage compartment.

NOTE
See Figure 15, 16 & 17 for standard electrical hookup for MDM and MDS.

17. Remove jumper wire #39 from the Herrtronic 12 pole controls terminal strip located in the low voltage electrical compartment between poles #1 and #2.
18. Replace the RDU cover and the fan speed control knob.

Installation is now complete. Proceed to the RDU operation section then to the start-up section of the Herrtronic Installation, Operations and Service Manual OM-93.

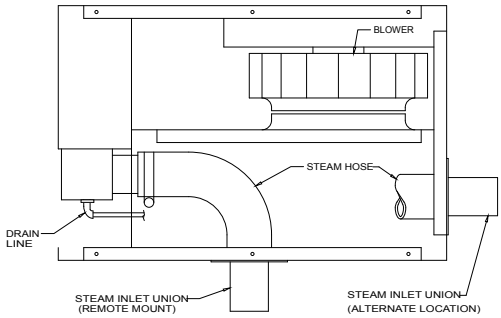


Figure 8 - Steam Connections (Side View)

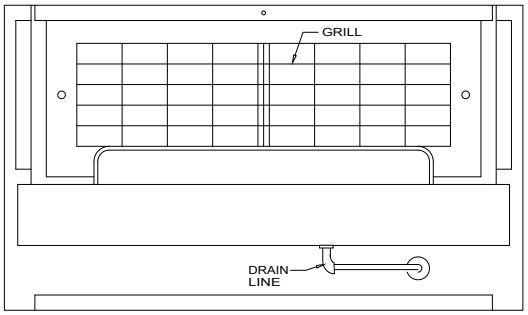


Figure 9 - Drain Line (Front View)

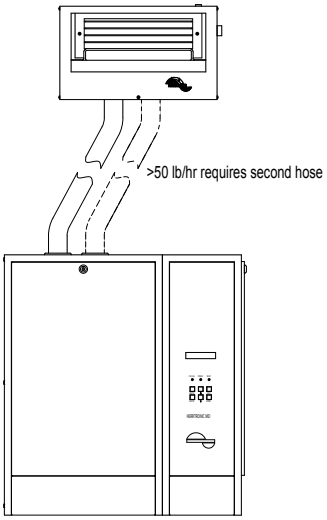


Figure 10 - MDS Remote Mount

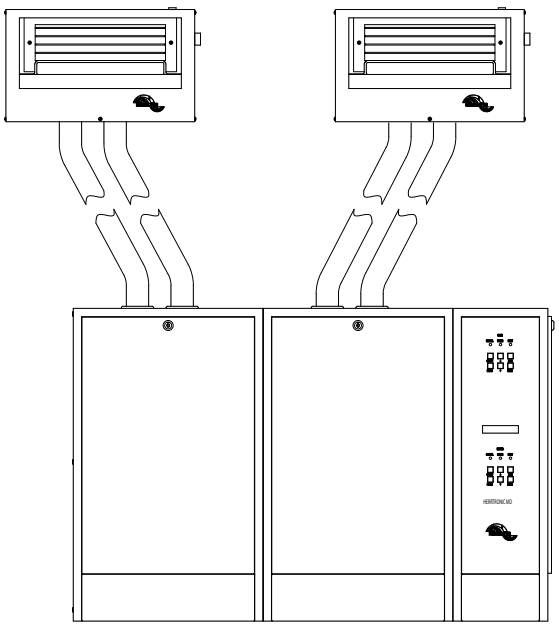


Figure 11 - MDD Remote Mount

VI. RDU OPERATION

Upon starting the Herrtronic unit, the RDU fan will be energized. If airflow is not sensed within ten seconds, the Herrtronic unit will shutdown and a fault will be registered. Depress '"Fault" button to confirm fault condition and clear fault by pressing "Enter" and then "Back" button to return to Menu 1.

Once operating, the fan speed can be adjusted continuously from 1—5 (slow—fast) by turning the fan speed control knob. Refer to the chart below for the optimum fan speed setting for your application.

