eControls

Model DFAC
Fresh Air Ventilation Control
Installation Manual

DFAC Ver200 Dec 2025

DESCRIPTION

The DFAC controls fresh air operation in multi-family installations in compliance with ASHRAE 62.2. The minutes per hour of fresh air operation, high and low temperature operating limits and relative humidity (RH) limit for operation can be displayed and set using the keys.

The DFAC tries to fulfill the minutes of fresh air each hour during heating, cooling or fan calls. If the fresh air minutes cannot be fulfilled during calls, the control opens the damper and activates the equipment fan and/or an optional boost fan.

The RHT is an RH and temperature sensor installed in the damper so it detects outside air RH and temperature without having to run the equipment fan or boost fan to measure the temperature and RH. The RHT uses a 7-foot Plug&Play cable furnished with the sensor to connect to the DFAC control.

The Damper is installed per ASHRAE 62.2 to draw outside air into the return and is connected to the DFAC control with a 7-foot Plug&Play cable provided with the Damper. Longer cables can be provided if required.

Model DFAC
Ventilation Control

Model R80FAD-XX
Fresh Air Damper with
RHT RH/Temperature
Sensor Installed.
Sold Separately.

SPECIFICATIONS

Minutes of Fresh Air per Hour
Selectable from 0 to 60 minutes. When set to 60 minutes, fresh air operation is continuous.

Low Outdoor Temperature Limit
Selectable from 40 to 70F. Fresh air operation is terminated if outdoor temperature is lower than limit.

High Outdoor Temperature Limit
Selectable from 70 to 100F. Fresh air operation is terminated if outdoor temperature is higher than limit.

High Outdoor RH Limit
Selectable from 30 to 90%. Fresh air operation is terminated if outdoor RH is higher than the limit.

HVAC Fan Operation
The HVAC fan is activated whenever the thermostat G terminal is active (24VAC). The HVAC fan and/or the boost fan is activated when the Minutes/Hour of fresh air operation cannot be fulfilled during heating, cooling or fan calls.

Boost Fan Operation
An optional Boost fan can be installed and activated with the HVAC equipment fan or in lieu of the equipment fan.

Inline Heater Operation
An optional inline heater can be installed and activated during fresh air operation when the outdoor temperature drops below the temperature limit set.

Power
24VAC, 2VA plus 2VA when dampers are positioning. Damper positions in about 4 seconds and uses only 1VA when holding position.

Mechanical
4.00 x 4.00 x 1.20 inches.

Operating Temperature
-20 to 140F.

⚠ ATTENTION INSTALLER

Thermostat Wiring
Note that the G wire from thermostat is wired to the GIN terminal on the DFAC (not to the equipment G terminal).

The thermostat terminals R, C, W or E, and Y are wired to the equipment terminals. The DFAC terminals R, C, W, Y and GOUT are also wired to the equipment terminals. See Page 3.

Factory Settings

Fresh Air Minutes/Hour	30 minutes
High Temperature Limit	80F
Low Temperature Limit	50F
High RH Limit	65%
Heater Temperature Limit	50F
Fresh Air Operation during Heating or Cooling calls	Equipment fan and damper activated, Optional Boost fan and heater Off.
Fresh Air Operation when No Heating or Cooling calls	Equipment fan and damper activated, optional Boost fan and heater Off.

FEATURES

DFAC snaps onto subbase.

Backlit, LCD displays DFAC status and option settings.

