

ENERGY RECYCLING DEHUMIDIFIERS

Designed and Engineered for Medium and High Temperature Industrial and Commercial Applications

DRY-O-TRON® Quality

	Section
<p>DRY-O-TRON® is the original energy recycling dehumidifier. Thousands of units have been installed throughout the world, and DRY-O-TRON® quality has become synonymous with reliability and energy savings.</p> <p>Today's DRY-O-TRON® represents years of intensive research and development by a team of experts. Dectron has one of the best large-scale dehumidifier testing and environmental simulation laboratories in the industry.</p> <p>There is a specific energy efficient DRY-O-TRON® for your humidity control requirements.</p> <ul style="list-style-type: none">△ DS, DB Series (indoor) units for residential applications to Olympic pool facilities.△ RS, RB Series (rooftop) units for medium sized pools to Olympic pool facilities.△ DQ Series (indoor) vertical dehumidifiers for locker rooms, indoor pools, whirlpools, storage facilities, health clubs, and retrofits.△ DA3, DA4, DA5 and DA6 Series (indoor) units for industrial and commercial applications.△ DK, DM Series (indoor) units for make-up air applications.△ RK, RM, CD Series packaged (outdoor) units for make-up air applications.△ DA2 Series (indoor) units for ice rink applications.△ MAM Series (split system) units for dehumidification and air conditioning applications.	
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Humidity Control Solutions

The DRY-O-TRON® energy recycling dehumidifier is a precision engineered product, finely tuned for optimum performance and energy savings.

The DRY-O-TRON® is tested at our factory by skilled personnel. The installation of this state-of-the-art equipment must be done by experienced heating, ventilation and air conditioning (HVAC) trained personnel.

The DA3 Series removes moisture from the air, thereby reducing the relative humidity level and lowering the room air dew point temperature. Proper building design is also important to help control problems associated with high relative humidity and condensation.

The DA3 unit has been designed for medium and high temperature industrial and commercial applications (64 to 100 °F).

The DA3 Series:

- △ Helps eliminate condensation.
- △ Improves product/process quality.
- △ Helps reduce building repair and production maintenance costs.
- △ Provides a comfortably dry working environment.
- △ Contributes to space heating in cold weather.
- △ Contributes to space cooling.

The DA3 Series Features:

- △ Standard microprocessor control.
- △ Remote operator panel.
- △ Engineered to be virtually maintenance free.
- △ Simple to operate and energy efficient .
- △ Easy to install.
- △ Complete with standard air conditioning.

How the DRY-O-TRON® Works

In the DRY-O-TRON®, warm humid air passes through the dehumidifying coil and is cooled below its dew point, thereby condensing moisture. The heat captured by this process is combined with the heat generated from the compressor power consumption. This recovered heat is then available for recycling back to the supply airstream, contributing to space heating.

The DA3 unit is also capable of rejecting this heat to an air-cooled (standard) or water-cooled (optional) condenser, resulting in space cooling.

When installed according to Dectron's instructions, the DRY-O-TRON® will give years of trouble-free operation.

DRY-O-TRON® DA3 Series features standard microprocessor control. For the owner this means precise automatic control, high reliability and ease-of-use. For the installer and service person this means simpler installation and start-up and built-in diagnostics in the unlikely event that service is required.

Customize Your DRY-O-TRON®

Dectron offers the widest range of standard products in our industry. No two projects are alike however, which is why every unit that leaves our factory is tailor-made for a specific job.

In addition Dectron offers the services of our skilled engineering, manufacturing and technical staff dedicated to custom design projects.

No matter what the requirements Dectron has the system solution... wherever humidity control is critical.

Contact your local Dectron representative if you cannot locate the information you require in the catalog.

Model Selection

Sources of Humidity

Indoor air quality is affected by several key factors including relative humidity. These factors vary in importance depending on the activity for which a building is designed. Relative humidity is a critical air quality factor.

High Indoor (RH) Relative Humidity sources of moisture:

- △ Increased (cfm) quantities of humid outdoor air brought in to improve air quality.
- △ Openings, infiltration and permeation allowing outdoor moisture in.
- △ Moisture produced by occupants.
- △ Moisture generated by products or processes.

Moisture migrates from areas of high concentration to areas of low concentration. In the summer, when the outdoor air is warm and humid, moisture will find a path to the interior of a structure. This could be from openings in the building such as doors, infiltration through cracks and poorly sealed joints, or permeation in the case of low quality or non-existent vapor barrier.

In many instances, the primary source of humidity is from outdoor air purposefully brought into the structure to meet air quality standards, or to replace exhausted air which may contain high levels of contaminants.

Occupants can contribute to the moisture load in a building depending on the number of people and their activity. A worker involved in heavy lifting can generate seven times the moisture of a co-worker seated at rest. In agricultural structures, animals also produce a moisture load.

Material used in a process such as wet wood or certain types of fruits, can give off moisture that must be controlled. This process itself may also generate a moisture load for example: open tanks of water or cooking vessels.

The moisture inside the building will condense on any surface which has a temperature lower than the dew point temperature of the room air. This can lead to quality and productivity problems or damage to the building and

plant equipment. Rust and corrosion can affect metal surfaces, electrical controls and contacts, all resulting in increased costs and even potentially hazardous conditions.

The DRY-O-TRON® unit must be sized according to the moisture load from all sources of humidity, as determined using the worksheet shown on the following page. Refer to the Model Specifications (Page 1.14 - 1.15) for detailed moisture removal performance specifications under a range of operating conditions.

If a sizeable amount of outdoor air is to be admitted for ventilation purposes, a make-up air dehumidification system may also be required in conjunction with DA3 Series units. Refer to the DRY-O-TRON® 100% make-up air dehumidifier products DK, RK, DM, RM, CD Series.

DA3 Series units range from 1000 - 5700 cfm and up to 60 lb/h moisture removal. Units with higher moisture removal and higher or lower air flow are available from Dectron. Contact your local Dectron representative for unit selection assistance.

Moisture Load Worksheet for Industrial Applications

Project Information	
Project Name	Tag
Project Address	
Electrical Power	VoltsPhaseHz
Design Information	Symbol Load Calculation
Room Volume cu ft	V
# of Air Changes (see Table A on reverse)..... /h	N
Outdoor Design Dry bulb..... °F	OA _{DB}
Outdoor Design Wet bulb..... °F	OA _{WB}
Outdoor Design Dewpoint (from psychrometric chart)..... °F	OA _{DP}
Outdoor Moisture Content (See Table B - Page 5) gr/cu ft	GR _{OA}
Indoor Design Dry bulb °F	AMB _{DB}
Indoor Design Wet bulb..... °F	AMB _{WB}
Indoor Design Dewpoint (from psychrometric chart)..... °F	AMB _{DP}
Indoor Moisture Content (See Table B - Page 5) gr/cu ft	GR _{AMB}
Make-Up Air or Exhaust Air (whichever is larger)..... cfm	MUA
Unit Entering Air Temperature ¹°F	
Unit Entering Relative Humidity ¹%	
Total Moisture Load =	
Air Cooled Air Conditioning Information	
Location of Condenser (above, same level, or below DRY-O-TRON®).....	
Total Hot Gas Line Length.....ft	Total Liquid Line Length.....ft
Design Ambient Temperature.....°F	Annual Cooling Hours
Electrical PowerVolts.....Phase 60 Hz	Sensible Cooling Load..... Btu/h
Air Cooled Fluid Cooler: Glycol Type	Concentration: % by weight

1. If make-up air is brought at return side of the unit, provide the mixed air temperature between the outdoor design and indoor design conditions.

