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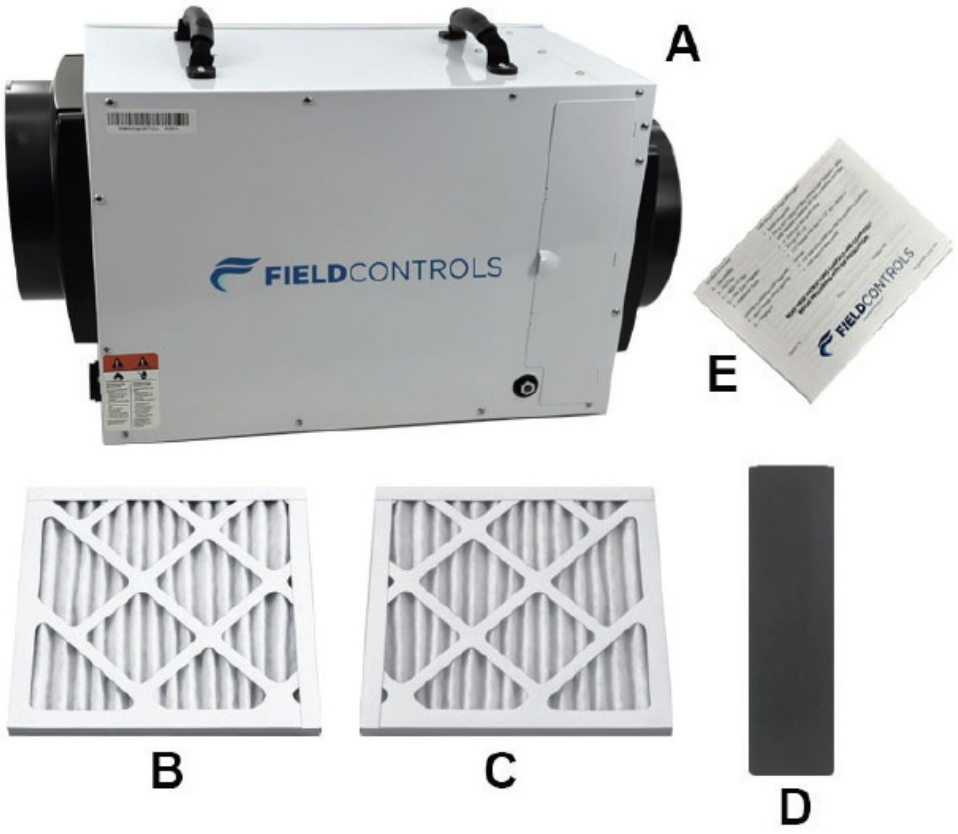
FIELD CONTROLS FC-60DH-2 Controls Dehumidifier

Product Usage Instructions

- The dehumidifier draws air into the cabinet through a washable pre-filter and Merv 10 filter to remove moisture before releasing it back into the home.
- Place the dehumidifier on the ground with its feet unless using a Field Controls Hanging Kit.
- If locating the dehumidifier above a finished space, always add a condensate pan underneath.
- Adhere to local codes for draining and installing a float switch in the pan for overflow protection.

Included in this box

- A – Dehumidifier
- B – Pre-Filter
- C – MERV-10 Filter
- D – Filter Door (magnetic)
- E – Installation Guide



Optional Accessories Sold Separately:

- F – Wired Remote Control Assembly
- G – Hanging kit

Tools required to install the dehumidifier:

- Philips screwdriver
- Drill or duct cutting tool, Wire stripper/cutter, Scissors or utility knife, Standard screwdriver T25 Torx screwdriver, Duct tape.
- 10” round duct and starter collar
- 3/4”OD PVC > 6”
- 1/2” diameter drain line (8’) 1/2” drain clamps (2)

Optional:

- 1/2” drain p-trap drain pan (may be required by local code)
- Float switch or water sensor

SAFETY INSTRUCTIONS

- Read these instructions and safety precautions before installing or operating this dehumidifier. Do not discard.
- This device MUST be installed by a qualified agency by the manufacturer’s installation instructions. The definition of a qualified agency is: any individual, firm, corporation or company which either in person or through a representative is engaged in, and is responsible for, the installation and operation of HVAC appliances, who is experienced in such work, familiar with all the precautions required, and has complied with all the requirements of the authority having jurisdiction.

WARNING

- Installation must be performed by a qualified technician and must comply with local codes. Improper installation may result in injury or property damage.
- Always disconnect power before installing or servicing to avoid electrical shock (unless otherwise noted). Failure to disconnect power may result in damage to the device or onboard controls.
- Always wear protective gloves when installing or servicing the device. Sharp edges may cause serious harm.
- Be sure to use caution when lifting the unit, lift only by using the provided handles. Dropping unit may cause physical harm or damage to the equipment.
- This appliance is not intended for use by persons (including children) with reduced

physical, sensory, or mental capacities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the device by a person responsible for their safety. Children should be supervised to ensure that they do not play with the unit.