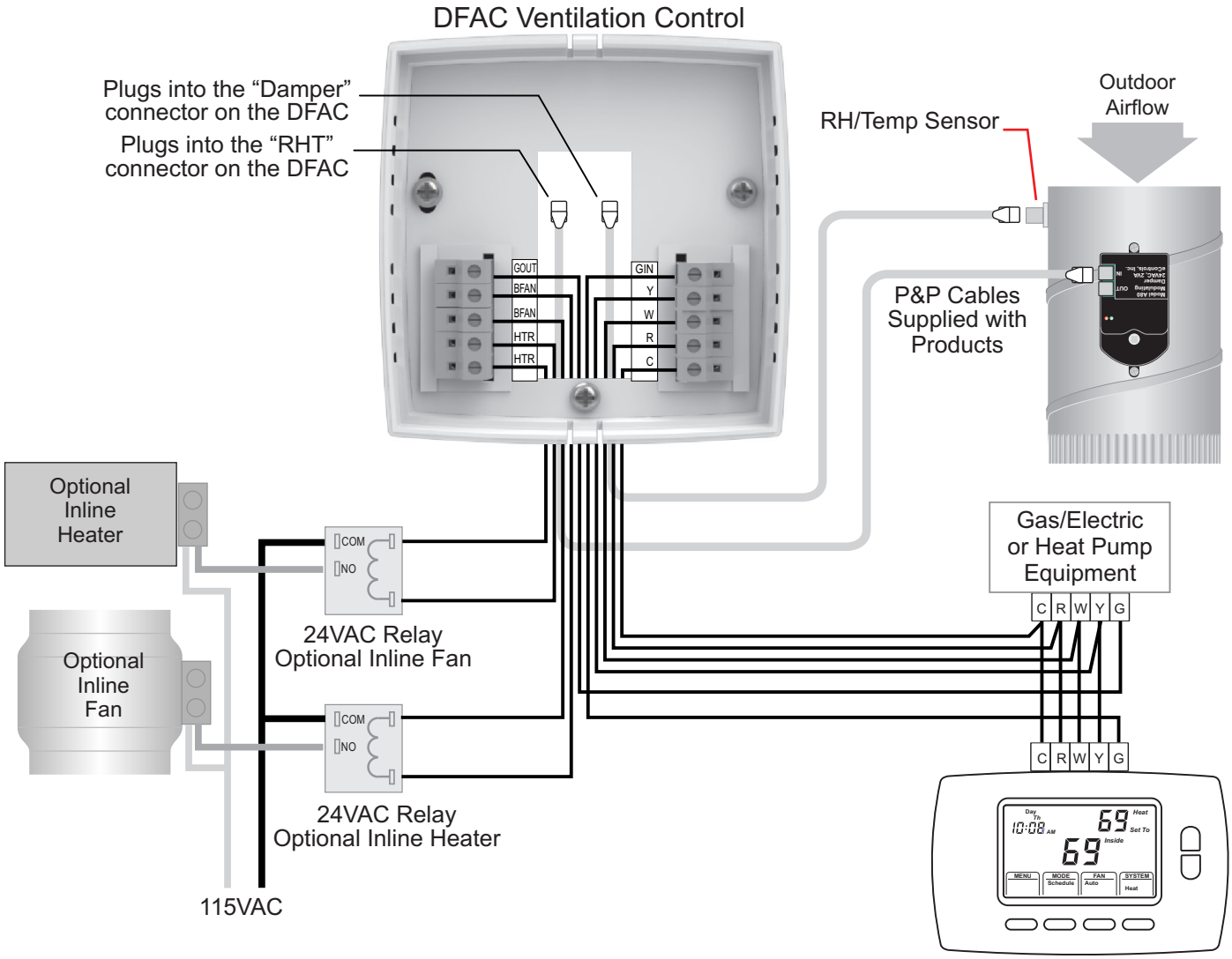
Display key is used to display outdoor temperature and RH, option settings and minutes of fresh air remaining for the hour.

Up and Down keys used to change options and limits.

Menu key used by Installer to set options and start tests.

On/Off key used to turn fresh air operation on or off.

WIRING DIAGRAM

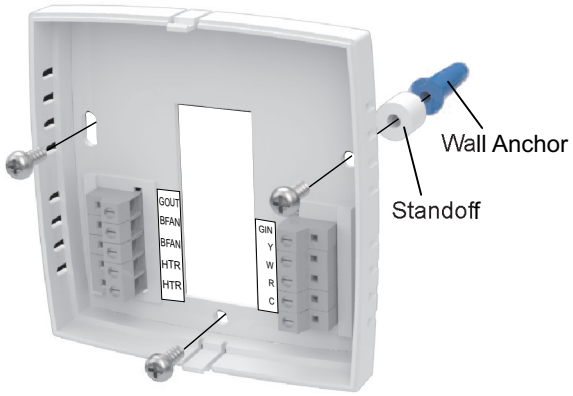


⚠ CAUTIONS

- Before installing the DFAC, turn off all power to the HVAC system.
- Read and follow all instructions carefully.
- Read entire manual before installing products.
- Follow all local electrical codes during installation. All wiring must conform to local and national electrical codes.
- Use cautions when mounting components to surfaces that may have concealed wiring beneath the surface.
- When servicing products or accessing products, turn off all power to these items.