Table A - Average Air Changes¹

Room Volume cu ft	Air Changes Per Hour	Room Volume cu ft	Air Changes Per Hour
200	1.83	8,000	0.23
250	1.58	10,000	0.20
300	1.44	15,000	0.16
400	1.23	20,000	0.15
500	1.08	25,000	0.13
600	0.96	30,000	0.11
800	0.83	40,000	0.10
1,000	0.73	50,000	0.08
1,500	0.58	75,000	0.07
2,000	0.50	100,000	0.06
3,000	0.40	150,000	0.05
4,000	0.34	200,000	0.05
5,000	0.30	300,000	0.04
6,000	0.27	500,000	0.04

1. Due to door opening and infiltration

Table B - Grains of Moisture Per Cubic Foot¹






°F	Grains	°F	Grains	°F	Grains	°F	Grains	°F	Grains	°F	Grains
-10	.29	40	2.86	58	5.41	76	9.75	95	17.28	114	29.34
-5	.35	41	2.97	59	5.60	77	10.06	96	17.80	115	30.13
0	.48	42	3.08	60	5.80	78	10.40	97	18.31	120	34.38
5	.61	43	3.20	61	6.00	79	10.80	98	18.85	125	39.13
10	.78	44	3.32	62	6.20	80	11.04	99	19.39	130	44.41
15	.99	45	3.44	63	6.41	81	11.40	100	19.95	135	50.30
20	1.24	46	3.56	64	6.62	82	11.75	101	20.52	140	56.81
25	1.56	47	3.69	65	6.85	83	12.11	102	21.11	145	64.04
30	1.95	48	3.83	66	7.07	84	12.49	103	21.71	150	72.00
31	2.04	49	3.97	67	7.31	85	12.87	104	22.32	155	80.77
32	2.13	50	4.11	68	7.57	86	13.27	105	22.95	160	90.43
33	2.21	51	4.26	69	7.80	87	13.67	106	23.60	165	101.00
34	2.29	52	4.41	70	8.10	88	14.08	107	24.26	170	112.60
35	2.38	53	4.56	71	8.32	89	14.51	108	24.93	175	125.40
36	2.47	54	4.72	72	8.59	90	14.94	109	25.62	180	139.20
37	2.56	55	4.89	73	8.87	91	15.39	110	26.34	185	154.30
38	2.66	56	5.06	74	9.15	92	15.84	111	27.07	190	170.70
39	2.76	57	5.23	75	9.45	93	16.31	112	27.81	195	188.60
						94	16.79	113	28.57		

1. Data for saturated air - Use dewpoint temperature (OA_{DP} and AMB_{DP})

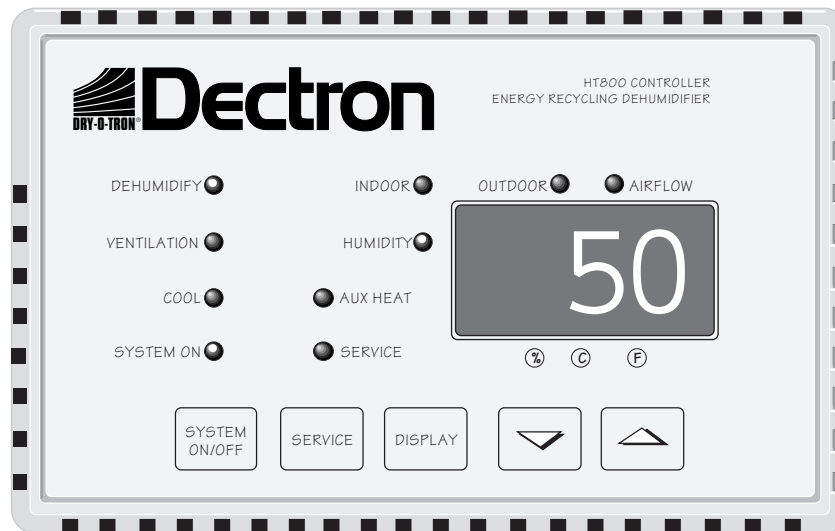
Table C - Rate of Moisture Generation of Occupants

Degree of Activity	lb/h • person	Degree of Activity	lb/h • person
Seated at Rest	0.140	Walking 3 MPH, Light Machine Work	0.695
Seated, Very Light Work, Writing	0.190	Bowling	0.615
Seated, Eating	0.325	Moderate Dancing	0.875
Seated, Light Work, Typing	0.255	Heavy Work, Heavy Machine Work, Lifting	1.035
Standing, Light Work or Walking Slowly	0.325	Heavy Work, Athletics	1.165
Light Bench Work	0.435		

HT800 Controller

Keys	Lights	Description
 <p>SYSTEM ON/OFF</p>	SYSTEM ON	Indicates normal operation when on
 <p>SERVICE</p>	SERVICE	Flashes to indicate a problem is detected
 <p>DISPLAY</p>	INDOOR HUMIDITY OUTDOOR AIRFLOW	Indoor air temperature Indoor air relative humidity Outdoor air temperature Filter efficiency (flashes when filter is dirty)
	INDOOR HUMIDITY OUTDOOR	Indoor air temperature set point (64 to 100 °F) Indoor humidity set point (40 to 70%) Ventilation set point (outdoor air temperature 55 to 90 °F) for optional economizer cooling. When outside air temperature is below this setpoint unit will activate ventilation on a call for cooling. When outside air temperature is above this setpoint unit will block ventilation and use built-in air conditioning on a call for cooling.
	INDOOR HUMIDITY OUTDOOR	Indoor temperature set point (64 to 100 °F) Indoor humidity set point (40 to 70%) Ventilation set point (outdoor air temperature 55 to 90 °F) for optional economizer cooling. When outside air temperature is below this setpoint unit will activate ventilation on a call for cooling. When outside air temperature is above this setpoint unit will block ventilation and use built-in air conditioning on a call for cooling.
Status Indicators:	DEHUMIDIFY VENTILATION COOL SYSTEM ON AUX HEAT	Dehumidification on Ventilation on (using outdoor air) Cooling on Normal operation Auxiliary space heater on

HT800 Controller



SYSTEM ON	Indicates that the DRY-O-TRON® energy recycling dehumidifier is on and the blower is running.
DEHUMIDIFY	Indicates that the DRY-O-TRON® is efficiently dehumidifying the space and recycling the energy where required. The DRY-O-TRON® can heat or air-condition the space (DEHUMIDIFY, and COOL indicators can be on at the same time).
VENTILATION	The DRY-O-TRON® can be equipped with a dry contact or power supply to control outdoor air ventilation for space cooling when required. Option packages are available which combine ventilation and air conditioning.
COOL	Air cooled air conditioning is standard for all DRY-O-TRON® DA3 Series units. A must for complete comfort control in the summertime. Intelligent air control options allow the customer to interlock ventilation with air conditioning to provide “free cooling” when outdoor conditions permit. (DEHUMIDIFY, and COOL indicators can be on at the same time).
AUX HEAT	During winter conditions, high building heat losses may necessitate the use of an auxiliary space heater, controlled by the DRY-O-TRON®. Optional heaters are available from Dectron.
SERVICE	Flashes to indicate that the DRY-O-TRON® unit requires service. Using an alarm code which appears on the LED display the owner or factory trained serviceman can diagnose everything from a clogged air filter to a failed component. Audible alarms are also available with the DRY-O-TRON®. The HT800 electronic thermostat can be easily detached from the room location and plugged directly onto the DRY-O-TRON® unit to simplify initial start-up as well as service diagnosis. In the unlikely event that service is required, built-in diagnostics help locate failed components quickly and reliably.
LED DISPLAY	Provides accurate and complete information about DRY-O-TRON® operation, and allows the owner to adjust setpoints with the touch of a button. Displayed functions include relative humidity level and setpoint, indoor air temperature and setpoint, outdoor air temperature and ventilation adjustment (with optional outdoor air sensor), optional airflow indicator (indicates when filter replacement is needed). Temperature displays can be in Celsius or Fahrenheit.



1

Technical Specifications

Series DA3 (indoor) Model 007

Voltage¹ 60 Hz	208/230 V 1 ph	208/230 V 3 ph	460 V 3 ph	575 V 3 ph
Minimum Ampacity	24 A	13 A	7 A	-
Maximum Main Fuse	35 A	20 A	10 A	-
Total Power Consumption ²	2.4 kW	2.4 kW	2.4 kW	-
Compressor FLA	15 A	8.7 A	4.2 A	-
Compressor LRA	76 A	50 A	23 A	-
Blower	0.5 HP	0.5 HP	0.5 HP	-
Blower FLA	4.4 A	2.2 A	1.1 A	-
Control Voltage ³	24 V	24 V	24 V	-
Microprocessor Control	Standard			
Air Volume	1000-1200 cfm			
External Static Pressure	0.5 in WC			
Air Discharge Location	Horizontal			
Filter Quantity	1, 1			
Filter Size	16 in x 16 in x 1 in, 16 in x 14 in x 1 in			
Condensate Drain Connection	3/4 in I.D. Rubber			
Condensate Drain P-Trap	Standard			
Operating Range ⁵	64 - 100 °F			
Factory Refrigerant Charge	4 lb R-22 (Not including outdoor condenser charge and lines)			
Net Weight	440 lb			
Shipping Weight	480 lb			
Air Cooled Air Conditioning				
Maximum Heat Rejection ²	34,000 Btu/h			
Hot Gas Line	5/8 in Copper Sweat			
Liquid Line	1/2 in Copper Sweat			
Refrigerant Receiver Size	For 25, 50, 75, 100 ft (Condenser one-way line length)			
Air Cooled Condenser ⁴	Air On Condenser 100 °F		95 °F	90 °F
	Residential ⁷	CCA-003	CCA-003	CCA-003
	Commercial	CDS-004	CDS-004	CDS-002
Options				
Water Cooled Air Conditioning⁶				
Maximum Heat Rejection ²	34,000 Btu/h			
Maximum Water Flow Rate	8.5 usgpm			
Maximum Water Pressure Drop	10 psi			
Water Connections	1 in Union Sweat			

1. For other voltages and 50 Hz applications refer to Dectron.
2. Based on 82°F 60% RH entering air, standard blower.
3. Use minimum 20 gauge wire.
4. Based on condenser location at the same level or above DRY-O-TRON®.
5. Outdoor air cooled condenser is mandatory above 80°F entering air temperature.
6. Based on 85 °F entering water temperature.
7. Residential air cooled condenser available in single phase only.