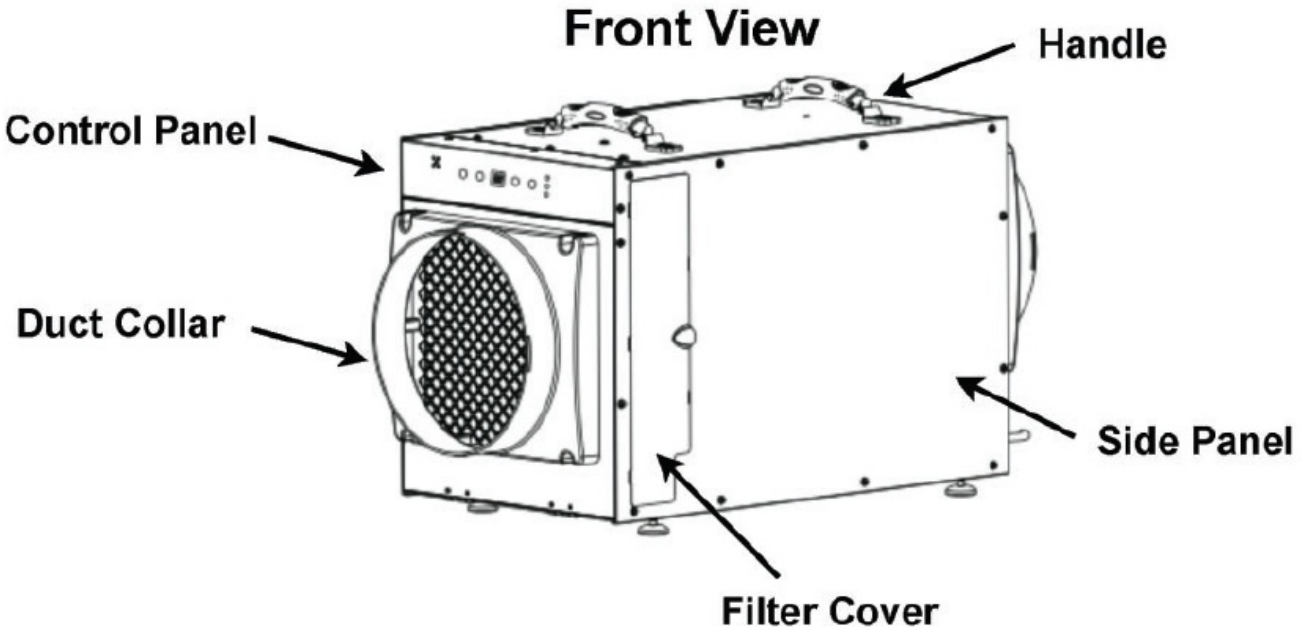
- Never operate a unit with a damaged power cord. If the power cord is damaged, it must be replaced by the manufacturer, service agent, or qualified professional to avoid damage to equipment, person, or dwelling.

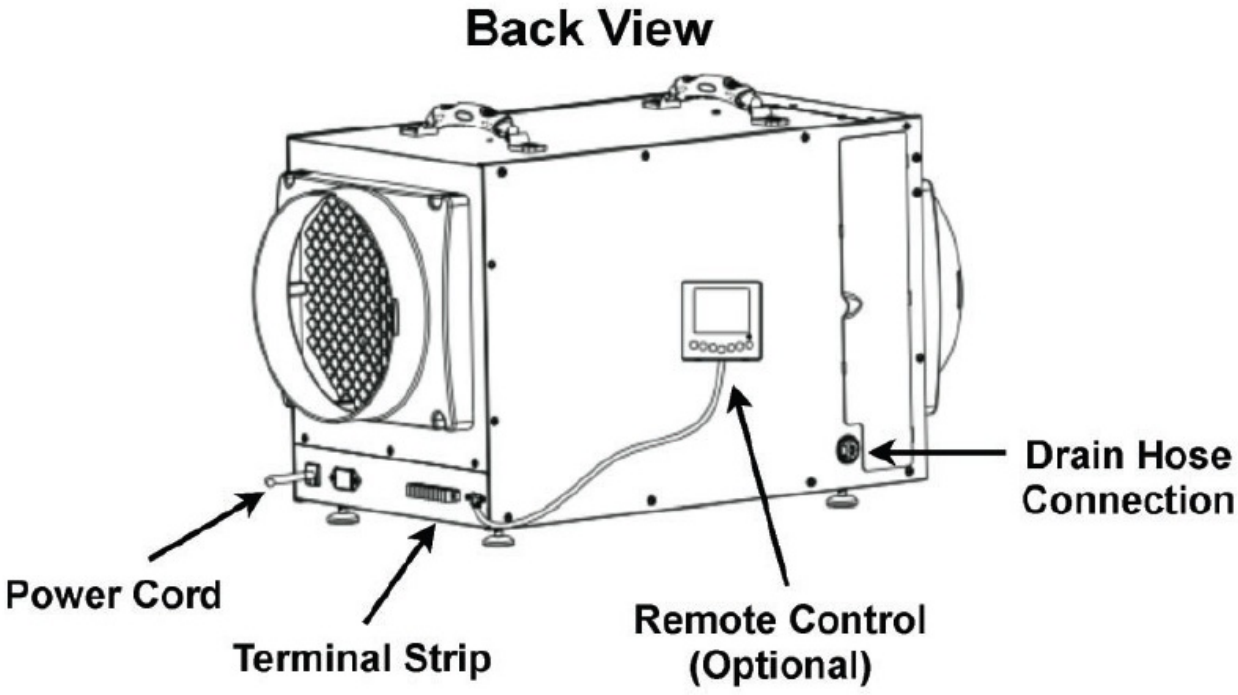
IMPORTANT NOTES

- Always connect your dehumidifier using a grounded, dedicated electrical connection that is GFCI protected with at least 15 amp capacity.
- The use of any other type of wiring will void your warranty.
- Be sure to follow your GFCI manufacturer's maintenance instructions. You will typically need to test the operation of the trip circuit monthly.
- Do not insert objects or your fingers into the inlet or discharge.
- Do not use water to clean the exterior of the dehumidifier. To clean the unit, unplug it from the power, then use a damp cloth to wipe the exterior.
- Do not stand on the dehumidifier or place objects on it.
- Do not use with an extension cord or plug adapter.
- Wait 24 hours before running the unit if it was not shipped or stored in the upright position.
- A drain pan must be installed under the unit if it is installed above a living space or area that can be damaged from water leakage.
- Do not use in pool applications. Pool chemicals can damage the dehumidifier.
- Do not use any solvent or cleaner on or near the circuit board. Chemicals can damage circuit board components and void the warranty.
- Do not use dehumidification to prevent window condensation in the winter. If condensation occurs, address condensation with the use of ventilation to lower indoor humidity in the winter.
- To ensure quiet operation, do not place directly on structural supports.
- Install the unit with ease of access for maintenance purposes.

ABOUT FIELD CONTROLS DEHUMIDIFIER

Field Control Dehumidifier controls the humidity level in your entire home and ensures the home is maintained at the proper humidity levels through high performance and efficiency. The blower inside the unit draws air into the cabinet through a washable pre-filter and Merv 10 filter prior to having the moisture removed and released back into the home.





BENEFITS OF MAINTAINING THE IDEAL HUMIDITY LEVEL

- The optimal humidity range defined by industry experts and health professionals is between 40-60% on an average annual basis. The American Society of Heating, Refrigerating, and Air Conditioning Engineers (ASHRAE) states that when indoor

humidity exceeds the 60% threshold, the home is more susceptible to bacteria, viruses, mold, and mildew.

