



DR55X-AP

PROFESSIONAL INSTALLATION GUIDE

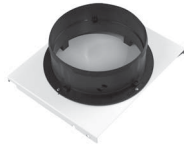


INCLUDED IN THIS BOX

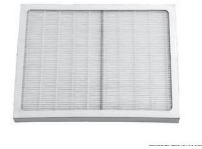
A



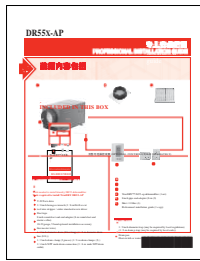
B



C



D



E

(OPTIONAL CONTROLS SOLD SEPARATELY)



E1

E2

Tools required to install DR55X-AP

- ▶ T-20 torx drive
- ▶ 3/8-in. hex drive
- ▶ Drill or duct cutting tool
- ▶ Wire stripper/cutter
- ▶ Standard screwdriver
- ▶ Duct tape
- ▶ 8-in. round duct and starter collar
- ▶ 18-22 gauge, 5 band thermostat wire
- ▶ 1/2-in. diameter drain line (8 ft.)
- ▶ 1/2-in. drain clamps (2)
- ▶ 3/4-in. male NPT drain outlet

- ▶ A DR55X –AP Dehumidifier (1 set)
- ▶ B 8-in duct collar (2)
- ▶ C MERV Filter (1)
- ▶ D Installation guide (1)
- ▶ E1 Trueaq Indoor Air Quality Control Device
- ▶ E2 H8908 Manual Dehumidistat

Options

- ▶ 1/2-in. drain p-trap (may be required by local code)
- ▶ Drain pan
- ▶ Float switch or water sensor (normally closed)



Installation Checklist

Included in this box

- A DR55X -AP (1)
- B 8-in. duct collar (2)
- C MERV 11 Filter (1)
- D Installation Guide

Control Options (Sold separately)

- E₁ True IAQ
- E₂ H8908 Manual Dehumidistat

Tools Required (Not Supplied)

- T-20 torx drive
- 3/8-in. hex drive
- Drill or duct cutting tool
- Wire stripper/cutter
- Standard screwdriver
- Duct tape
- 8-in. round duct and starter collar
- 18-22 gauge, 5 band thermostat wire
- 1/2-in. diameter drain line (8 ft.)
- 1/2-in. drain clamps (2)
- 3/4-in. male NPT drain outlet

Options

- 1/2-in. drain p-trap (may be required by local code)
- Drain pan
- Float switch or water sensor (normally closed)



Warning: Installation must be performed by a qualified service technician and must comply with local codes.

Remove power to the device before installing or servicing the device.

Failure to connect the device according to these instructions may result in damage to the device or the controls.

INSTALLATION INSTRUCTIONS BEGIN ON PAGE 1

DR55X-AP Dehumidifier

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- DR55X-AP Dehumidifier is specially designed for interior user. Please install in dry condition.
- Please leave some space for the front panel when installing the Dehumidifier for repair and maintenance.
- The exhaust gas shall not face the human body or above the water area.
- In the case of the Dehumidifier is used in the pool area or near the hot spring, please ensure that the Dehumidifier does not fall into water or be splashed by water, and confirm that the Dehumidifier has been connected to the grounding fault circuit breaker (GFI) socket.
- Please do not place the Dehumidifier directly on the supporting structure of the living space to ensure quiet operation.
- Please be sure to install the Dehumidifier in a place below or above the drainage space. In the case of the Dehumidifier may be damaged, please install it in a place above the drainage space.



Do you need any help? For service support for this Product, please visit <http://www.resideo.com>, or call the after-sales service hotline 400-166-0812.

Read and save these instructions

Introduction to DR55X-AP Dehumidifier

DR55X-AP Dehumidifier, with its high performance and high efficiency, can ensure that the air humidity in your home is maintained at the appropriate level.

Advantage

- Up to 55 pints (26.0 liters) of water can be removed from indoor air every day
- Built in humidity control function. No additional connection controller is needed, and it can be used after power on. Connect the optional external controller to realize centralized pipeline control
- Energy Star



Maintain ideal humidity

Dew point and relative humidity (RH) affect the perception of heat. Higher humidity levels make the body feel hotter than the actual temperature. In the case of the relative humidity is maintained at an appropriate level, then your refrigeration equipment can work less, because the air is also cool after removing the moisture.