Technical Specifications

Series DA3 (indoor)
Model 016

Voltage ¹ 60 Hz	208/230 V 1 ph	208/230 V 3 ph	460 V 3 ph	575 V 3 ph
Minimum Ampacity	41 A	26 A	13 A	10 A
Maximum Main Fuse	60 A	40 A	20 A	15 A
Total Power Consumption ²	5.2 kW	5.2 kW	5.2 kW	5.2 kW
Compressor FLA	26.5 A	16.8 A	8.2 A	6.4 A
Compressor LRA	114 A	84 A	42 A	33 A
Blower	1.5 HP	1.5 HP	1.5 HP	1.5 HP
Blower FLA	7.2 A	4.6 A	2.3 A	1.9 A
Control Voltage ³	24 V	24 V	24 V	24 V
Microprocessor Control	Standard			
Air Volume	2600-3000 cfm			
External Static Pressure	0.5 in WC			
Air Discharge Location	Horizontal			
Filter Quantity	2			
Filter Size	25 in x 16 in x 2 in			
Condensate Drain Connection	3/4 in I.D. Rubber			
Condensate Drain P-Trap	Standard			
Operating Range ⁵	64 - 100 °F			
Factory Refrigerant Charge	6 lb R-22 (Not including outdoor condenser charge and lines)			
Net Weight	700 lb			
Shipping Weight	790 lb			
Air Cooled Air Conditioning				
Maximum Heat Rejection ²	68,000 Btu/h			
Hot Gas Line	7/8 in Copper Sweat			
Liquid Line	5/8 in Copper Sweat			
Refrigerant Receiver Size	For 25, 50, 75, 100 ft (Condenser one-way line length)			
Air Cooled Condenser ⁴				
	Air On Condenser 100 °F		95 °F	90 °F
	Residential ⁷	-	CCA-005	CCA-005
	Commercial	CCB-009	CCA-007	-
	Commercial	CDS-008	CDS-008	CDS-005
Options				
Water Cooled Air Conditioning⁶				
Maximum Heat Rejection ²	68,000 Btu/h			
Maximum Water Flow Rate	20 usgpm			
Maximum Water Pressure Drop	10 psi			
Water Connections	1 1/4 in Union Sweat			

- For other voltages and 50 Hz applications refer to Dectron.
- Based on 82 °F 60% RH entering air, standard blower.
- Use minimum 20 gauge wire.
- Based on condenser location at the same level or above DRY-O-TRON®.
- Outdoor air cooled condenser is mandatory above 80°F entering air temperature.
- Based on 85 °F entering water temperature.
- Residential air cooled condenser available in single phase only.

1

Technical Specifications

Series DA3 (indoor) Model 024

Voltage¹ 60 Hz	208/230 V 1 ph	208/230 V 3 ph	460 V 3 ph	575 V 3 ph
Minimum Ampacity	56 A	33 A	16 A	13 A
Maximum Main Fuse	80 A	50 A	20 A	20 A
Total Power Consumption ²	6.9 kW	6.9 kW	6.9 kW	6.9 kW
Compressor FLA	34.3 A	21.4 A	9.6 A	7.9
Compressor LRA	142 A	115 A	65 A	45 A
Blower	2 HP	2 HP	2 HP	2 HP
Blower FLA	12.8 A	6.2 A	3.1 A	2.5 A
Control Voltage ³	24 V	24 V	24 V	24 V
Microprocessor Control	Standard			
Air Volume	3600-4000 cfm			
External Static Pressure	0.5 in WC			
Air Discharge Location	Horizontal			
Filter Quantity	4			
Filter Size	20 in x 16 in x 2 in			
Condensate Drain Connection	3/4 in I.D. Rubber			
Condensate Drain P-Trap	Standard			
Operating Range ⁵	64 - 100 °F			
Factory Refrigerant Charge	8 lb R-22 (Not including outdoor condenser charge and lines)			
Net Weight	860 lb			
Shipping Weight	1000 lb			
Air Cooled Air Conditioning				
Maximum Heat Rejection ²	88,500 Btu/h			
Hot Gas Line	7/8 in Copper Sweat			
Liquid Line	5/8 in Copper Sweat			
Refrigerant Receiver Size	For 25, 50, 75, 100 ft (Condenser one-way line length)			
Air Cooled Condenser ⁴				
	Air On Condenser 100 °F		95 °F	90 °F
	Commercial	CCB-009	CCB-009	CCA-007
	Commercial	CDS-010	CDS-008	CDS-008
Options				
Water Cooled Air Conditioning⁶				
Maximum Heat Rejection ²	88,500 Btu/h			
Maximum Water Flow Rate	20 usgpm			
Maximum Water Pressure Drop	10 psi			
Water Connections	1 1/4 in Union Sweat			

1. For other voltages and 50 Hz applications refer to Dectron.
2. Based on 82 °F 60% RH entering air, standard blower.
3. Use minimum 20 gauge wire.
4. Based on condenser location at the same level or above DRY-O-TRON®.
5. Outdoor air cooled condenser is mandatory above 80°F entering air temperature.
6. Based on 85 °F entering water temperature.

Technical Specifications

Series DA3 (indoor)
Model 035

Voltage¹ 60 Hz	208/230 V 1 ph	208/230 V 3 ph	460 V 3 ph	575 V 3 ph
Minimum Ampacity	-	47 A	25 A	20 A
Maximum Main Fuse	-	70 A	40 A	30 A
Total Power Consumption ²	-	10.4 kW	10.4 kW	10.4 kW
Compressor FLA	-	30.1 A	15.8 A	12.4
Compressor LRA	-	183 A	91.1 A	73.3 A
Blower	-	3 HP	3 HP	3 HP
Blower FLA	-	9 A	4.5 A	3.7 A
Control Voltage ³	-	24 V	24 V	24 V
Microprocessor Control	Standard			
Air Volume	5400-5700 cfm			
External Static Pressure	0.5 in WC			
Air Discharge Location	Horizontal			
Filter Quantity	4			
Filter Size	25 in x 16 in x 2 in			
Condensate Drain Connection	3/4 in I.D. Rubber			
Condensate Drain P-Trap	Standard			
Operating Range ⁵	64 - 100 °F			
Factory Refrigerant Charge	10 lb R-22 (Not including outdoor condenser charge and lines)			
Net Weight	1050 lb			
Shipping Weight	1200 lb			
Air Cooled Air Conditioning				
Maximum Heat Rejection ²	137,000 Btu/h			
Hot Gas Line	7/8 in Copper Sweat			
Liquid Line	7/8 in Copper Sweat			
Refrigerant Receiver Size	For 25, 50, 75, 100 ft (Condenser one-way line length)			
Air Cooled Condenser ⁴				
	Air On Condenser 100 °F		95 °F	90 °F
	Commercial	CCB-014	CCB-012	CCB-009
	Commercial	CDS-016	CDS-012	CDS-010
Options				
Water Cooled Air Conditioning⁶				
Maximum Heat Rejection ²	137,000 Btu/h			
Maximum Water Flow Rate	20 usgpm			
Maximum Water Pressure Drop	10 psi			
Water Connections	1 1/4 in Union Sweat			

1. For other voltages and 50 Hz applications refer to Dectron.
2. Based on 82 °F 60% RH entering air, standard blower.
3. Use minimum 20 gauge wire.
4. Based on condenser location at the same level or above DRY-O-TRON®.
5. Outdoor air cooled condenser is mandatory above 80°F entering air temperature.
6. Based on 85 °F entering water temperature.