- Dew points and relative humidity (RH) aff ect the way your body senses temperature. Higher humidity levels cause the air to feel much hotter than the actual temperature. When RH is maintained properly, your cooling equipment may not run as often because dehumidifi ed air feels cooler.

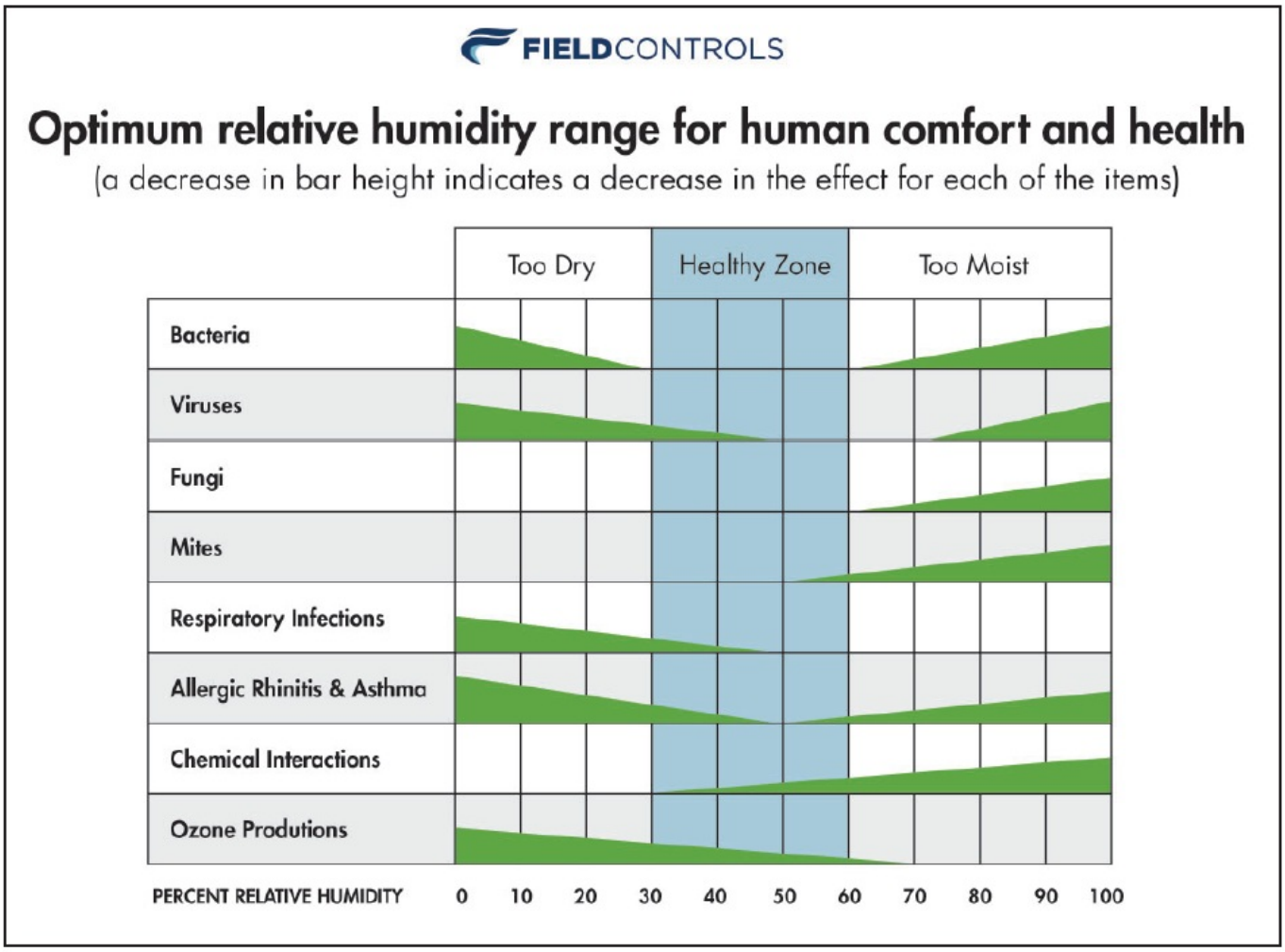


FIGURE 2: Optimum relative humidity range for human comfort and health

SPECIFICATIONS

MODEL	FC-120DH-2	FC-85DH-2	FC-60DH-2
Capacity @ 80°F/60%RH:	120 pints per day	85 pints per day	60 pints per day
Capacity @ 73°F/60%RH:	77.15 pints per day	53.0 pints per day	44.5 pints per day

Power Supply	115V/60Hz	115V/60Hz	115V/60Hz
Outlet Requirement	15 Amp, 3 prong, GFCI	15 Amp, 3 prong, GFCI	15 Amp, 3 prong, GFCI
Operating Temp Range	33-105¯F	33-105¯F	33-105¯F
Operating Relative Humidity Range	36%-90%	36%-90%	36%-90%
Airflow @ 0.0” SP	225 CFM	201CFM	196 CFM
Airflow @ 0.2” SP	190 CFM	162 CFM	156 CFM
Airflow @ 0.4” SP	150 CFM	106 CFM	102 CFM
COP	1.86 L/kWh	1.87 L/kWh	1.88 L/kWh
Refrigerant	R410A	R410A	R410A
Amperage Usage	7.6 Amps	5.3 Amps	4.05 Amps
Sound Level	60 dBa	59 dBa	59 dBa
Dimensions LxWxH	23.75” x 14” x 16”	21.7” x 12” x 12”	21.7” x 12” x 12”

HOW THE DEHUMIDIFIER WORKS

Field Controls dehumidifiers use an integrated humidistat to monitor the conditioned space.

When relative humidity goes above the selected set point, the dehumidifier will energize. A blower inside the dehumidifier draws the air into the cabinet where it passes through a washable prefilter and a Merv 10 filter. The air is then drawn across an evaporator coil, which is cooler than the dew point, causing the moisture to condense on the coil and drip down to the pan and out the drain. The air is then moved over another coil to be reheated before it is sent back into the home. The air leaving the dehumidifier will be warmer and drier than the air that entered.