When the Herrtronic unit is turned "off", either by switch or controller, the RDU fan will continue to operate for 15 minutes to prevent the formation of condensate inside the cabinet. The steam plume direction can be controlled both horizontally and vertically by adjusting the louvers on the air discharge grille.Louvers adjusted as shown in Figure 12 produce the most consistent and shortest evaporation distance.

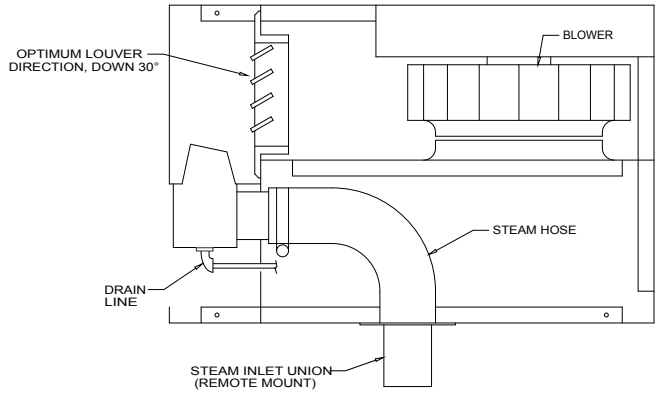


Figure 12 - Louver Details

STEAM PLUME (@75° F, 55% R.H.)															
Output lbs./Hr	**Throw (in.) Blower Speed (CFM)**					**Breadth (in.) Blower Speed (CFM)**					**Rise (in.) Blower Speed (CFM)**				
	1 (210)	**2 (240)**	**3 (280)**	**4 (320)**	**5 (365)**	**1 (210)**	**2 (240)**	**3 (280)**	**4 (320)**	**5 (365)**	**1 (210)**	**2 (240)**	**3 (280)**	**4 (320)**	**5 (365)**
10	20	15				15	15								
20	50	35	30	35	35	20	20	18	18	18					
30	90	80	75	70	60	28	26	24	24	24	10				
40	98	92	90	94	100	36	36	36	32	26	18	12	6		
50	112	112	116	120	120	40	36	36	36	30	36	22	12	6	
60		120	126	130	134		36	34	28	28		58	30	14	6
70			126	132	138			42	40	36			36	20	12
80			130	138	156			48	42	40			52	24	16
90			136	144	156			58	52	46			72	36	20
100			126	138	156			60	60	48			120	50	25

Figure 13 - Steam Plume Characteristics

! WARNING!
To avoid potential contact with steam, be certain to shut off the Herrtronic unit BEFORE adjusting the louvers.

VII. TROUBLESHOOTING

Problem/Symptom	Reason / Correction
Steam Condensing on RDU sheetmetal or other objects.	1. Adjust louvers per figure 12 2. Fan not running. Check pressure switch for fail closed condition. Herrtronic unit should not operate if fan is not running. 3. Too little airflow. Increase fan speed. 4. Room is very cold, very humid, or objects are cold. Decrease humidity setpoint at Herrtronic unit or humidity controller.
Fan not energizing	1. Check that the fan rotates freely. 2. Check fuses in RDU. 3. Check wiring to fan. 4. Check voltage to fan - should be 220 VAC +/- 10%. 5. Replace fan and capacitor.
Fan speed adjustment not working.	1. Replace rheostat.
Water spitting out of manifold	1. Check condensate drain hose. If it is clogged, clean. 2. Make sure condensate drain hose is sloped properly and there are no low spots or kinks.
Fan does not continue to operate for 15 minutes after Herrtronic unit shuts down.	1. Check wiring to relay/timer. 2. Check that the 24 VAC is present between terminal #2 and #3 on relay timer. If so, replace timer.
Air pressure switch not closing.	1. Fan speed setting too low. Increase fan speed. 2. Check tubing on switch for clogging or out of position. 3. Faulty air pressure switch. Replace.
Blown fuses in RDU	1. Check fan for short circuit. 2. Check RDU wiring for short circuit.