1

Technical Specifications

Series DA3 (indoor) Model 045

Voltage¹ 60 Hz	208/230 V 1 ph	208/230 V 3 ph	460 V 3 ph	575 V 3 ph
Minimum Ampacity	-	62 A	31 A	25 A
Maximum Main Fuse	-	100 A	50 A	40 A
Total Power Consumption ²	-	13.2 kW	13.2 kW	13.2 kW
Compressor FLA	-	42.1 A	21.1 A	16.9
Compressor LRA	-	207 A	104 A	82.8 A
Blower	-	3 HP	3 HP	3 HP
Blower FLA	-	9 A	4.5 A	3.7 A
Control Voltage ³	-	24 V	24 V	24 V
Microprocessor Control	Standard			
Air Volume	5700 cfm			
External Static Pressure	0.5 in WC			
Air Discharge Location	Horizontal			
Filter Quantity	4			
Filter Size	25 in x 16 in x 2 in			
Condensate Drain Connection	3/4 in I.D. Rubber			
Condensate Drain P-Trap	Standard			
Operating Range ⁵	64 - 100 °F			
Factory Refrigerant Charge	12 lb R-22 (Not including outdoor condenser charge and lines)			
Net Weight	1150 lb			
Shipping Weight	1300 lb			
Air Cooled Air Conditioning				
Maximum Heat Rejection ²	178,000 Btu/h			
Hot Gas Line	1 1/8 in Copper Sweat			
Liquid Line	7/8 in Copper Sweat			
Refrigerant Receiver Size	For 25, 50, 75, 100 ft (Condenser one-way line length)			
Air Cooled Condenser ⁴				
	Air On Condenser 100 °F		95 °F	90 °F
	Commercial	CCC-020	CCB-014	CCB-012
	Commercial	CDS-022	CDS-016	CDS-016
Options				
Water Cooled Air Conditioning⁶				
Maximum Heat Rejection ²	178,000 Btu/h			
Maximum Water Flow Rate	40 usgpm			
Maximum Water Pressure Drop	10 psi			
Water Connections	1 1/2 in Union Sweat			

1. For other voltages and 50 Hz applications refer to Dectron.
2. Based on 82 °F 60% RH entering air, standard blower.
3. Use minimum 20 gauge wire.
4. Based on condenser location at the same level or above DRY-O-TRON®.
5. Outdoor air cooled condenser is mandatory above 80°F entering air temperature.
6. Based on 85 °F entering water temperature.

Options and Accessories¹

Series DA3 (indoor)
Model 007 - 016 - 024 - 035 - 045

Options ²	DA3-007	DA3-016	DA3-024	DA3-035	DA3-045
Air-Cooled Air Conditioning ³	Standard	Standard	Standard	Standard	Standard
Water-Cooled Air Conditioning	√	√	√	√	√
Increased External Static Pressure	1 in WC	1 in WC	1 in WC	1 in WC	1 in WC
Top or Bottom Air Discharge	√	√	√	√	√
100 VA, 24 V Power Supply for Ventilation ⁴	√	√	√	√	√
Air Flow Sensor for Filter Maintenance	√	√	√	√	√
Fan Control, ON-OFF, Remote ON-OFF, Firestat Connection	√	√	√	√	√
HyPoxy® Coated Coils for Severe Applications	√	√	√	√	√
Extended Compressor Warranty	√	√	√	√	√
Extended Coils Warranty	√	√	√	√	√
Delayed Start-up Warranty	√	√	√	√	√
Accessories⁵					
Outdoor Air Sensor for Smart Ventilation / Economizer	√	√	√	√	√
Water Pressure Switch ⁶ , Automatic Compressor Shut-Down (Water Cooled A/C)	√	√	√	√	√
Air Vent ⁶ for Water Lines (Water Cooled A/C)	√	√	√	√	√
Condensate Pump with Tank for Installation where Condensate cannot drain	√	√	√	√	√

1. For options and accessories not shown, contact your local Dectron representative.

2. Options are factory installed.

3. Outdoor air-cooled condenser must be purchased separately.

4. Includes outdoor air sensor.

5. Accessories are field installed.

6. Required with water-cooled air conditioning.

1

Performance Data

Series DA3 (indoor) Model 007 - 016 - 024 - 035

Model 007	Moisture Removal Capacity in lb/h			
	Return Air Temperature ¹	Relative Humidity		
	70%	60%	50%	40%
64 °F	6.5	5.5	3.5	-
66 °F	7.0	6.0	4.0	-
68 °F	7.5	6.5	4.5	-
70 °F	8.0	7.0	5.0	-
72 °F	8.5	7.5	5.5	1.0
74 °F	9.0	8.0	6.0	2.2
76 °F	9.5	8.5	6.5	3.2
78 °F	10.0	9.0	7.0	4.0
80 °F	10.5	9.5	7.5	4.5
82 °F	11.0	10.0	8.0	5.0
84 °F	11.5	10.5	8.5	5.5
86 °F	12.0	11.0	9.0	6.0
88 °F	12.5	11.5	9.5	6.5
90 °F	13.0	12.0	10.0	7.0
92 °F	-	12.5	10.5	7.5
94 °F	-	13.0	11.0	8.0
96 °F	-	-	11.5	8.5
98 °F	-	-	12.0	9.0
100 °F	-	-	-	9.5

Model 016	Moisture Removal Capacity in lb/h			
	Return Air Temperature ¹	Relative Humidity		
	70%	60%	50%	40%
64 °F	13.0	11.0	7.0	-
66 °F	14.0	12.0	8.0	-
68 °F	15.0	13.0	9.0	-
70 °F	16.0	14.0	10.0	-
72 °F	17.0	15.0	11.0	2.0
74 °F	18.0	16.0	12.0	4.5
76 °F	19.0	17.0	13.0	6.5
78 °F	20.0	18.0	14.0	8.0
80 °F	21.0	19.0	15.0	9.0
82 °F	22.0	20.0	16.0	10.0
84 °F	23.0	21.0	17.0	11.0
86 °F	24.0	22.0	18.0	12.0
88 °F	25.0	23.0	19.0	13.0
90 °F	26.0	24.0	20.0	14.0
92 °F	-	25.0	21.0	15.0
94 °F	-	26.0	22.0	16.0
96 °F	-	-	23.0	17.0
98 °F	-	-	24.0	18.0
100 °F	-	-	-	19.0

Model 024	Moisture Removal Capacity in lb/h			
	Return Air Temperature ¹	Relative Humidity		
	70%	60%	50%	40%
64 °F	17.6	15.0	9.5	-
66 °F	19.1	15.8	10.9	-
68 °F	20.5	17.8	12.3	-
70 °F	21.9	19.3	13.8	-
72 °F	23.3	20.7	15.2	2.75
74 °F	24.8	22.1	16.6	6.2
76 °F	26.2	23.5	18.1	9.1
78 °F	27.6	25.0	19.5	11.0
80 °F	29.1	26.4	20.9	12.4
82 °F	32.5	27.8	22.3	13.9
84 °F	31.9	29.3	23.8	15.3
86 °F	33.3	30.7	25.2	16.7
88 °F	34.8	32.2	26.6	18.2
90 °F	36.2	33.6	28.1	19.6
92 °F	-	35.0	29.5	21.0
94 °F	-	36.4	30.9	22.4
96 °F	-	-	32.3	23.9
98 °F	-	-	33.8	25.3
100 °F	-	-	-	26.7

Model 035	Moisture Removal Capacity in lb/h			
	Return Air Temperature ¹	Relative Humidity		
	70%	60%	50%	40%
64 °F	26.0	22.0	14.0	-
66 °F	28.0	24.0	16.0	-
68 °F	30.0	26.0	18.0	-
70 °F	32.0	28.0	20.0	-
72 °F	34.0	30.0	22.0	4.0
74 °F	36.0	32.0	24.0	9.0
76 °F	38.0	34.0	26.0	13.0
78 °F	40.0	36.0	28.0	16.0
80 °F	42.0	38.0	30.0	18.0
82 °F	44.0	40.0	32.0	20.0
84 °F	46.0	42.0	34.0	22.0
86 °F	48.0	44.0	36.0	24.0
88 °F	50.0	46.0	38.0	26.0
90 °F	52.0	48.0	40.0	28.0
92 °F	-	50.0	42.0	30.0
94 °F	-	52.0	44.0	32.0
96 °F	-	-	46.0	34.0
98 °F	-	-	48.0	36.0
100 °F	-	-	-	38.0

1. Outdoor air cooled condenser is mandatory above 80 °F entering air temperature

Performance Data

Series DA3 (indoor)
Model 045 - 007 - 016

Model 045	Moisture Removal Capacity in lb/h			
	Return Air Temperature ¹	Relative Humidity		
	70%	60%	50%	40%
64 °F	31.2	26.4	16.8	-
66 °F	33.6	28.8	19.2	-
68 °F	36.0	31.2	21.6	-
70 °F	38.4	33.6	24.0	-
72 °F	40.8	36.0	26.4	4.8
74 °F	43.2	38.4	28.8	10.8
76 °F	45.6	40.8	31.2	15.6
78 °F	48.0	43.2	33.6	19.2
80 °F	50.4	45.6	36.0	21.6
82 °F	52.8	48.0	38.4	24.0
84 °F	55.2	50.4	40.8	26.4
86 °F	57.6	52.8	43.2	28.8
88 °F	60.0	55.2	45.6	31.2
90 °F	62.4	57.6	48.0	33.6
92 °F	-	60.0	50.4	36.0
94 °F	-	62.4	52.8	38.4
96 °F	-	-	55.2	40.8
98 °F	-	-	57.6	43.2
100 °F	-	-	-	45.6