DEHUMIDIFIER LOCATION

- Electrical service access and drain cleaning will require the removal of the side panel. Allow applicable space for service on the side of the unit.
- Filters can be accessed from either side of the unit. Allow enough space for the filter to be removed and reinstall the filter.
- If the unit is going to be in area not readily accessible (Attic or Crawl Space) consider a control such as the Field Controls Remote Control Model WHD1-RCK which can be mounted in the living space and wired to the unit.
- The area where the dehumidifier is located should be sealed with a vapor barrier.
- If the unit is installed in a crawl space, all vents should be sealed.
- For proper ventilation, do not position the inlet or discharge against a wall. The inlet needs a minimum of 12″ clearance, and the discharge requires a minimum of 36″ clearance.
- For the best air diffusion, install the unit so that a side panel faces the wall.
- Field Controls dehumidifiers are only intended for operation when the unit is upright and level with the feet on the ground (unless using a Field Controls Hanging Kit).

Applications Above a Finished Space

- ALWAYS ADD A CONDENSATE PAN UNDER THE DEHUMIDIFIER WHEN LOCATING IT ABOVE A FINISHED SPACE. Make sure to adhere to local codes regarding draining of the condensate pan.
- If a condensate pump is needed, make sure the pump is located inside the pan as well.
- Install a float switch in the condensate pan and use the overflow wires/terminals on the condensate pump to turn off the dehumidifier if overflow should occur. See Wiring Diagram.

SET UP – ALL APPLICATIONS

1. Place the dehumidifier on a level surface.
    - a. Do not place the unit directly on the vapor barrier.
    - b. NOTE: If the unit has been turned or flipped so that the compressor did not remain upright, place the unit on level surface and wait a minimum of 2 hours before proceeding.

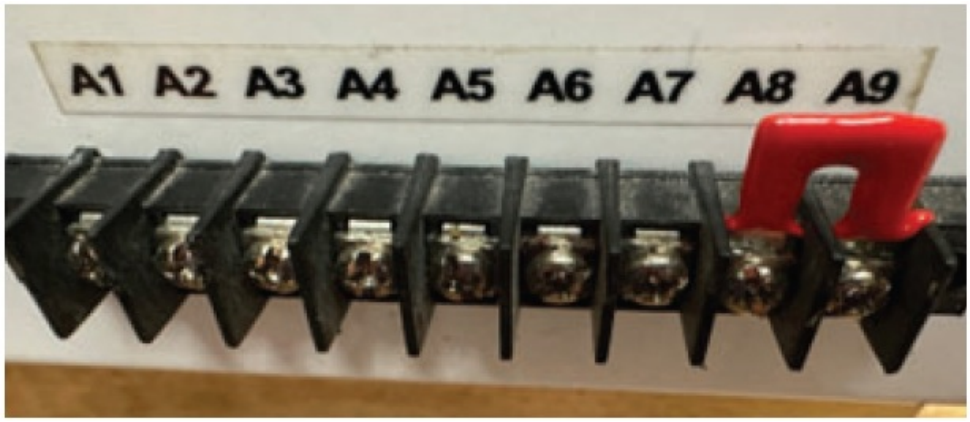
2. Duct Collars
    - c. Attach duct collars to inlet and outlet of dehumidifier with included screws. While not needed for freestanding installation, they can be used to help reduce the sound level.
    - d. Maximum recommended combined duct length (Inlet and Outlet) is 10′.
    - e. Note that for 60 / 85-pint units there will only be 6 screws provided as 2 can be reused from the unit.
3. Set up the drain line.

    The drain line should be routed to a suitable drain option.
    - g. THE DRAIN MUST FLOW DOWN WITH NO LOOPS OR DIPS
    - h. Recommended Drain Option- Transition to PVC Pipe
    - i. Cut a piece of 3/4″ OD PVC that is approx. 6″ long.
    - ii. Attach a PVC + elbow to a 3/4″ OD piece of PVC to drain. Keep the length of the PVC as short as possible.
    - iii. Insert the open end of the dehumidifier drain tube into a 6” piece of PVC so that it does not extend into the elbow fitting.
    - iv. For a proper flow, a minimum downward slope of
    - 1” per 10’ run is required.
    - v. Support the PVC tubing so that it maintains a smooth downward flow to drain.

4. Plug the unit into a dedicated 15-amp GFCI-protected outlet.
5. Auxiliary Terminals:
    - i. Auxiliary Terminals A5/A6 (Normally Open Accessory)
    - i. The A5/A6 on the terminal strip can be used as a safety switch for an external float switch or condensate pump with Normally Open Contacts.
    - ii. If an E4 error occurs immediately, remove the wires from the terminal strip and unplug the dehumidifier. Plug in the dehumidifier with nothing attached to the terminal strips. If E4 occurs again, contact Field Controls customer support. If not,

see step three.

- iii. Double-check that the external device is intended to be Normally Open. You may need to switch to Normally Closed (see below). Note that you may need to unplug the unit to reset the error code.
- j. Auxiliary Terminals A8/A9 (Normally Closed Accessory)
- i. The A8/A9 on the terminal strip can be used as a safety switch for an external float switch or condensate pump with Normally Open Contacts.
- ii. If an E4 error occurs immediately, remove the wires from the terminal strip and unplug the dehumidifier. Plug in dehumidifier with nothing attached to the terminal strips. If E4 occurs again, contact Field Controls customer support. If not, see step three.
- iii. Double-check that the external device is intended to be Normally Open. You may need to switch to Normally Closed (see below). Note that you may need to unplug the unit to reset the error code.



- IV. Double-check that the external device is intended to be Normally Closed. You may need to switch to Normally Open (see above). Note that you may need to unplug the unit to reset the error code.

SET UP – HVAC SYSTEM

This dehumidifier will automatically detect external controls. It is NOT necessary to adjust the dehumidifier display panel or control board. Once connected to the external controls, the dehumidifier buttons will no longer be active.

NOTE: Check local building codes before connecting the dehumidifier to the HVAC system.