Apparent Temperature of Air

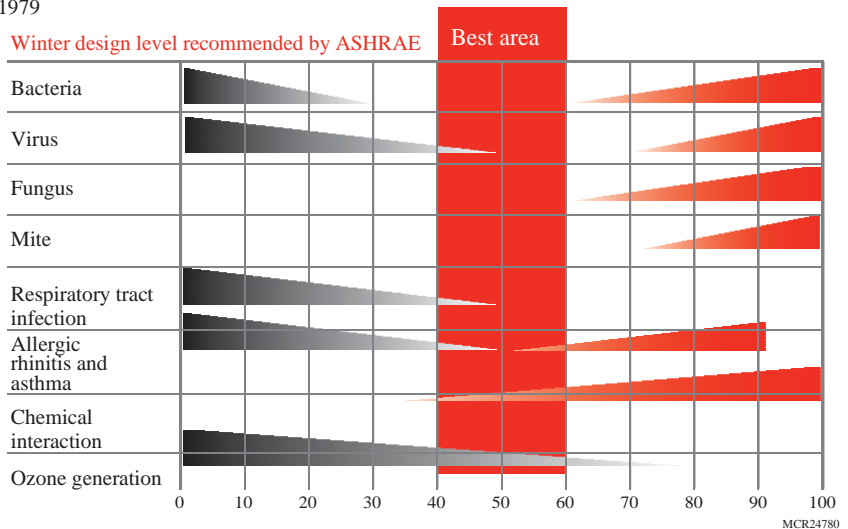
The combined effect of moisture and heat on the sensation of heat
 For Instance: In 90 degrees Fahrenheit air, if the relative humidity is 50%, the human body will feel as high as 96 degrees Fahrenheit.

		Relative Humidity (Percent)																					
		0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95	100	
Air temperature	100	91	93	95	97	99	101	104	107	110	115	120	126	132	138	144							
	95	87	88	90	91	93	94	96	98	101	104	107	110	114	118	124	130	136					
	90	83	84	85	86	87	88	90	91	93	95	96	98	100	102	106	109	113	117	122			
	85	78	79	80	81	82	83	84	85	86	87	88	89	90	91	93	95	97	99	102	105	108	
	80	73	74	75	76	77	77	78	79	79	80	81	81	82	83	85	86	86	87	88	89	91	
	75	69	69	70	71	72	72	73	73	74	74	75	75	76	76	77	77	78	78	79	79	80	
70	64	64	65	65	66	66	67	67	68	68	69	69	70	70	70	71	71	71	71	71	71	72	

Extreme danger
 Danger
 Added note
 Note

Reference: The temperature-humidity index proposed by R.G Steadman, Journal of Applied Meteorology Science, July 1979

Based on the annual average temperature statistics, the experts of ASHRAE * define the relative humidity of 40-60% as the ideal humidity range. When the indoor relative humidity exceeds 60%, the living space is more likely to breed fungi and bacteria. Dehumidifier can ensure that the humidity of living space will not be too high all the year round.
 *American Society of Heating, Refrigerating and Air Conditioning Engineers (ASHRAE)



Control Setting

Built in humidity control system: DR55X-AP has built-in humidity control system "Set and forget". Once set correctly, can control the Product to run automatically. It can also be connected to the external controller. At this time, the embedded humidity control system needs to be in the off state.



Optional Controls

The DR55X-AP Dehumidifier can be used with the following external controls:



TrueIAQ digital control device (DG115EZIAQ)

- Automatically adjusting and maintaining the ideal humidity..
- Sensor that display the outdoor temperature and humidity.
- Settings that display the actual and appropriate humidity.
- Advanced ventilation solutions, including energy-saving operation and shutdown under extreme conditions.
- Maintenance and Service reminder function.
- Control other indoor air quality management equipment.



Mechanical humidity control (H8908DSPST) and automatic ventilation control (W8150A1001)

- Manual humidity control with intuitive comfort Settings.
- The integrated humidity map can accurately control under changing outdoor conditions.
- Automatic W8150 ventilation meeting the standards of American Society of Heating, Refrigeration and Air Conditioning Engineers.
- Control device, or continuous operation.

Technical Specification

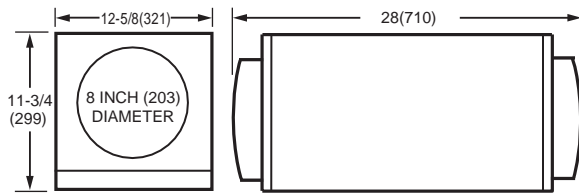
Please install the DR55X-AP in accordance with the national electrical code.

Dry bulb temperature	Inlet humidity	Dehumidification capacity (pint / day)
80°F (26.7°C)	60% RH	55
70°F (21.1°C)	60% RH	42
60°F (15.6°C)	60% RH	21

Living space area (sq ft)	Dehumidification capacity required to maintain indoor relative humidity*		
	60% indoor relative humidity (Pint/Day)	50% indoor relative humidity (Pint/Day)	40% indoor relative humidity (Pint/Day)
2080	49-54	55-58	71-78
2600	61-68	65-72	90-97
3120	75-82	79-86	95-110

* The data are based on extreme weather conditions with outdoor relative humidity of 70-90%. For relatively mild climate conditions, small dehumidification capacity can fully meet the dehumidification requirements of larger living space. The actual needs may be different.