Model 007	DX Coil Sensible Cooling in Btu/h			
	Return Air Temperature ¹	Relative Humidity		
	70%	60%	50%	40%
64 °F	13440	14880	16140	-
66 °F	13530	14940	16230	-
68 °F	13620	15010	16310	-
70 °F	13710	15080	16410	-
72 °F	13810	15150	16505	19340
74 °F	13900	15230	16600	18380
76 °F	14000	15305	16710	18425
78 °F	14100	15380	16810	18480
80 °F	14200	15470	16920	18590
82 °F	14310	15550	17030	18690
84 °F	14220	15630	17150	18850
86 °F	14125	15700	17270	19050
88 °F	14020	15770	17400	19270
90 °F	13910	15830	17670	19540
92 °F	-	15880	17810	19820
94 °F	-	15930	17960	20150
96 °F	-	-	18120	20440
98 °F	-	-	18290	20700
100 °F	-	-	-	20940

Model 016	DX Coil Sensible Cooling in Btu/h			
	Return Air Temperature ¹	Relative Humidity		
	70%	60%	50%	40%
64 °F	27440	30380	32960	-
66 °F	27620	30510	33130	-
68 °F	27810	30650	33310	-
70 °F	28000	30790	33500	-
72 °F	28190	30940	33700	37440
74 °F	28390	31090	33900	37530
76 °F	28590	31250	34110	37620
78 °F	28790	31410	34320	37730
80 °F	29000	31580	34540	37950
82 °F	29210	31750	34770	38150
84 °F	29030	31910	35010	38480
86 °F	28840	32060	35260	38890
88 °F	28630	32200	35520	39350
90 °F	28410	32320	36070	39890
92 °F	-	32430	36360	40460
94 °F	-	32530	36670	41150
96 °F	-	-	37000	41730
98 °F	-	-	37350	42260
100 °F	-	-	-	42760

1. Outdoor air cooled condenser is mandatory above 80 °F entering air temperature

Performance Data

Series DA3 (indoor) Model 024 - 035 - 045

Model 024	DX Coil Sensible Cooling in Btu/h			
	Return Air Temperature ¹	Relative Humidity		
	70%	60%	50%	40%
64 °F	37340	41340	44850	-
66 °F	37580	41510	45080	-
68 °F	37840	41700	45320	-
70 °F	38100	41890	45580	-
72 °F	38360	42100	45850	50940
74 °F	38630	42300	46125	51060
76 °F	38900	42520	46410	51190
78 °F	39170	42740	46700	51340
80 °F	39460	42970	46700	51640
82 °F	39740	43200	47310	51910
84 °F	39500	43420	47640	52360
86 °F	39240	43620	47980	52915
88 °F	38955	43810	48330	53540
90 °F	38655	43980	49080	54280
92 °F	-	44125	49470	55050
94 °F	-	44260	49890	55990
96 °F	-	-	50340	56780
98 °F	-	-	50820	57500
100 °F	-	-	-	58180

Model 035	DX Coil Sensible Cooling in Btu/h			
	Return Air Temperature ¹	Relative Humidity		
	70%	60%	50%	40%
64 °F	53200	58900	63910	-
66 °F	53550	59160	64240	-
68 °F	53920	59430	64585	-
70 °F	54290	59700	64950	-
72 °F	54660	59990	65340	72590
74 °F	55045	60280	65730	72770
76 °F	55430	60590	66140	72940
78 °F	55820	60900	66540	73155
80 °F	56230	61230	66970	73580
82 °F	56635	61550	67415	73970
84 °F	56290	61870	68290	74610
86 °F	55920	62160	68370	75400
88 °F	55510	62430	68870	76300
90 °F	55080	62665	69940	77340
92 °F	-	62880	70500	78450
94 °F	-	63070	71100	79790
96 °F	-	-	71740	80910
98 °F	-	-	72420	81940
100 °F	-	-	-	82910

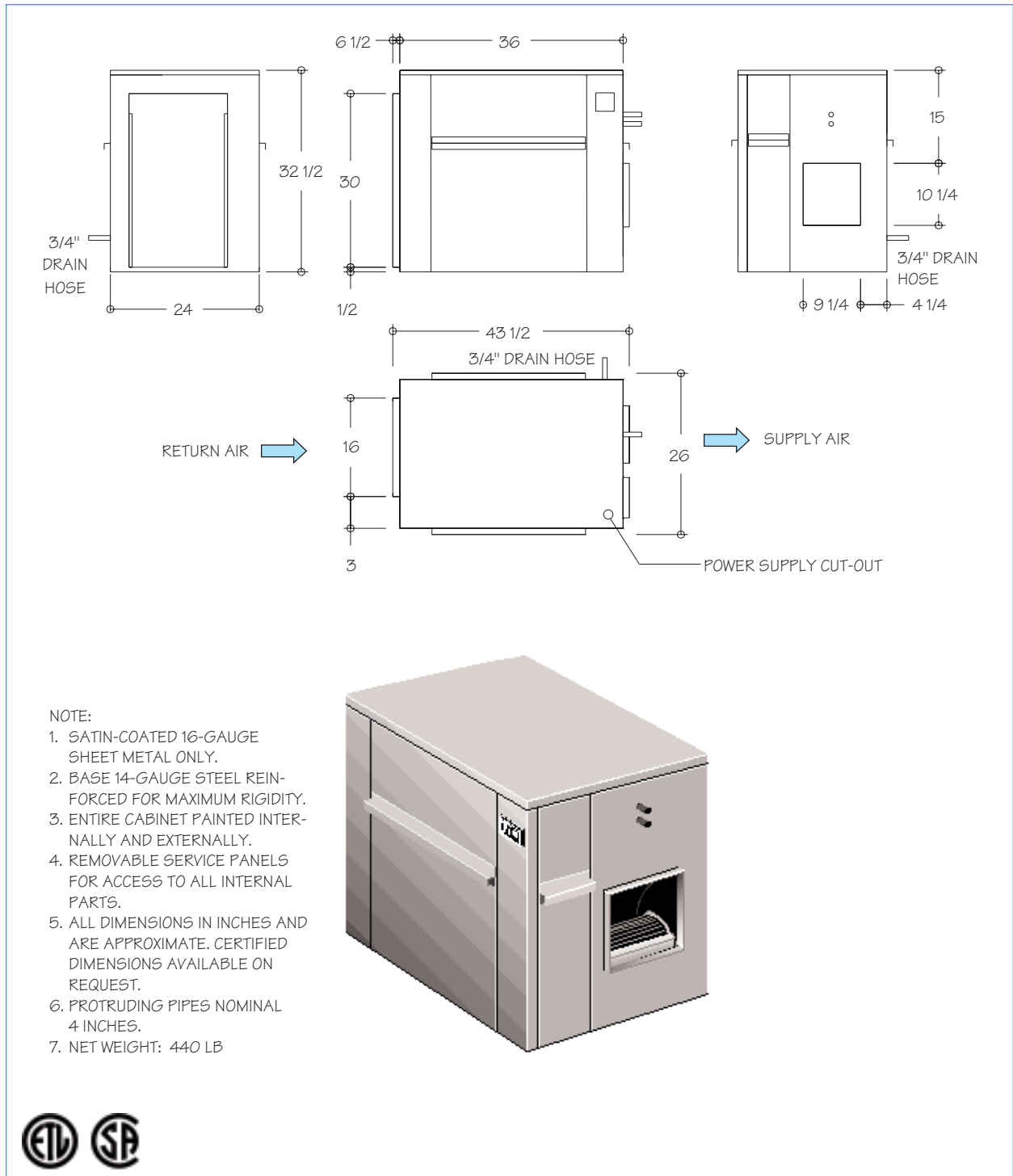
Model 045	DX Coil Sensible Cooling in Btu/h			
	Return Air Temperature ¹	Relative Humidity		
	70%	60%	50%	40%
64 °F	63840	70680	76685	-
66 °F	64260	70985	77080	-
68 °F	64700	71310	77500	-
70 °F	65145	71640	77940	-
72 °F	65590	71985	77410	87110
74 °F	66050	72330	78870	87320
76 °F	66520	72710	79360	87530
78 °F	66980	73080	79850	87780
80 °F	67470	73470	80360	88295
82 °F	67960	73870	80900	88760
84 °F	67540	74240	81455	89530
86 °F	67100	74590	82040	90480
88 °F	66610	74920	82640	91550
90 °F	660100	75200	83920	92810
92 °F	-	75450	85600	94135
94 °F	-	75685	85320	95740
96 °F	-	-	86085	97090
98 °F	-	-	86900	98320
100 °F	-	-	-	99490