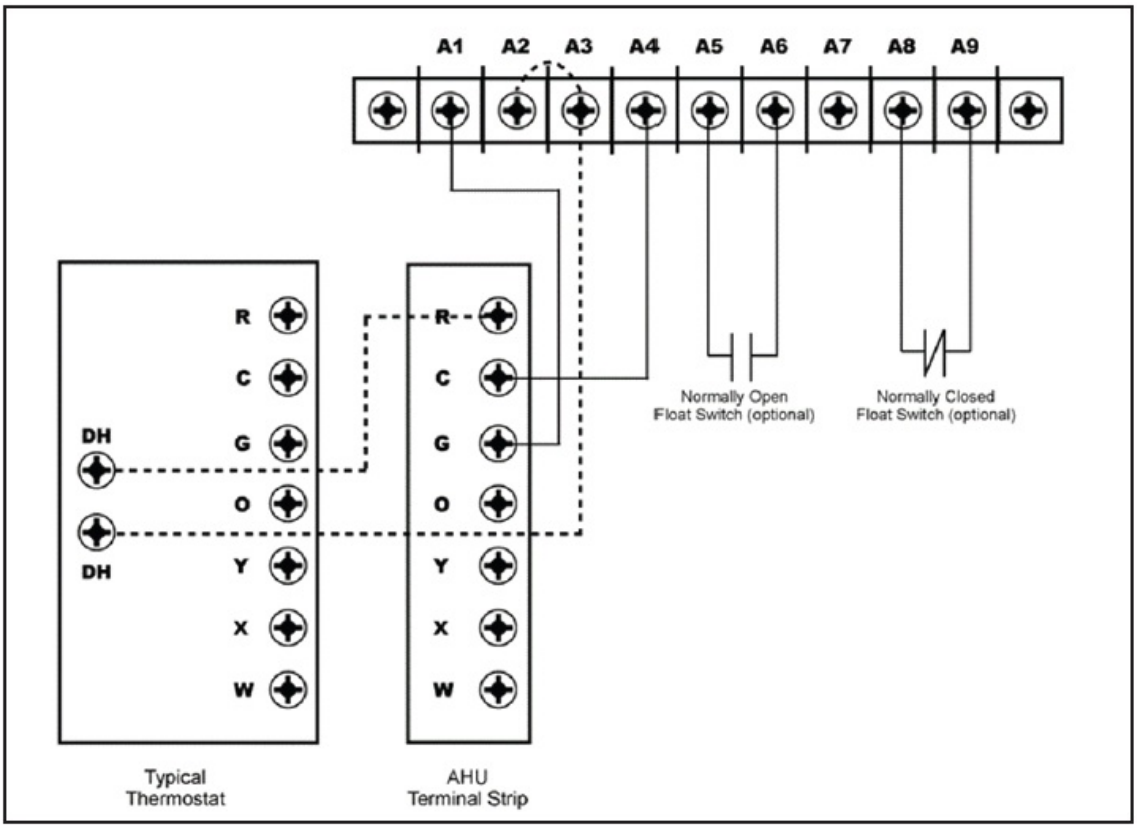


FIGURE 3: WIRING DIAGRAM

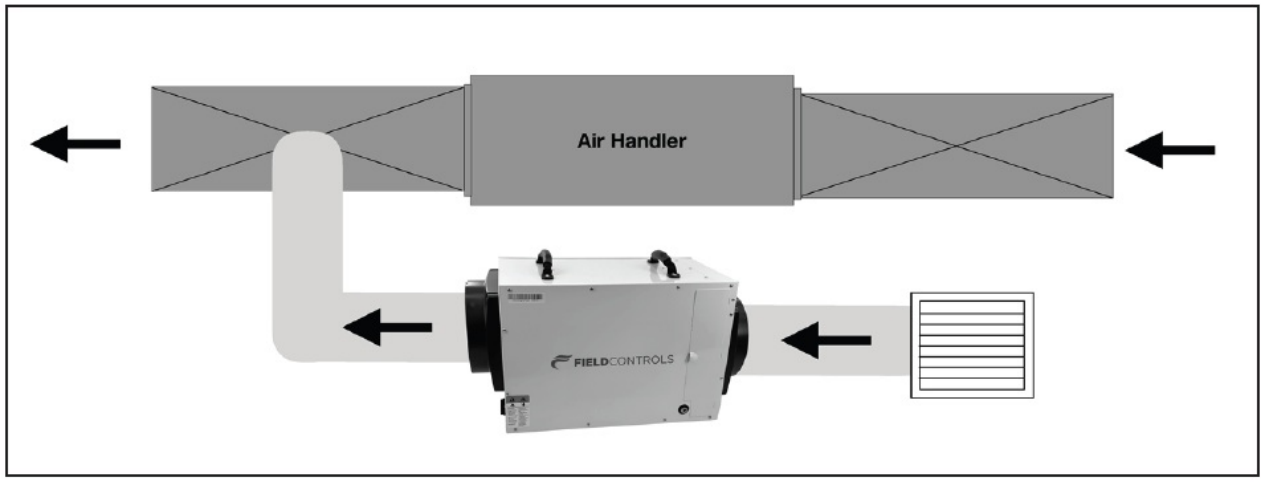
1. Connect controls per diagram on the previous page (Figure 3).
2. A 24VAC input to terminal #A3 and #A4 from the HVAC controller will turn the machine “on”. The power light on the dehumidifier display will light up and the two-character LED display will read “CC” for central control. The unit will run until the HVAC controller has met the desired humidity level.
3. When the humidity level is satisfied, the HVAC controller will remove the external 24VAC supply signal. This will cause the power light on the dehumidifier display to turn off, and the 2-character display will now read ” – – “
4. If a power outage occurs, the dehumidifier will return to the state it was in and cycle on and off based on the 24VAC external control signal.
5. If desired, the dehumidifier can turn the HVAC fan on. To do so, install a jumper on the dehumidifier terminal strip between #A3 and #A2. Connect terminal #A1 back to the HVAC controller as shown on the previous page (Figure 3). The fan will come on whenever the dehumidifier is running.

HVAC CONNECTION OPTIONS

1. Dedicated Return Application The dehumidifier is connected to either the supply side or the return side of the air handler (supply side shown).

NOTES:

- The maximum combined length of ducting for the dehumidifier is 10′.
- The air handler fan should be set up to run while the dehumidifier is running.