DFAC Subbase Installation

The DFAC should be installed near the HVAC equipment. Remove the cover and install the DFAC subbase on a wall using the included screws, standoffs and anchors.



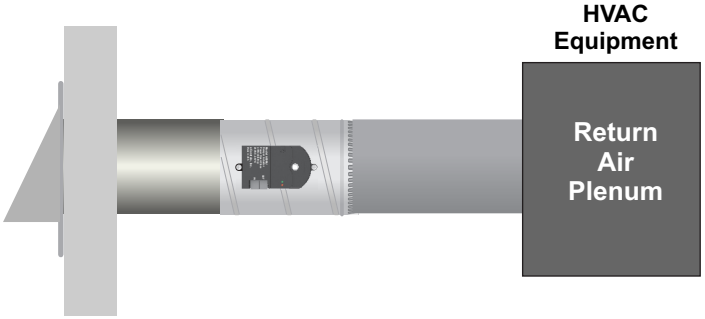
If the wiring is in the wall then install the subbase without the standoffs.

RHT Sensor Installation

The RHT has been installed in the side of the Damper exposed to outside air so it senses the outdoor humidity and temperature without having to activate the equipment or optional boost fan.

Air Intake Damper Installation

The R80FAD damper should be installed per ASHRAE 62.2 and local codes. When the Damper is opened, the equipment fan and/or an optional boost fan draws fresh air into the equipment return air.



Optional Air Discharge Damper Installation

For balanced ventilation, a second damper, Model R80FAD-XX, can be installed to discharge air. Check ASHRAE 62.2 and the local codes for installation instructions.

Wiring Thermostat to Equipment

The thermostat is wired to the equipment with one important exception. The G wire from thermostat is wired to the GIN terminal on the DFAC (not to the equipment G terminal). The DFAC terminals R, C, W, Y and GOUT are also wired to equipment terminals as shown below.

For Gas/Electric Equipment

Thermostat	Equipment	DFAC	
R	R	R	Provides 24VAC to DFAC
C	C	C	Provides 24VAC to DFAC
W or W1	W or W1	W	So DFAC can detect Heating calls
Y or Y1	Y or Y1	Y	So DFAC can detect Cooling calls
G	No connection	GIN	So DFAC can detect Fan calls
No connection	G	GOUT	So DFAC can detect Fan calls

Whenever the DFAC detects 24VAC on GIN, it activates GOUT.

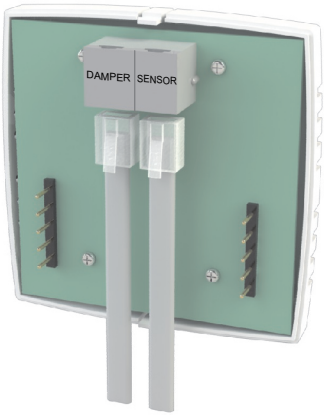
For Heat Pump Equipment

Thermostat	Equipment	FAC1	
R	R	R	Provides 24VAC to DFAC
C	C	C	Provides 24VAC to DFAC
E	E	W	So DFAC can detect Emergency Heat calls
Y or Y1	Y or Y1	Y	So DFAC can detect Heating and Cooling calls
G	No connection	GIN	So DFAC can detect Fan calls
No connection	G	GOUT	So DFAC can detect Fan calls

Whenever the DFAC detects 24VAC on GIN, it activates GOUT.

Connecting the Damper and RHT to the DFAC

Use the Plug&Play cables provided with the Damper to connect the Damper IN connector to the DFAC connectors.