1. Outdoor air cooled condenser is mandatory above 80 °F entering air temperature

Dimensional Data

Series DA3 (indoor)
Model 007

Standard Enclosure

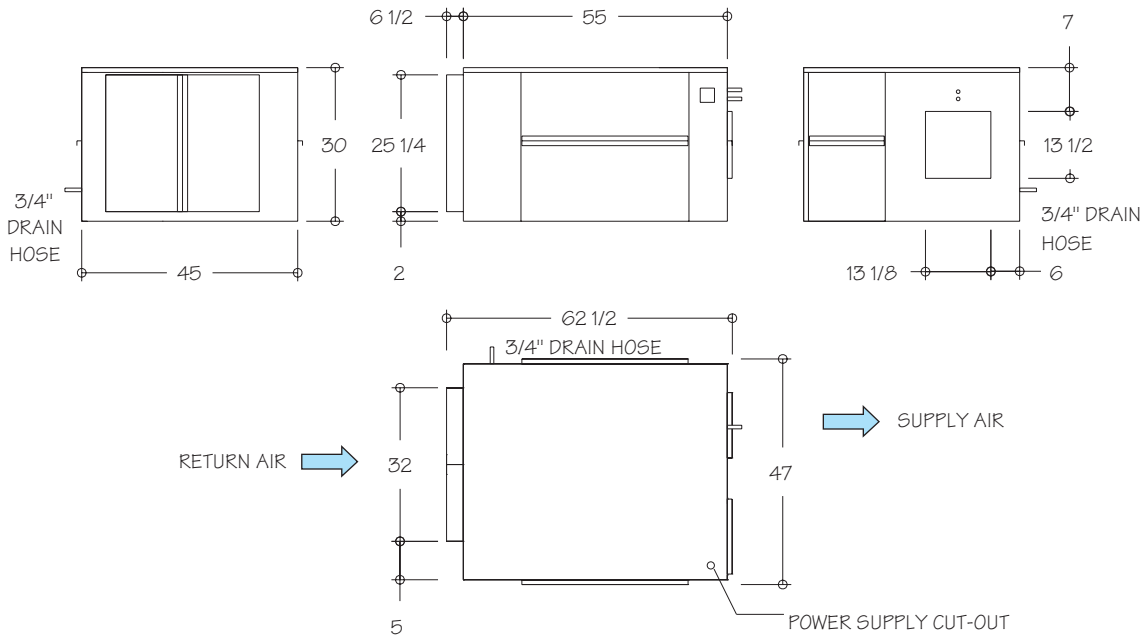


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Dimensional Data

Series DA3 (indoor)
Model 016

Standard Enclosure



NOTE:

1. SATIN-COATED 16-GAUGE SHEET METAL ONLY.
2. BASE 14-GAUGE STEEL REINFORCED FOR MAXIMUM RIGIDITY.
3. ENTIRE CABINET PAINTED INTERNALLY AND EXTERNALLY.
4. REMOVABLE SERVICE PANELS FOR ACCESS TO ALL INTERNAL PARTS.
5. ALL DIMENSIONS IN INCHES AND ARE APPROXIMATE. CERTIFIED DIMENSIONS AVAILABLE ON REQUEST.
6. PROTRUDING PIPES NOMINAL 4 INCHES.
7. NET WEIGHT: 700 LB



Dimensional Data

Series DA3 (indoor)
Model 024

Standard Enclosure

Technical drawings of the Standard Enclosure showing front, side, and top views with dimensions and labels for air flow and hoses.

- Front View:** Shows a width of 45 inches and a height of 42 inches. A 3/4" DRAIN HOSE is indicated on the left side.
- Side View:** Shows a total width of 61/2 inches. The main body width is 55 inches. The height is 40 inches. A 5/8 inch dimension is shown at the bottom left.
- Top View:** Shows a width of 19 inches and a depth of 6 inches. A 3/4" DRAIN HOSE is indicated on the right side. Vertical dimensions of 15 and 16 inches are shown.
- Front-Viewed Side View:** Shows a total width of 62 1/2 inches. The main body width is 55 inches. The height is 47 inches. A 3/4" DRAIN HOSE is indicated at the top. A POWER SUPPLY CUT-OUT is labeled at the bottom right. An arrow labeled RETURN AIR points to the left side, and an arrow labeled SUPPLY AIR points to the right side. A 5 inch dimension is shown at the bottom left.

NOTE:

1. SATIN-COATED 16-GAUGE SHEET METAL ONLY.
2. BASE 14-GAUGE STEEL REINFORCED FOR MAXIMUM RIGIDITY.
3. ENTIRE CABINET PAINTED INTERNALLY AND EXTERNALLY.
4. REMOVABLE SERVICE PANELS FOR ACCESS TO ALL INTERNAL PARTS.
5. ALL DIMENSIONS IN INCHES AND ARE APPROXIMATE. CERTIFIED DIMENSIONS AVAILABLE ON REQUEST.
6. PROTRUDING PIPES NOMINAL 4 INCHES.
7. NET WEIGHT: 860 LB

3D perspective view of the Standard Enclosure showing its rectangular shape, front panel with a cutout, and side panel with a door.

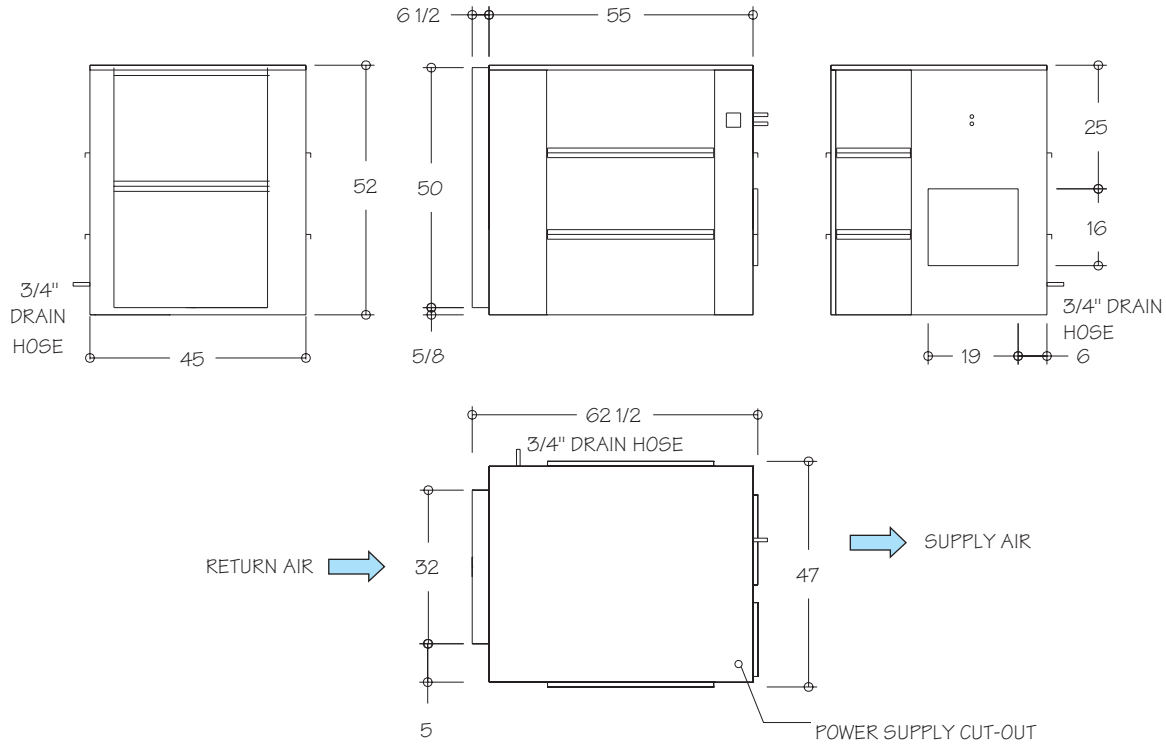


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Dimensional Data

Series DA3 (indoor)
Model 035

Standard Enclosure



NOTE:

1. SATIN-COATED 16-GAUGE SHEET METAL ONLY.
2. BASE 14-GAUGE STEEL REINFORCED FOR MAXIMUM RIGIDITY.
3. ENTIRE CABINET PAINTED INTERNALLY AND EXTERNALLY.
4. REMOVABLE SERVICE PANELS FOR ACCESS TO ALL INTERNAL PARTS.
5. ALL DIMENSIONS IN INCHES AND ARE APPROXIMATE. CERTIFIED DIMENSIONS AVAILABLE ON REQUEST.
6. PROTRUDING PIPES NOMINAL 4 INCHES.
7. NET WEIGHT: 1050 LB



Dimensional Data

Series DA3 (indoor)
Model 045

Standard Enclosure

Technical drawings of the Standard Enclosure showing front, side, and top views with dimensions and labels for air flow and hoses.

- Front View:** Shows a cabinet with a width of 45 inches and a height of 52 inches. A 3/4" DRAIN HOSE is located on the left side.
- Side View:** Shows a depth of 6 1/2 inches and a height of 50 inches. A 5/8 inch diameter hole is located at the bottom left.
- Top View:** Shows a width of 55 inches and a height of 25 inches. A 3/4" DRAIN HOSE is located on the right side. Dimensions of 19 and 6 are shown at the bottom.
- Front View (Detailed):** Shows a width of 62 1/2 inches and a height of 47 inches. A 3/4" DRAIN HOSE is located at the top. A POWER SUPPLY CUT-OUT is located at the bottom right. RETURN AIR is indicated by an arrow on the left, and SUPPLY AIR is indicated by an arrow on the right. A dimension of 32 is shown on the left side, and a dimension of 5 is shown at the bottom left.