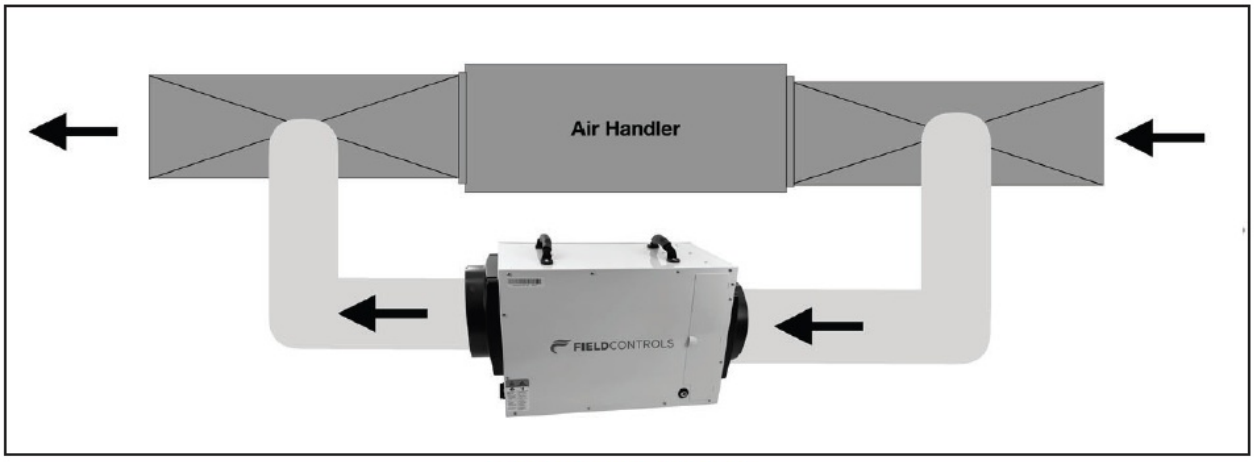
DEDICATED RETURN APPLICATION

2. Bypass Application

   Some air bypasses the air handler to be conditioned by the dehumidifier.

   NOTES:

   - For this method, you may need a damper to prevent backflow.
   - The maximum combined length of ducting for the dehumidifier is 10′.
   - The air handler fan should be set up to run while the dehumidifier is running.



BYPASS APPLICATION

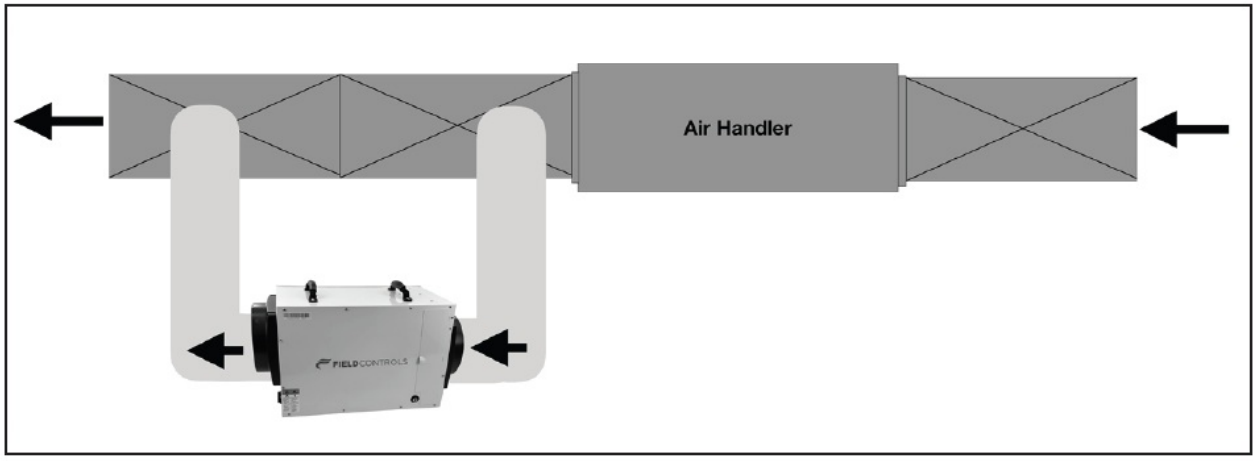
3. Injection Application

   Both sides of the dehumidifier are connected to the same side of the air handler (either supply or return).

   With this setup, a damper may be needed to prevent backflow.

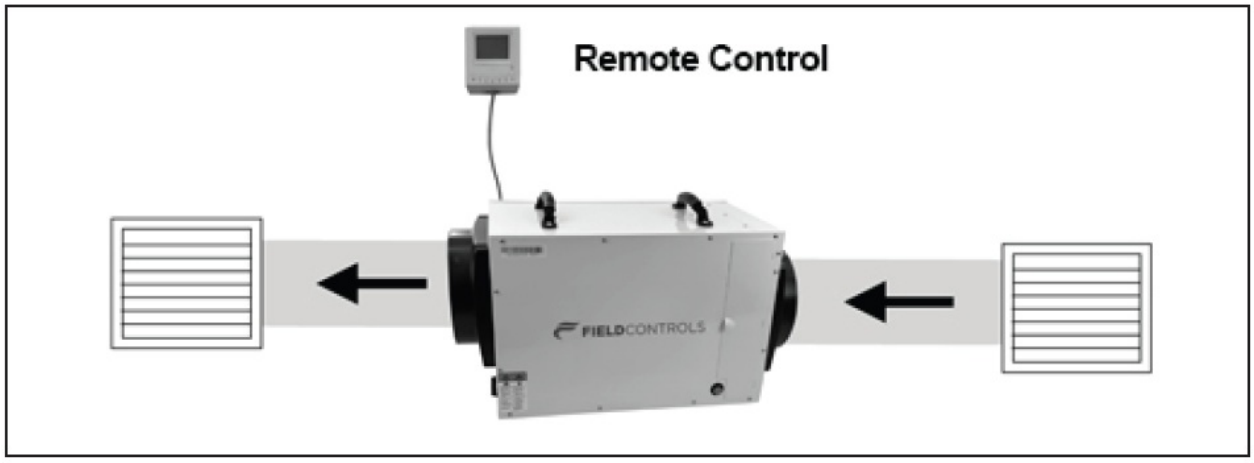
   NOTES:

   - For this method, you may need a damper to prevent backflow.
   - The maximum combined length of ducting for the dehumidifier is 10′.
   - The air handler fan should be set up to run while the dehumidifier is running.