Dimensions in inches and (mm) :



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The air volume relative to the external static pressure (0-1 inch water column pressure) when the pipe end is connected to the interface

0 inch water column	160 CFM
0.2 inch water column	140 CFM
0.4 inch water column	120 CFM
0.6 inch water column	90 CFM

Product Weight: 60 lb (27 kg)

Shipping Weight: 68 lb (31 kg)

Shipping Size: 16.7in. H x 17 in. W x 32.9in. L

Filter Screen: MERV 11in. H x 8.9in. W x 0.75in. D

Drainage system connection: 3/4 "NPT female thread with 3/4" male thread.

Pipe connection: 8 inch round inlet and outlet. ABS plastic material, compatible to connect to rigid or flexible pipes with sheet metal screws and/or tape.

Shell: powder coated 18gauge (0.9mm) galvanized steel

Thermal insulation: R = 1

Compressor: Rotor type, 5.8KBTU

Refrigerant: R-410A, 15 oz.

Operating temperature range

(Outside the cabinet):

34°F to 135°F (1.1°C to 57.2°C)

Working humidity range: 0-99% RH

Rated Input

- Rated Input Voltage: 220 VAC, 50 Hz
- Rated Input Current: 2.2 A

Rated Output

- Power transformer to R / C terminal: 24 VAC, 0.85 A
- Energy consumption: 2.2 liters (4.6 pints) per kWh

Executive Standards and Certification

GB4706.32 standard and China CCC Certification

Install in accordance with you requirements

It is recommended to use expansion pipe to connect the air inlet of DR55X-AP to reduce vibration and noise.

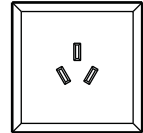


Pipe Size: In the case of the pipe length does not exceed 25 feet, please use a round pipe with a diameter of at least 8 inches; In the case of the length of the pipe exceeds 25 feet, please use a round pipe with a diameter of at least 10 inches. If there are two-three pipe branches at the main inlet/outlet, please use a round pipe with a diameter of at least 8 inches. If the main inlet / outlet has 4 or more pipe branches, please use a round pipe with a diameter of at least 10 inches.

Isolation Area: It may be necessary to route pipes to isolated areas or areas with stagnant air flow to achieve effective dehumidification effect.

Electrical requirements:

220 VAC Power Socket. It is recommended to use Ground Fault Interrupter (GFI).

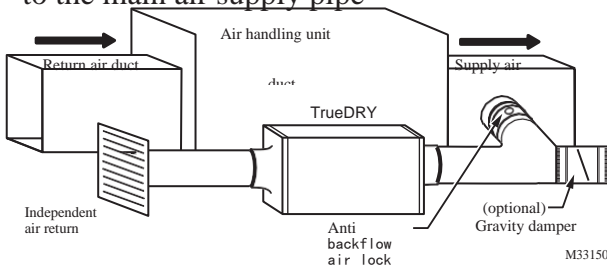


Installation Requirements:

Please be sure to install it on a flat, stable and horizontal installation platform. The Product is fixed firmly and cannot be moved.



With special air return outlet connected to the main air supply pipe

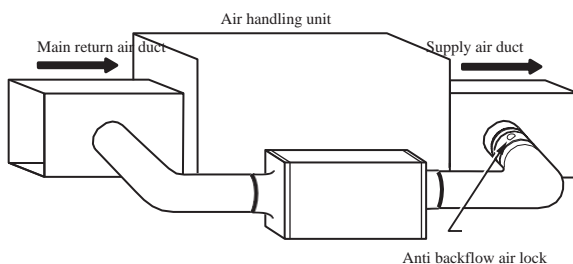


Achieve ideal working condition under the following conditions...

- DR55X-AP can be connected with dedicated centralized return air pipeline.
- If the dehumidifier needs to operate with the air conditioner at the same time, a damper shall be added on the outlet pipe of the DR90X-AP Dehumidifier to minimize the return of cold air when the dehumidifier is shut down.
- DR55X-AP can be installed with a 20% adjustable gravity damper to provide dry air for specific areas according to needs.



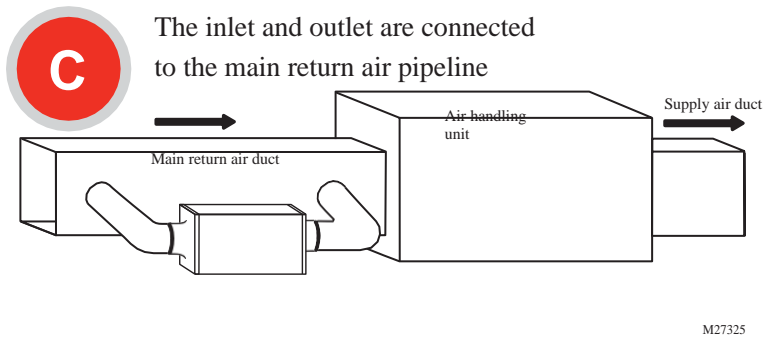
It is connected between the main air return pipe and the air supply pipe



Achieve ideal working condition under the following conditions

- Operate the DR55X-AP dehumidifier as opposed to air conditioning operation. If the dehumidifier needs to operate with the air conditioner at the same time, a damper shall be added on the outlet pipe of the dehumidifier to minimize the return of cold air when the dehumidifier is shut down.
- DR55X-AP cannot be connected to dedicated centralized return air duct.