1847C	Quick Connects	EST-1404	Rheostat
120096-006	Hole Plug	EST-1405	Relay Timer
165475-001	Dierential Pressure Switch Kit	EST-1407	Blower Speed Control Knob
165538-001	Fuse, 8/10 A	EST-1408	Capacitor
265544-001	Fuseholder	EST-1409	Bushing
265561-001	Transformer (RDU-D-1T & 2T) for 480/600	EST-1415	1/4” Tubing
265561-002	Transformer (RDU-D-1T & 2T) for 380	EST-1416	Fuseholder
DH-052	Foam Tape	EST-1417	Fuse, 1 A
EST-230	Steam Hose	EST-1447-1 EST-1447-2	Manifold Assembly (Specify Unit Model Number)
EST-353	Bushing		
EST-531	5-Pole Terminal Rail	EST-1458	Steam Inlet Union
268233-001	Distribution Grille	EST-1538	Rubber Grommet
EST-1402	Blower	EST-1563	Stainless Steel Hose Clamp
EST-1403	Blower Inlet Ring	GT-20-20	Elbow

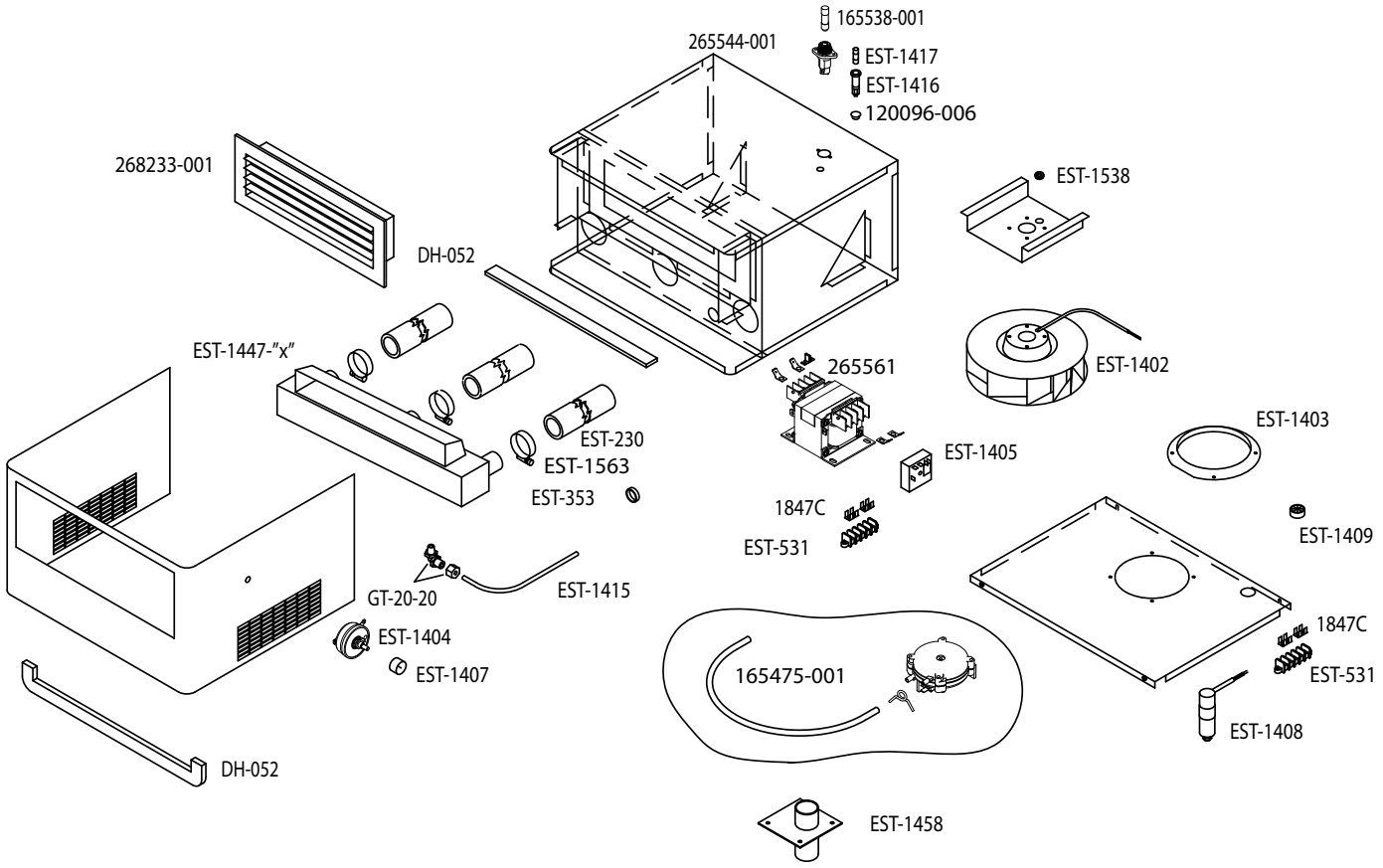