INJECTION APPLICATION

4. Dedicated Return to Dedicated Supply – Remote Control. Independent ducting should use a Field Controls Wired Remote (WHD1-RCK). See How to Use a Remote Control instructions. This is useful if:
    1. Install a dehumidifier in one room with the conditioned air ducted into a second room that con- tains the remote. Select the ducted option using the “M” (mode) button on the remote.
    2. Install a dehumidifier in the crawl space or basement and control the dehumidifier from a different room. Select the dehumidifier sensor option using the “M” (mode) button on the remote.



DEDICATED RETURN TO A DEDICATED SUPPLY APPLICATION

5. Standalone Installation

    It is also possible to use the dehumidifier without any ducting.

OPERATION INSTRUCTIONS

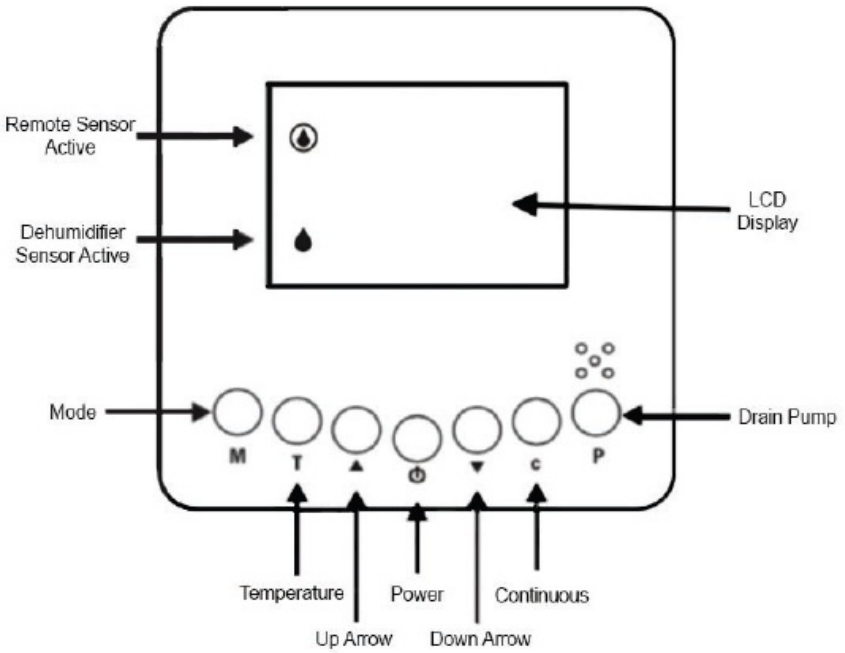
- **NOTE:** The Fan will continue to operate for 1 minute after the unit has shut off. DO NOT DISCONNECT
- THE POWER CORD TO FORCE THE UNIT TO STOP.
- **NOTE:** During normal operation, a dehumidifier will automatically drain due to gravity.

- **NOTE:** To move or store the machine, wait at least 10 minutes to allow the unit to completely defrost. Once defrosted, lean the dehumidifier towards the drain to ensure it is completely dry.

How to Use a Remote Control

1. On / Off Power Button: Press the on/off button, and the machine will start running. Press the button again to turn the machine off.
2. Up / Down Arrows
   Use the Up and Down arrow buttons to adjust the humidity level set-point. (typically, 50-55%)
3. Mode Button
   Use the Mode button to switch between dehumidification and a ducted application.
4. Temperature Button
   The T button changes the temperature reading on your remote. The remote comes from the factory in Celsius. Press this button once, and it will switch to Fahrenheit.
5. Continuous Button
   Press this button to switch the unit into continuous mode. “Cont” will appear on the display to indicate continuous mode.
6. Drain Pump – Not used for these models.

NOTE: Symbols shown in the figure will only appear when the dehumidifier is powered ON.



Using The Dehumidifier Display

NOTE: While connected to the HVAC system, the display functions on the dehumidifier will not work.

1. Power Key
    - a. Use this button to turn the dehumidifier on and off.
    - b. Press once to turn the machine on. You will hear two beeps, and the Power light will illuminate green (solid or flashing, depending on mode).
      Press the power button a second time, and you will hear one beep as the machine shuts down. Note that there is a 1-minute fan delay.
2. Arrow Buttons
    - a. Use the up and down arrows to set the desired humidity setpoint on the display screen.
    - b. The setpoint can be any number between 36% – 90%. When the indoor humidity is higher than the setpoint, the unit will operate.
    - C. Keep in mind that the displayed humidity levels are approximate (+/- 5%)
3. Continuous Mode
    - a. To set the unit to run continuously, regardless of humidity, simply use the down arrow to set the humidity below 36%.
    - b. The continuous light will illuminate green, and the display will show “CO”.
    - C. To switch back to normal humidistat operation, use the arrow keys to move the set point above 36%

Indicator Lights on the Display

1. Humidity Display Screen
    - a.The display screen has two functions:
    - i.When the unit is powered on, it shows the humidity of the space
    - ii. When setting the desired humidity level, the screen will show the set point. After a brief delay, it will revert to the current humidity of the space.
2. Power Indicator Light Power
    - a. This light indicates that the unit is properly powered on and ready to operate.
    - b. Always make sure the unit is “off” prior to performing any service, unless

otherwise indicated.

- C. If the humidity is above the setpoint, the light will be solid green and the machine will operate.
- d.If the humidity is below the setpoint, the unit will be in standby mode, and the light will be flashing.

3. Continuous Mode / Auto Defrost Light 

    - a. When the light illuminates green, it indicates that the dehumidifier is set to continuous operation mode.
    - b. When the light illuminates red, it means the unit is in auto defrost mode and clearing the evaporator coils of any ice buildup.
4. Compressor Light 

    - a. When the light illuminates red, it indicates the compressor has been initiated but is currently warming up.
    - b. Once the light switches to green, it means the compressor is currently in working status.

MAINTENANCE

Warning: Always unplug the dehumidifier before performing any maintenance.

Cleaning Exterior Shell

- Use a soft, damp cloth to clean the exterior of the unit. Do not use any soap or solvents.

Coil Maintenance

- At least once per year, spray the coils with an approved coil cleaner. The coil cleaner should be a self-rinsing, foaming cleaner, such as WEB® Coil Cleaner.