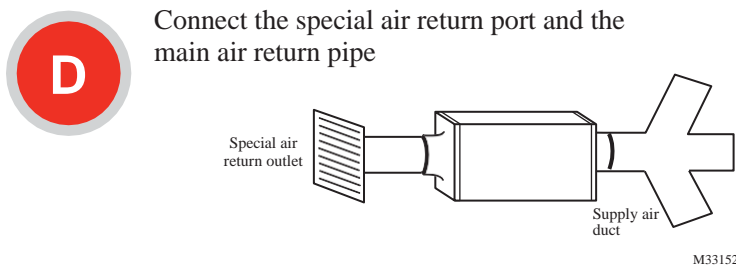
Install in accordance with your requirements (Continued)



Achieve ideal working condition under the following conditions ...

- When the air conditioner is working, run DR55X-AP Dehumidifier.
- Try to avoid increasing the discharge air temperature (DAT).
- Do not connect the dedicated centralized return air system.

Note: when the air conditioning system stops, the moisture on the evaporator surface of the air conditioner may increase the humidity of the air treated by DR55X-AP.



Achieve ideal working condition under the following conditions

- DR55X-AP cannot be connected to forced ventilation HVAC system through pipes

Drainage

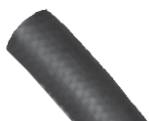


Install 3/4 inch NPT external thread drain pipe and connect the drain port.

Use a 1/2 inch drain to connect the drain port.

Clamp the drain fitting with pipe clamps and snap rings.

When installing the drainage pipe, maintain a continuous drainage slope connected to the drainage channel or condensate pump to ensure smooth drainage.

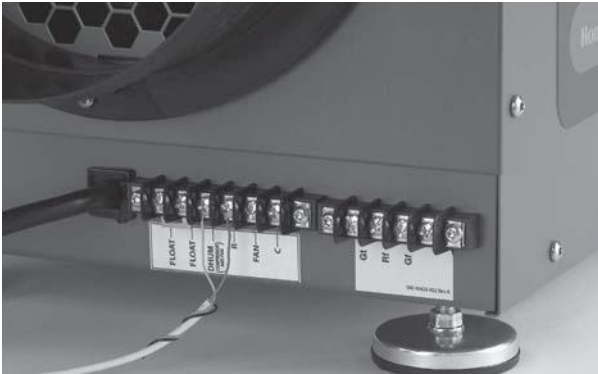


Terminal Description



Warning: The harm of low voltage.
 May cause equipment damage.
 Please disconnect the air conditioning system before installation.

Two terminal blocks are installed on the air outlet chassis of DR55X-AP as shown in the figure.



***Note:** The screws at both ends of the wiring block are used to fix the wiring block on the chassis. This screw is not used for wiring connections.

The six terminals of the left terminal block are (from left to right in the picture)

FLOAT (2): external low voltage water level sensor or float switch

DHUM: The compressor and fan work during dehumidification operation

R: Dr55x-ap 24 V Output

FAN: Operation of fan in ventilation mode

C: DR55X-AP 24 V Output

External 24 volt devices can be powered by terminals R and C (Maximum power is 20 VA).

The right wiring bar shown in the figure above is only used for linkage between DR55X-AP and equipment fan. The three terminals are:

Gt: The temperature controller is connected to the control fan

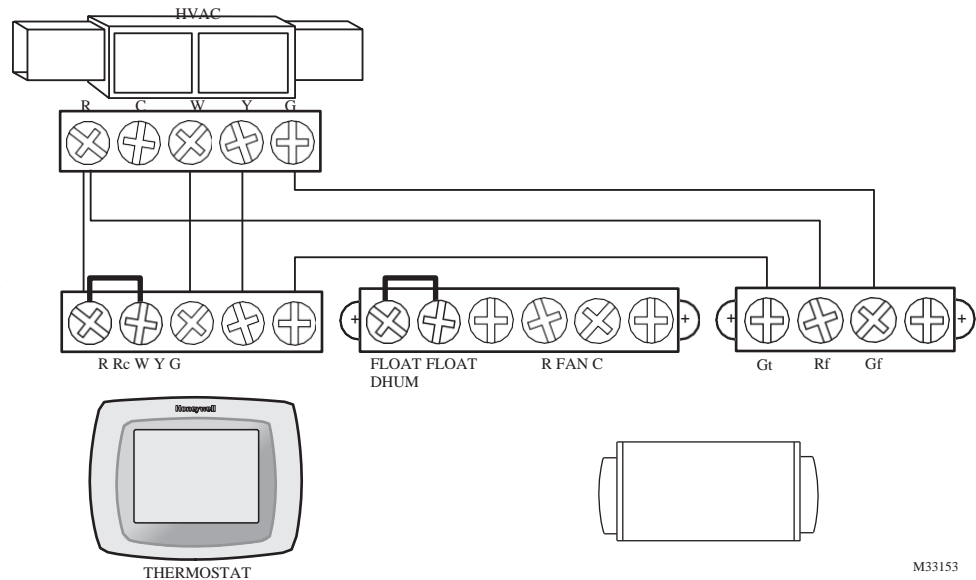
Rf: 24 V input from the equipment fan

Gf: The equipment fan controls the operation of the fan.

Wiring

Please connect the DR55X-AP in accordance with the corresponding connection diagram of the operating mode you need.

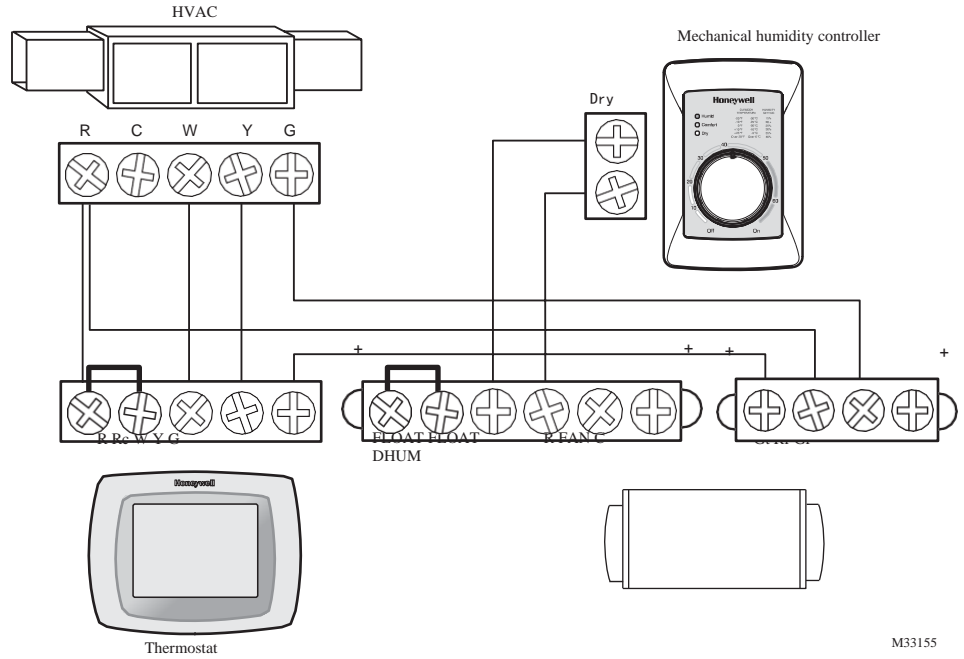
The figure on the right shows the connection method of dehumidifier operation controlled by airborne humidity controller.



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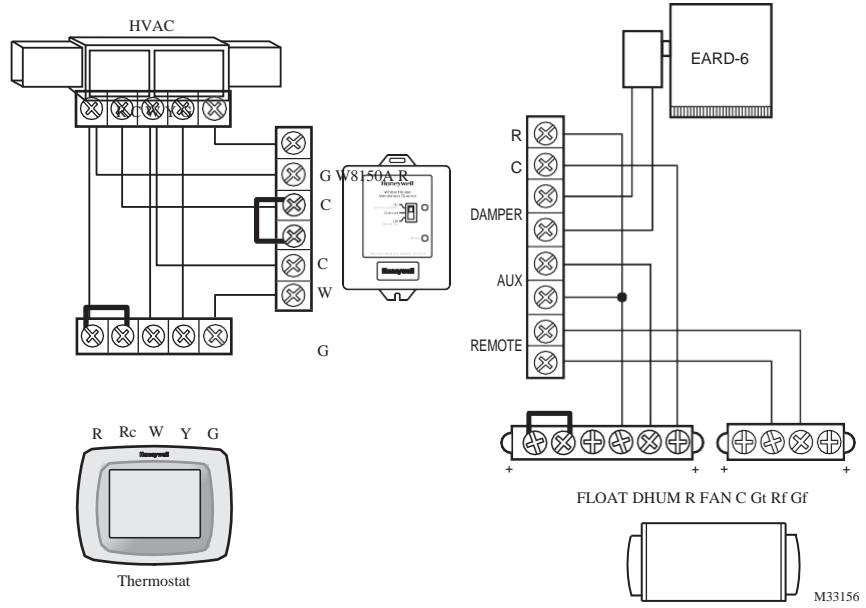
Wiring (Continued)

The figure on the right shows the connecting method of the external mechanical humidity controller to control the operation of the dehumidifier.