Figure 14 - Exploded View

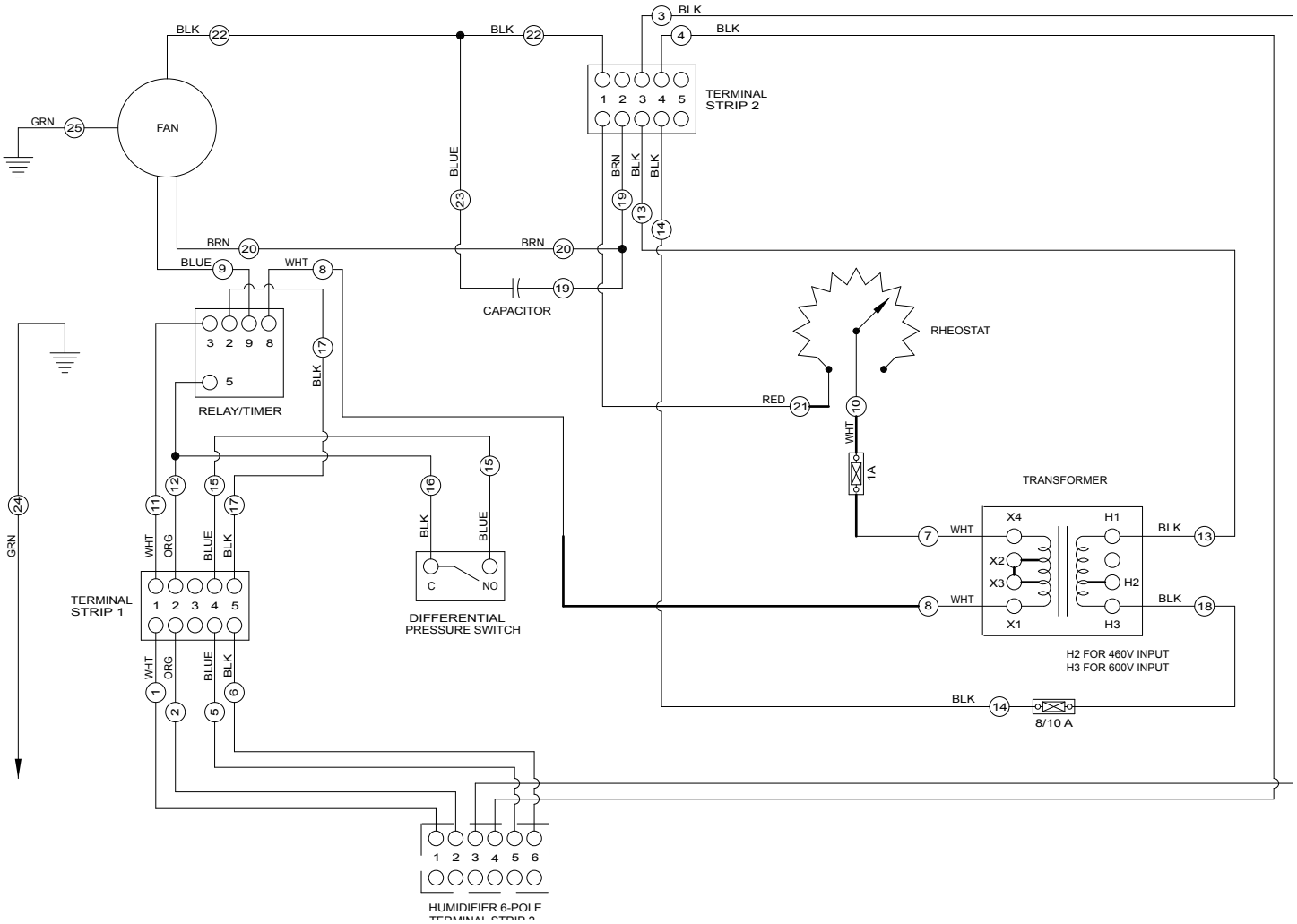


Figure 15 - RDU-D with 460/600V Transformer

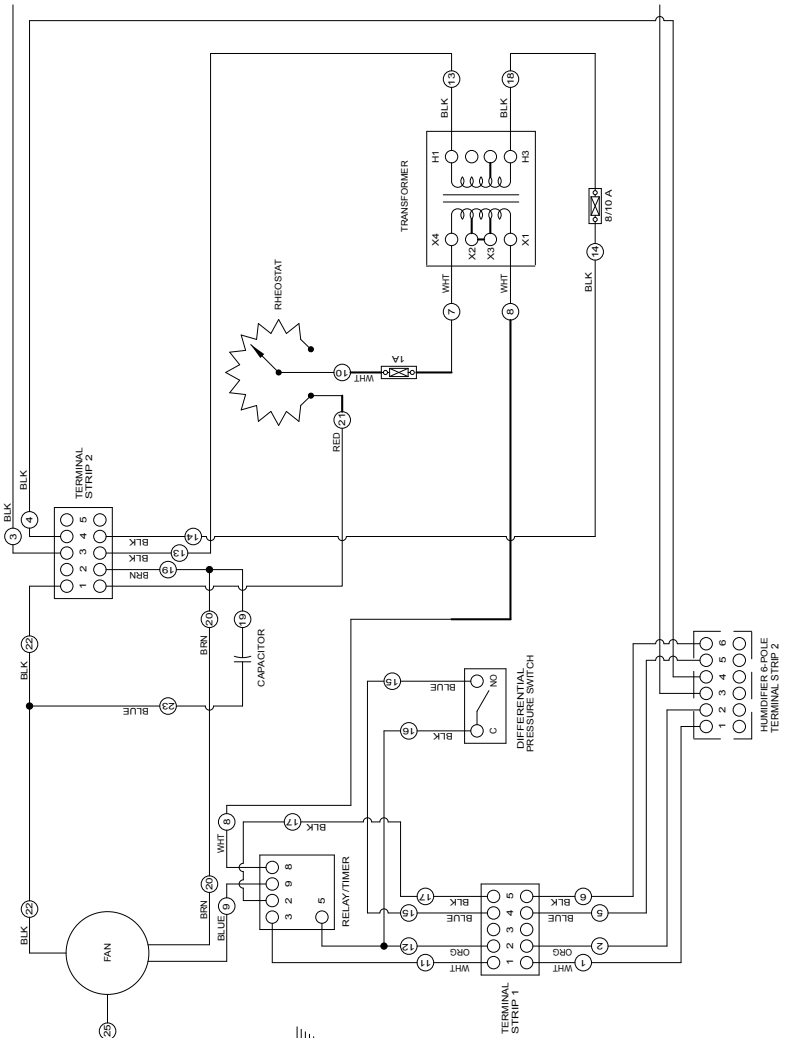


Figure 16 - RDU-D with 380V Transformer

Figure 16 - RDU-D with 380V Transformer

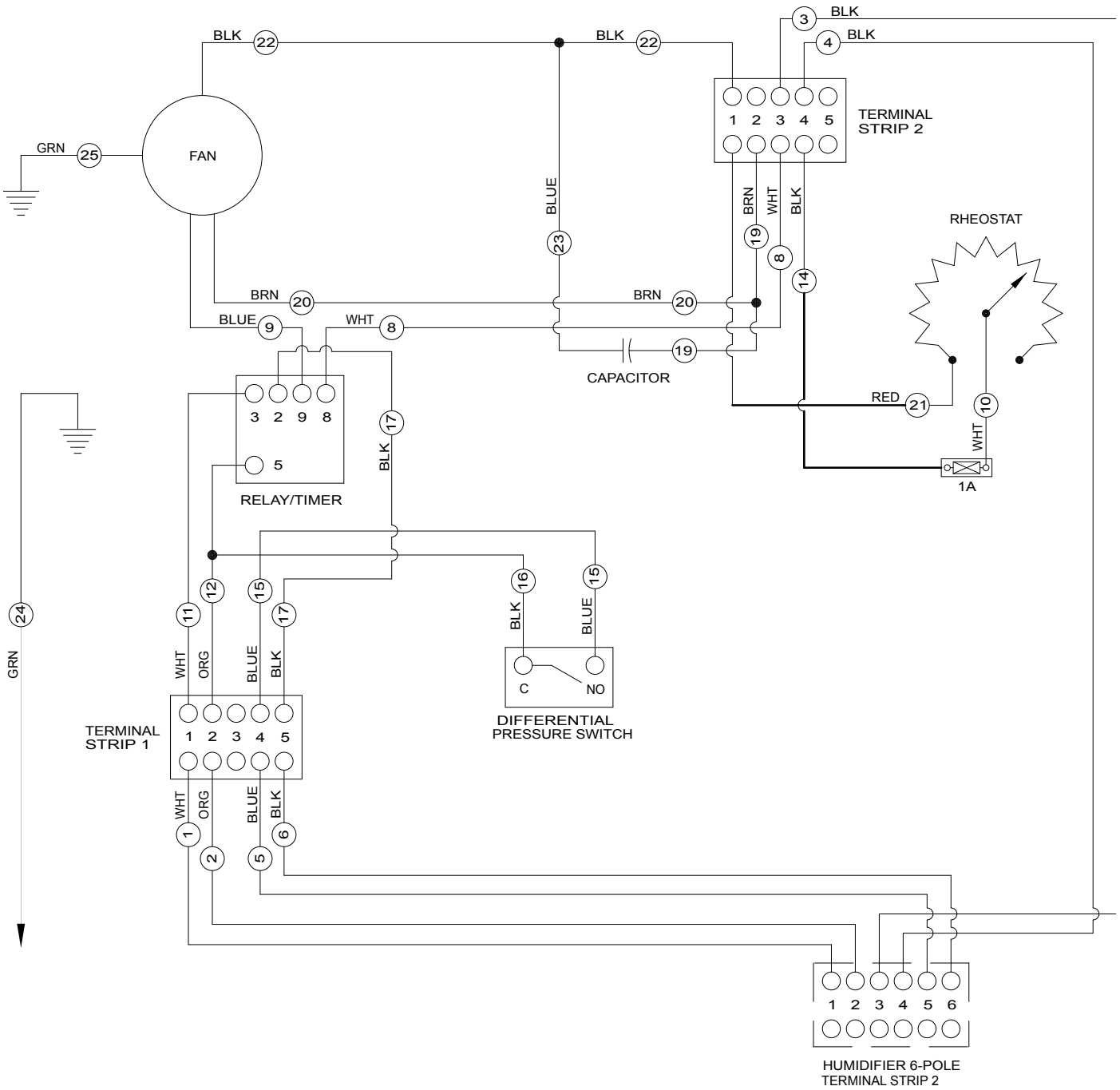


Figure 17 - RDU-D w/o Transformer

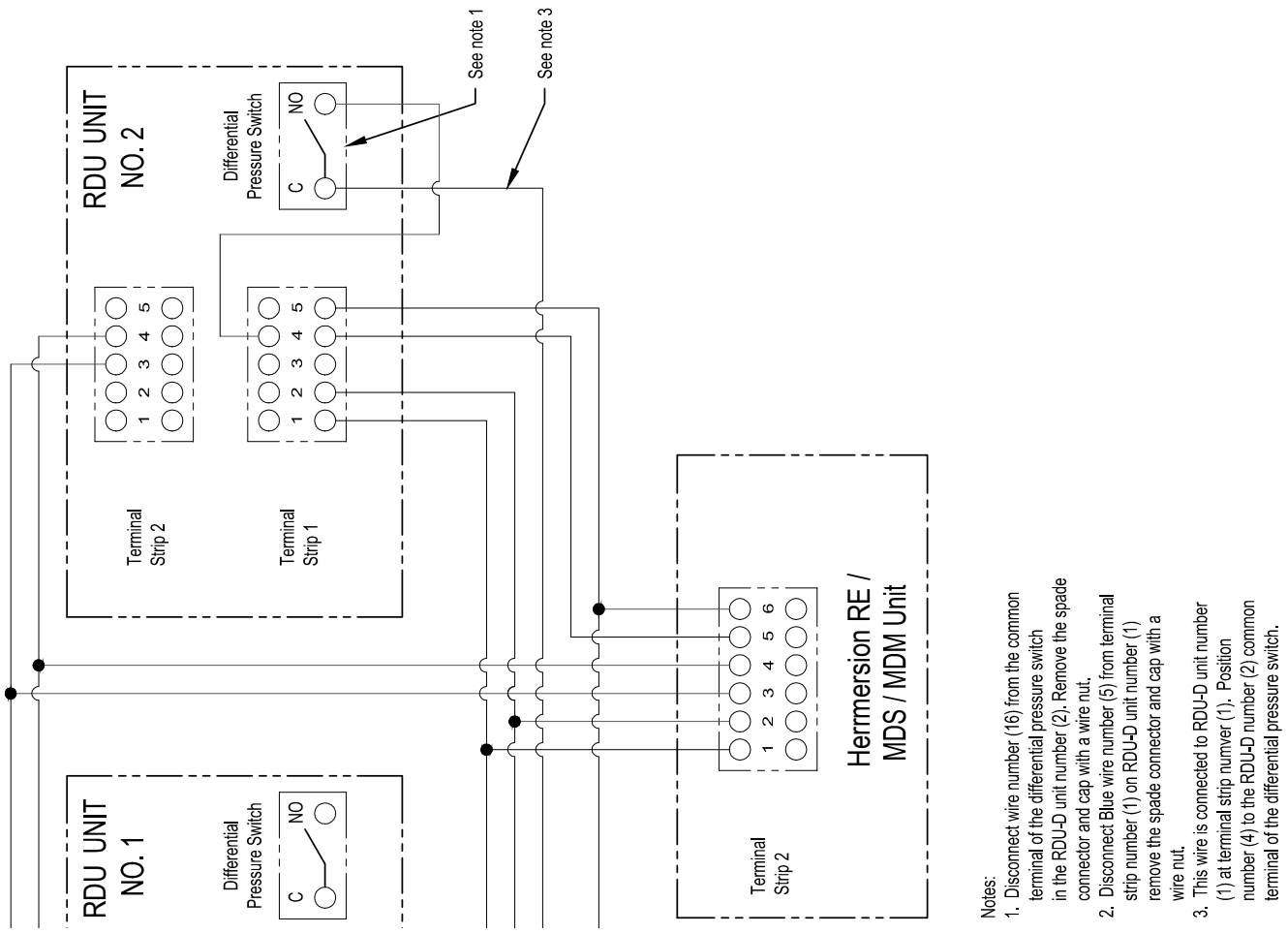


Figure 18 - MDS/MDM Control to (2) RDU-D Units

Notes:

1. Disconnect wire number (16) from the common terminal of the differential pressure switch in the RDU-D unit number (2). Remove the spade connector and cap with a wire nut.
2. Disconnect Blue wire number (5) from terminal strip number (1) on RDU-D unit number (1) remove the spade connector and cap with a wire nut.
3. This wire is connected to RDU-D unit number (1) at terminal strip number (1). Position number (4) to the RDU-D number (2) common terminal of the differential pressure switch.



HERRMIDIFIER®

101 McNeill Rd. | Sanford, NC 27330

P: 800.884.0002 | F: 800.458.2379 | www.herrmidifier-hvac.com | cs@herrmidifier-hvac.com

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