Filter Maintenance

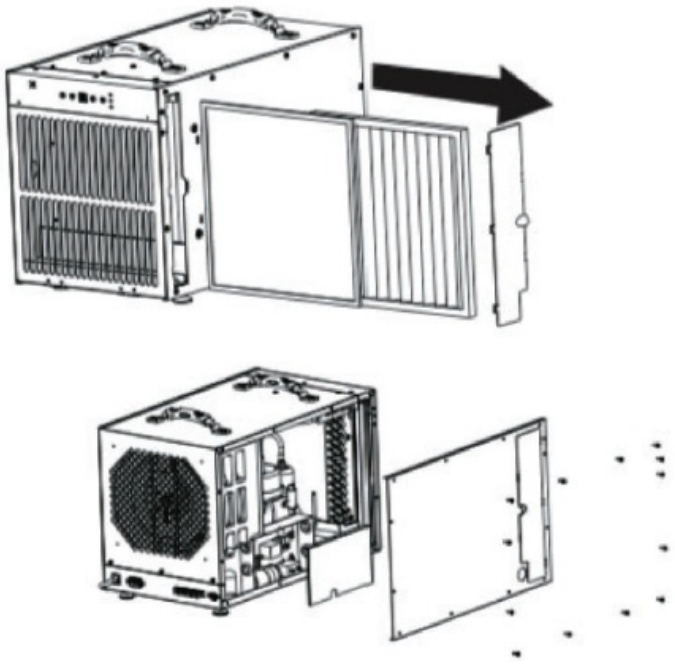
1. Prefilter: Vacuum or wash with warm water (no soap)
2. MERV-10 / HEPA / Carbon: Check at least once per year and replace, as needed.

Electrical Access

1. Remove the screws on the side panel.
2. Remove the screw on the control board cover.

Cleaning the Gravity Drain

1. Unplug the dehumidifier.
2. Mix a 16-ounce solution of vinegar (4 ounces white vinegar + 12 ounces water) or bleach (1 ounce bleach + 15 ounces water)
3. Remove the filters so you have access to the drain tray.
4. Pour the cleaning solution into the drain tray at the base of the coils. If any cleaning solution gets on the coils, flush with water.
5. Allow the solution to soak for 15 minutes.
6. Pour in 32 ounces of clean water to flush out the drain line.



Dehumidifier Storage

NOTE: To move or store the machine, wait at least 10 minutes to allow the unit to completely defrost.

Once defrosted, lean the dehumidifier towards the drain to ensure it is completely dry.

If the unit will be stored for an extended period, complete the following steps:

1. Turn off the unit and allow it to dry.

2. Wait at least 10 minutes to allow the unit to completely defrost.
3. Lean the dehumidifier towards the drain to ensure it is completely dry.
4. Wrap and secure the power cord.
5. Cover the filter mesh.
6. Store in a clean, dry space.

TROUBLESHOOTING

SYMPTOM	CAUSE	SOLUTION
Display is Blank	Poor Connection	Make sure the power cord is plugged in
	Power Outage	Reset power
No Airflow	The filter is Dirty	Clean the filter(s)
	Air Inlet or Outlet is Blocked	Clear the blockage
E1 Error Code	Humidity Sensor or Communication Error	Check that the sensor wire is connected at both ends. If no issue, the sensor may be faulty
LO Error Code	The Room Temperature is below 33°F	Increase room temperature so it’s within the operating range. If the issue persists, check the sensor
HI Error Code	The Room Temperature is above 105°F	Decrease the room temperature so it’s within the operating range. If the issue persists, check the sensor

Tripped GFGI Outlet or Breaker	Not a Dedicated Circuit	Identify all sources connected to an outlet and confirm the source of the trip. If it is dehumidifier, contact technical support. If not, move dehumidifier to dedicated circuit for future use.
	Defective GFCI	Replace outlet
	Dirt, Dust, or Moisture on Outlet	Clean or replace an outlet
	Lightning or External Electrical Surge	Reset or replace breaker/GFCI, as needed

SPARE PARTS

PART #	MODEL	DESCRIPTION	FC-60DH	FC-85DH	FC-120DH
602609204	SM10C	10” Round Return Supply Collars (set of 2) Small	X	X	–
602609205	LG10C	10” Round Return Supply Collars (set of 2) Large	–	–	X
602609206	WHD1-RCK	Remote Control Kit	X	X	X
602609207	WHD2-HK	Hanging Kit Assembly	X	X	X
602609701	SM10PF	WHD Prefilter Replacement Small	X	–	–

602609702	LG10PF	WHD Prefilter Replacement Large	–	–	X
602609703	SMM10	WHD MERV10 Filter Replacement Small	X	X	–
602609704	LGM10	WHD MERV10 Filter Replacement Large	–	–	X

This manual may be downloaded and printed from the Field Controls website (www.fieldcontrols.com)

WARRANTY

- For warranty information about this or any Field Controls product, visit: www.fieldcontrols.com

- Field Controls Technical Support 1.800.742.8368 fieldtec@fieldcontrols.com
- Phone: 252.522.3031
- Fax: 252.522.0214 www.fieldcontrols.com

FAQ

- **Q: Can I use the dehumidifier without a filter?**

- **A:** No, it is essential to use the washable pre-filter and Merv 10 filter to ensure proper operation and efficiency of the dehumidifier.

- **Q: How often should I clean the filters?**
  - **A:** Filters should be checked regularly and cleaned every 2-4 weeks, depending on usage, to maintain optimal performance.
- **Q: What should I do if the dehumidifier overflows?**
  - **A:** If an overflow occurs, turn off the dehumidifier immediately and check the condensate pan and drain system for any blockages or issues.

Documents / Resources

	FIELD CONTROLS FC-60DH-2 Controls Dehumidifier [pdf] Installation Guide FC-60DH-2, FC-85DH-2, FC-120DH-2, FC-60DH-2 Controls Dehumidifier, FC-60DH-2, Controls Dehumidifier, Dehumidifier

References

- User Manual

FIELD CONTROLS

Controls Dehumidifier, Dehumidifier, FC-120DH-2, FC-60DH-2, FC-60DH-2 Controls Dehumidifier, FC-85DH-2, FIELD CONTROLS

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