M33155

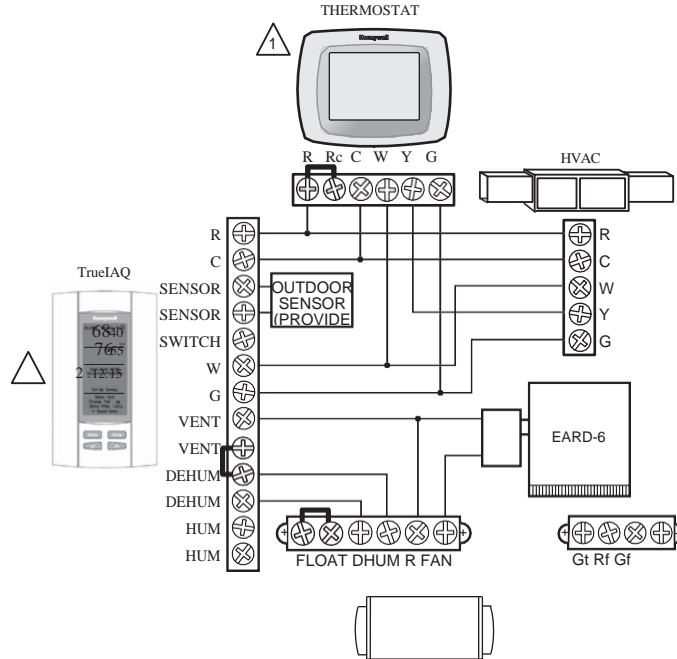
Please connect in accordance with the right figure when connecting to the air duct system with external humidity and ventilation control device.



M33156

Wiring (Continued)

If you need to use the dehumidifier with an electrified dehumidifier such as TrueIAQ (DG115EZIQ), please install it as shown in the figure.



- ⚠ 1 If a thermostat other than TH5110, TH5220, TH5320, TH6110, TH6220, TH6320, TH8110, TH8320, or TH8321 is used, a relay may be required to isolate the wire G.
- ⚠ 2 The integrated business unit of the program is set to 60 as Ø to force the system fan to be in working state when the dehumidification is started.

Test

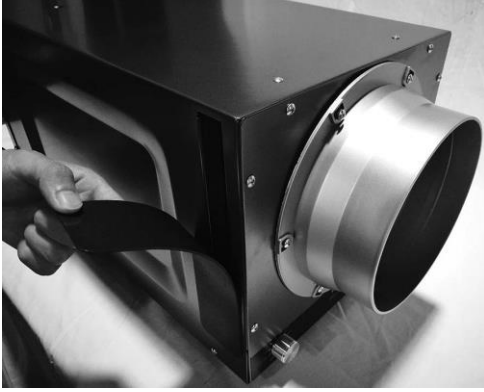
After the DR55X-AP dehumidifier is powered on, set the humidity control function at a lower relative humidity level to start the dehumidification function. Make sure that the compressor and fan of DR55X-AP dehumidifier are on. The furnace blower shall also be on to allow air circulation. These will take up to two minutes. When the test is completed, make sure that the control function is set at the required relative humidity percentage or turn off the control function. Setting the humidity control to off will turn off the DR55X-AP dehumidifier.

Clean

It is necessary to repair and maintain the Product every year to ensure the efficient operation of the dehumidifier.

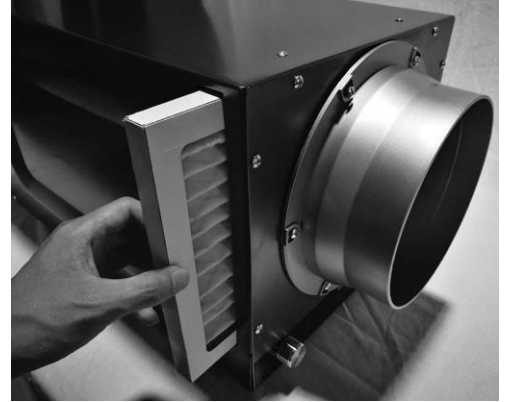
1

Please unplug the DR55X-AP dehumidifier and remove the filter magnet before starting the cleaning service.



2

Take out the filter screen (50049537-005) and replace it with a new one. Replace the filter magnet.



3

Check drainpipe connections and drainpipe lines to ensure debris and sludge are removed. Ensure that all hose connections are secure while drain maintenance is complete.



4

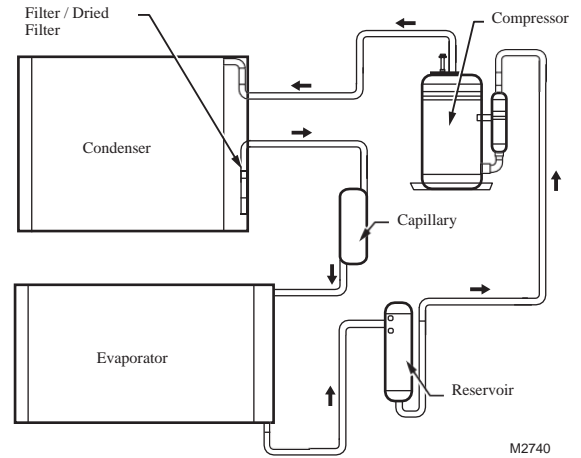
When this maintenance is complete, start the dehumidification function and check the compressor and fan startup status. If a thermostat or TrueIAQ controller is connected, reset the maintenance prompt time.