NOTE:

1. SATIN-COATED 16-GAUGE SHEET METAL ONLY.
2. BASE 14-GAUGE STEEL REINFORCED FOR MAXIMUM RIGIDITY.
3. ENTIRE CABINET PAINTED INTERNALLY AND EXTERNALLY.
4. REMOVABLE SERVICE PANELS FOR ACCESS TO ALL INTERNAL PARTS.
5. ALL DIMENSIONS IN INCHES AND ARE APPROXIMATE. CERTIFIED DIMENSIONS AVAILABLE ON REQUEST.
6. PROTRUDING PIPES NOMINAL 4 INCHES.
7. NET WEIGHT: 1150 LB

3D perspective view of the Standard Enclosure showing its front, side, and top surfaces.



1. General**1.1 Scope**

- .1 Packaged system for medium and high temperature industrial humidity control.

1.2 Quality and Safety Assurance

- .1 Units shall be ETL or CSA listed.
- .2 Coils shall be UL or CSA listed.
- .3 Blower motors and compressors shall be UL or CSA listed. Blower motors shall have a service factor rating of 1.15 or higher and must be stamped or marked high efficiency.
- .4 Piping in accordance with BOCA code P-308.2 for corrosion resistant coating of copper tubing and M-702.0 for joints and connections. All refrigerant pipes shall be copper type "L" and vinyl-coated for corrosion prevention.
- .5 Units shall be completely factory assembled, wired, piped and tested.
- .6 Manufacturer of the packaged system for medium and high temperature industrial humidity control shall have a minimum of five years experience in the production of these systems.
- .7 The system shall have a limited warranty for one full year from start-up or 15 months from shipment, whichever comes first.
- .8 The entire cabinet shall be painted internally and externally.

1.3 Submittals

- .1 Submit overall dimension drawings, field wiring diagram, installation drawing and product data including air flow, total power consumption, moisture removal capacity and refrigerant charge.

1.4 Operating and Maintenance Data.

- .1 Electrical wiring diagrams, installation and maintenance instructions and an owner's manual shall be supplied with each unit.

2. Products**2.1 General**

- .1 Furnish and install medium and high temperature industrial dehumidification system. The system shall be specifically designed to help control humidity in the facility. Performance and specifications shall meet or exceed that shown on the equipment schedule.
- .2 The dehumidifier shall be a single package unit. Each unit shall include compressor, evaporator (dehumidifying coil), condenser (air reheat coil), three-way refrigerant valve, receiver with pressure relief valve set at 400 psig, pressure control valve and pressure differential valve, hot gas bypass two shut-off valves to isolate the outdoor condenser, two shut-off valves to isolate the receiver, supply air fan, fan motor, motor starters (3 phase only) and controls in one complete enclosure. All controls shall be factory adjusted and preset to the design conditions.

2.2 Principle of Operation

- .1 The humid air from the facility passes through the dehumidifying coil and is cooled below its dew point, thereby condensing moisture. The heat captured by this process and the heat generated by the compressor power consumption are absorbed by a mechanical refrigeration system. The unit shall be designed to reject heat to the air or provide air conditioning. The leaving supply air dry bulb temperature is always higher than the entering return air temperature, except when air conditioning is in operation.

2.3 Cabinet

- .1 The units shall be constructed with a combination of 16-gauge and 20-gauge, satin coated steel, reinforced for maximum rigidity with a 14-gauge base.
- .2 Removable service panels shall be furnished to provide access to all internal parts.
- .3 Each unit shall have a built-in electrical control panel in a separate compartment in order not to disturb the air flow within the dehumidifier during electrical servicing.
- .4 The unit shall have a built-in air filter rack.

2.4 Insulation

- .1 Service panels and top cover shall be insulated to prevent condensation with 1/2 inch thick fiberglass duct liner insulation, approved for 250°F operating temperature and up to 5,000 fpm air velocity. Surface to be protected against perforation with a reinforcing mesh. Fire resistance rating to conform with NFPA Standard 90A. Sound attenuation coefficient shall be not less than 0.64 at a frequency of 1000 Hz as per ASTM Standard C423. Thermal conductivity shall be not more than 0.232 Btu/in-h-sq ft-F at 75 F. Insulation shall be securely fastened with approved adhesive and mechanical fasteners

2.5 Evaporator (Dehumidifier coil)

- .1 Shall not be less than six rows deep for maximum moisture removal capacity with air velocity not to exceed 500 fpm, with 1/2 inch OD seamless copper tubes mechanically expanded to assure high heat transfer with maximum twelve flat aluminum fins per inch.
- .2 Corrugated or facetized fins shall not be acceptable.

Unit Specifications

Series DA3 (indoor) Model 007 - 016 - 024 - 035 - 045

- .3 Coil shall have a 16-gauge galvanized casing and end plates.
- .4 Coils shall be factory tested at air pressures not less than 400 psig in a water bath.
- .5 **Δ OPTIONAL**
Shall have HyPoxy® coated fins. System performance reduction from coated coils must be fully disclosed.
- .6 **Δ OPTIONAL**
Coil shall have a 5 year extended warranty.

2.6 Condenser (Air Reheat Coil)

- .1 Shall not be less than six rows deep for maximum heat transfer with 1/2 inch OD seamless copper tubes mechanically expanded to assure high heat transfer with maximum eight aluminum fins per inch.
- .2 Coil shall have a 16-gauge galvanized casing and end plates.
- .3 Coils shall be factory tested at air pressures not less than 400 psig in a water bath.
- .4 **Δ OPTIONAL**
Shall be HyPoxy coated fins. System performance reduction from coated coils must be fully disclosed.
- .5 **Δ OPTIONAL**
Coil shall have a 5 year extended warranty.

2.7 Drain Pan

- .1 Each unit shall be equipped with a drain pan under the entire evaporator coil and prevent condensate carryover.
- .2 The drain pan shall be made of 20-gauge type 304 stainless steel and shall be heated during operation to prevent ice formation.
- .3 The drain pan shall have an internally mounted P-trap and conden-

sate drain of rubber construction, heated during operation to prevent ice formation.

2.8 Blower

- .1 Shall be double width, double inlet, multi-blade forward curved centrifugal type fan wheel, dynamically and statically balanced and tested, mounted on a solid steel shaft coated with silicon.
- .2 The blower shall have a galvanized steel wheel and galvanized steel casing painted with a baked enamel finish.
- .3 Blower bearings shall be grease - lubricated for 200,000 hours average life.

2.9 Blower Motor

- .1 Shall be open drip-proof, class B insulation, induction type, 40C rise, pre-lubricated ball bearings mounted on an adjustable base.
- .2 Blower motor shall be equipped with internal thermal protection (single phase only).
- .4 Motors shall be UL or CSA approved.

2.10 Blower Belt Drive Assembly

- .1 Shall be single V-belt with a safety factor not less than 1.2, dynamically balanced cast iron fixed pitch fan sheave and dynamically balanced cast iron variable pitch motor sheave.

2.11 Compressor

- .1 Three phase units shall have hermetic compressor, suction gas cooled, suitable for refrigerant R-22 equipped with internal solid state sensor thermal protection, resilient type external mounting and easily removable external crankcase heater for liquid migration protection.

- .2 Single phase units shall have scroll compressor, suction gas cooled, suitable for refrigerant R-22 equipped with internal thermal protection, internal check valve and resilient type external mounting.
- .3 Compressor manufacturer must have a wholesale outlet for replacement parts in the nearest major city.
- .4 **Δ OPTIONAL**
Compressor shall have a 5 year extended warranty.

2.12 Refrigeration Circuit

- .1 Shall have an in-line solder type liquid line filter drier.
- .2 Tamper proof, hermetically sealed non-adjustable high and low pressure controls and refrigeration service valves shall be installed using Schraeder-type valves.
- .3 Refrigeration service valves shall be located outside of the airstream.
- .4 Suction line shall be fully insulated with not less than 1/2 inch closed cell insulation.

2.13 Control Panel

- .1 Shall be built-in within a separate compartment in order not to disturb the air flow during servicing.
- .2 Compressor shall be controlled by contactors.
- .3 On three phase units, fan motor and compressor shall be protected with push-button operated, adjustable thermal trip and fixed magnetic trip overloads. On single phase units, fan motor and compressor shall be protected with internal thermal overloads.
- .4 Power block terminal shall be provided for proper wire size.

- .5 Color coding and wire numbering shall be provided for easy troubleshooting. All wires shall be in a wire duct.
- .6 Compressor shall have a time delay start to prevent short cycling.
- .7 All wiring shall be installed in accordance with UL or CSA safety electrical code regulations, and shall be in accordance with NFPA. All components used shall be UL or CSA listed.
- .8 **Δ OPTIONAL**
A 24VAC/100VA power supply shall be provided to operate a ventilation system during the economizer cooling mode.