Technical Description

The DR55X-AP dehumidifier uses a refrigeration system similar to air conditioning. Its function is to remove the heat and moisture in the air into the air, and transfer to the air emissions.

The high temperature and high pressure refrigerant gas reaches the condenser coil from the compressor. The refrigerant is cooled and condensed by the air to be discharged, and the heat is released. After that, the liquid refrigerant passes through a drying filter and a capillary tube which can reduce the pressure and temperature of the refrigerant. Then, the refrigerant enters the evaporator coil, absorbs the heat in the air and evaporates.

Evaporators need to operate under wetting conditions, which means that in normal operation, all evaporator tubes contain liquid refrigerant. The wetted evaporator shall maintain a nearly stable pressure and temperature from inlet to outlet in the whole coil.



Troubleshooting



Maintenance Service can only be completed by professional maintenance technicians. The maintenance of the DR55X-AP dehumidifier and its high voltage refrigeration system and high voltage circuits may result in a risk to human health resulting in death, serious personal injury and/or property damage.

Fault Phenomenon	Recommended Troubleshooting Steps
Dehumidification cannot be carried out. The fan and compressor are not running, and the ventilation timing switch is off.	<ol style="list-style-type: none"> 1. The Product is not powered on, or the power outlet is not powered on. 2. Humidity control Setting is too high or damaged. 3. Poor connection of internal or control wiring. 4. The compressor relay is damaged. 5. The control transformer is damaged. 6. The optional condensate pump safety switch is not closed.
Dehumidification cannot be carried out. When the dehumidification is started and the ventilation control is off, the compressor is not running but the fan is running.	<ol style="list-style-type: none"> 1. The operation capacitor of compressor is damaged. 2. Poor connection in compressor circuit. 3. The compressor is overloaded and damaged. 4. The compressor is damaged. 5. Defrost thermostat on. 6. The optional condensate pump safety switch is on.
When the dehumidification is started and the ventilation control device is turned off, the fan runs, but the compressor starts and stops frequently.	<ol style="list-style-type: none"> 1. Low ambient temperature and / or humidity causes the Product to work repeatedly in defrost mode. 2. The compressor overload protector is damaged. 3. The compressor is damaged. 4. Defrost thermostat is damaged. 5. One or more of the air filters is too dirty or the air flow is blocked. 6. Insufficient refrigerant causes the equipment to work repeatedly in defrosting mode. 7. Poor connection in compressor circuit. No matter what position the fan control switch is in, the fan will not work.

Troubleshooting (Continued)

Fault Phenomenon	Recommended Troubleshooting Steps
The fan does not turn when the ventilation function is activated. With the humidity control device on, the compressor runs for a short time, and then starts and stops frequently.	<ol style="list-style-type: none"> 1. Poor connection of fan circuit. 2. An obstacle prevents the fan from rotating. 3. The fan is damaged. 4. The fan relay is damaged. 5. The capacitor of the fan is damaged.
The evaporator coil is frosting continuously, and the dehumidification capacity is low.	<ol style="list-style-type: none"> 1. Defrost thermostat is loose or damaged. 2. Insufficient refrigerant. 3. One or more of the air filters is too dirty or the air flow is blocked.
The Product cannot be ventilated.	<ol style="list-style-type: none"> 1. Check the connection of the control line (also check the connection of the control line of the fresh air door). 2. The fresh air door is damaged. 3. The inlet air is dirty. Clean the outside air inlet hood.
The Product was able to remove some water, but did not achieve the expected discharge.	<ol style="list-style-type: none"> 1. Air temperature and / or humidity decrease. 2. The calibration of the hygrometer and / or thermometer used is invalid. 3. The Product has entered the defrosting cycle. 4. The air filter is too dirty. 5. Defrost thermostat is damaged. 6. Insufficient refrigerant. 7. Air leakage, such as loose cover or pipe leakage. 8. The compressor is damaged. 9. The pipeline is restricted. 10. The optional condensate pump safety switch is on.
Test the Product to determine the problem:	<ol style="list-style-type: none"> 1. Please separate the area control wiring connection from the host. 2. Please connect the R and fan connector on the main unit together. Only the impeller fan shall be running. Disconnect the cable. 3. Please connect the R and DHUM connectors on the host; The compressor and impeller fan shall be running 4. In the case of these tests are valid, the host can work normally. You shall check the control panel and area control wiring for the following problems. 5. Please remove the control panel from the junction box and separate the control panel from the area where the control wiring is installed. Connect the blue, yellow and green wires on the control panel directly to the taps of corresponding colors on the host computer. Please disconnect the purple, white and red wires. 6. Turn on humidity control. The compressor and impeller fan shall be running. 7. If all of these tests are valid, the most likely problem is the area control wiring.