2.14 Air Filters

- .1 Shall be disposable type suitable for commercial application, to handle average dust loading. Initial resistance at 100% R.A.F. of 0.12 inch W.G. and average arrestance efficiency of 85% based on 500 fpm air velocity.

2.15 Microprocessor Control

- .1 Unit shall be monitored and controlled with a solid state microprocessor system with remote mounted control panel located in the room.
- .2 The following LED indications shall be provided on the remote control panel:

System On - Indicates that the environment control system is on and the blower is running.

Dehumidify - Indicates that the system is dehumidifying the space and recycling the energy where required.

Cool - Indicates that the air conditioning mode is operating.

Ventilation - Indicates that the outdoor air ventilation system is operating (economizer cooling mode).

Aux Heat - Indicates that the auxiliary space heating is operating.

Service - Flashes to indicate that the unit requires service. A service code shall be provided so that a service diagnosis can be performed quickly and efficiently. Built-in diagnostics shall be provided to detect:

Sensor failures
 Dirty air filter and blocked air filter (**OPTIONAL** with air flow sensor)
 Refrigerant high and low pressure
 High and low dew point
 Low water flow
 Communication fault
 System off
 Anti-short cycle delay
 Air Flow - Flashes to indicate that the air filter is dirty, air flow is blocked, blower motor or belt has failed (with **OPTIONAL** air flow sensor).

- .3 The following setpoints shall be accessible on the remote control panel LED display:

Space temperature
 Space relative humidity
 Outdoor ventilation - air conditioning changeover temperature (**OPTIONAL** outdoor air sensor)
 Two-stage air flow alarm (**OPTIONAL** air flow sensor)

- .4 The following monitored conditions shall be available on the remote control panel LED display:

Space temperature
 Space relative humidity
 Outdoor air temperature (**OPTIONAL** outdoor air sensor)
 Air flow rating (**OPTIONAL** air flow sensor)
 Evaporator air temperature
 Supply air temperature
 Service codes from built-in diagnostics

- .5 The following keys shall be provided on the remote control panel:

System on/off - Controls the on/off status of the entire system. Blower shall continue to operate.

Δ OPTIONAL

System on/off switch fan control shall also stop the blower when in off position.

Service - used in conjunction with service codes and built-in diagnostics to troubleshoot the system.

Display - used to select the information shown on the LED display.

Up and down arrow - used to adjust setpoints and scroll through service codes.

- .6 The following sensors shall be factory mounted in the unit:
 Return air temperature
 Supply air temperature
 Air off evaporator temperature
 Return air relative humidity
 Air flow (**OPTIONAL**)

- .7 The following sensors shall be factory mounted in the remote control panel:

Space air temperature.

- .8 The remote control panel shall be easily detachable from the room location and plug directly onto the unit to simplify initial start-up and service diagnosis.

- .9 The remote control panel shall be connected to the unit via a three-wire shielded cable.

Δ OPTIONAL

An outdoor air temperature sensor shall be field mounted and used for "smart" ventilation control when outdoor air conditions warrant cooling using outdoor air.

Unit Specifications

Series DA3 (indoor)
Model 007 - 016 - 024 - 035 - 045

2.16 ▲ OPTIONAL

Water-Cooled Air Conditioning

- .1 Unit shall be equipped with air conditioning feature to reject heat to a water-cooled condenser. The cooling water heat exchanger shall be coaxial, double wall, vented, for maximum heat transfer from refrigerant to potable water and have cross contamination prevention feature. Heat exchanger shall be corrosion resistant, cupro-nickel water circuit, self-purging and self-draining counter flow design. Water circuit shall be supplied with self-aligning union fittings for easy connection. The water circuit of the unit shall be designed with automatic flow control. Heat exchanger shall be UL or CSA listed and comply with BOCA code P.1505.12.2.
- .2 Refrigeration circuit shall include receiver with pressure relief valve set to 400 psig, pressure control valve and pressure differential valve.

- .2 If unit is to be stored prior to installation store in a clean, dry place. Protect from weather, dirt, fumes, water, construction and physical damage.
- .3 Comply with manufacturer's rigging and installation instructions for unloading the unit and moving it to the final location.

3.3 Installation

- .1 Execute the work in accordance with the specifications and in accordance with the manufacturer's instructions and only by workmen experienced in this type of work.
- .2 Provide a service platform with adequate clearances for each unit. A step ladder shall absolutely not be used for service access.

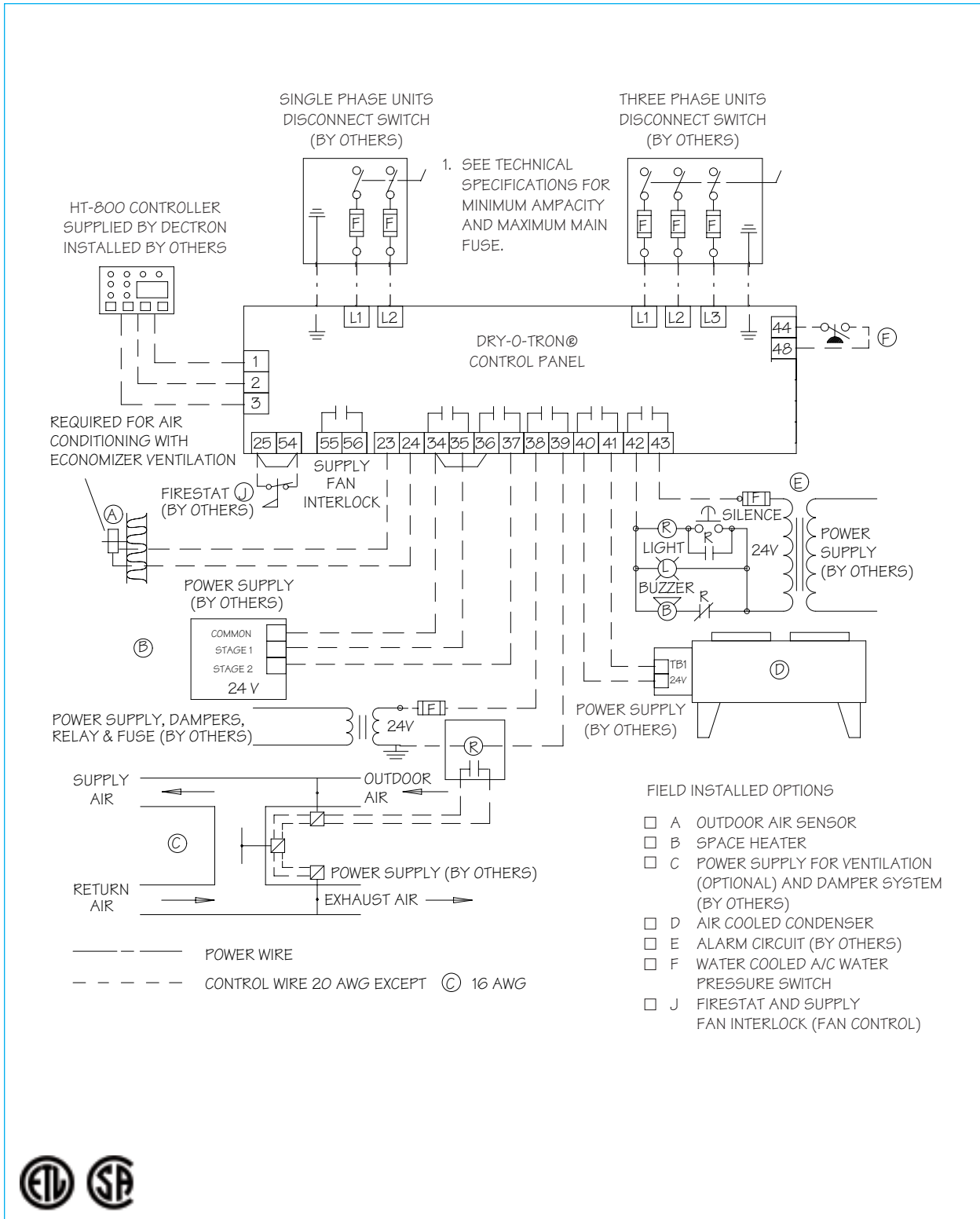
3. Execution

3.1 Unit Selection

- .1 Furnish and install Dectron DRY-O-TRON® Model
DA3-007
DA3-016
DA3-024
DA3-035
DA3-045
Energy Recycling Dehumidifier.

3.2 Product delivery, storage and handling

- .1 Handle dehumidifier unit carefully to prevent damage, breaking, denting and scoring. Damaged units or damaged components shall not be installed. Replace all damaged parts with new parts from the manufacturer.



Series DA3 (indoor)

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