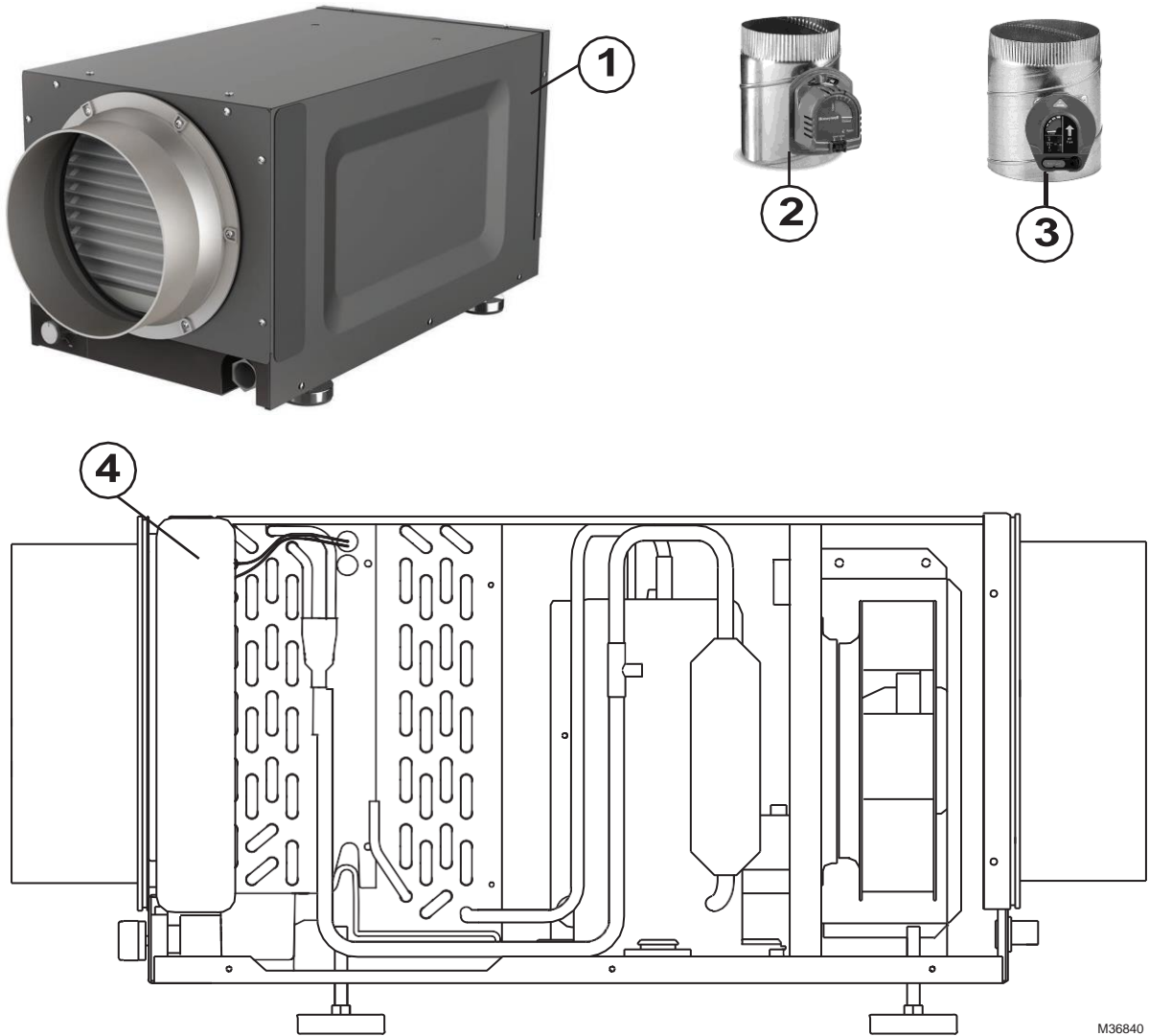
Refrigerant Charging

In the case of the refrigerant is reduced due to routine maintenance or leakage, new refrigerant shall be injected accurately and sufficiently. In the case of the original refrigerant remains in the system, the old refrigerant shall be discharged and recycled before the new refrigerant is injected. Refer to the Instructions on the Product identification plate to confirm the correct charge weight and refrigerant type.

.....

Parts Lists

Refer to Figure No	Basic parts and accessories	Part number
1	DR55 X -AP	DR55 X -AP
2	Motor driven air valve	EARD6
3	8-inch anti backflow damper (without counterweight)	SPRD8
4	Filter Screen	50049537-005



For Reference Only



resideo

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