Connecting Optional Discharge Damper and DFAC

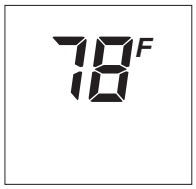
Use the Plug&Play cable provided with the optional Damper to connect the optional damper IN connector to the air intake Damper OUT connector. Both dampers will open during fresh air operation.

Using the ON/OFF Key

Pressing the ON/OFF key turns fresh air operation on or off.

Using the DISPLAY Key

The DFAC normally displays the minutes of fresh air operation remaining for the hour.

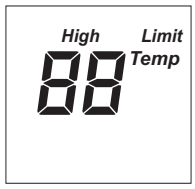


Press the DISPLAY key to display the outdoor temperature.

Press the DISPLAY key again to display the outdoor humidity. Pressing the Display key again will return to the normal display.

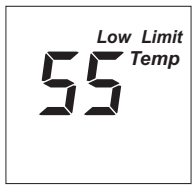
Using the MENU Key

To access the Installer settings, press and hold the MENU key for 7 seconds and the High Temperature limit is displayed.



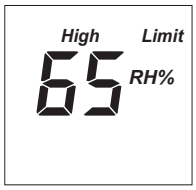
High Temperature Limit

Use the UP/DOWN keys to change the high outdoor temperature limit or press the MENU key for the next option.



Low Temperature Limit

Use the UP/DOWN keys to change the low outdoor temperature limit or press the MENU key for the next option.



High RH Limit

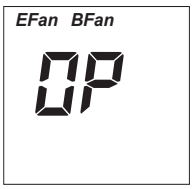
Use the UP/DOWN keys to change the high outdoor RH limit or press the MENU key for the next option.

Fresh Air Operation Minutes/Hour

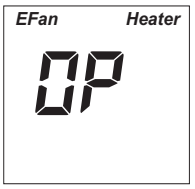
Use the UP/DOWN keys to change the minutes of fresh air each hour or press the MENU key for the next option.

Fresh Air Operation during Heating/Cooling Calls

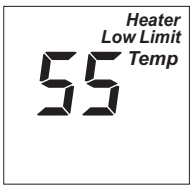
Select if the optional Boost fan and Inline Heater is activated during fresh air operation when a heating or cooling call is active. The HVAC equipment fan is activated by the thermostat during heating or cooling calls. The optional Boost fan and Inline Heater are factory set to Off.



While “BFan” is blinking, press the UP key to turn the Boost Fan on during fresh air operation or press DOWN to turn it off. Press the MENU key for the next option.



While “Heater” is blinking, press the UP key to turn the Inline Heater on during fresh air operation or press DOWN to turn it off. Press the MENU key for the next option.



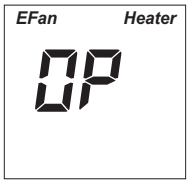
If Heater operation is selected, use the UP/DOWN keys to select the outdoor temperature limit for heater operation. Press the MENU key for the next option.

Fresh Air Operation When No Calls Active

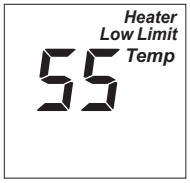
Select if the HVAC equipment fan, optional Boost fan or optional Inline Heater is activated during fresh air operation when no heating or cooling call are active. The HVAC equipment fan is factory set to On and the optional Boost fan and Inline Heater are factory set to Off.

While “EFan” is blinking, press the UP key to turn the HVAC equipment fan (EFan) on during fresh air operation or press DOWN to turn it off. Press the MENU key for the next option.

While “BFan” is blinking, press the UP key to turn the Boost fan on during fresh air operation or press DOWN to turn it off. Press the MENU key for the next option.



While “Heater” is blinking, press the UP key to turn the Inline Heater on during fresh air operation or press DOWN to turn it off. Press the MENU key for the next option.



If Heater operation is selected, use the UP/DOWN keys to select the outdoor temperature limit for heater operation. Press the MENU key to return to normal operation.

Testing the CFM Intake

The CFM intake can be measured during heating or cooling calls or when no calls are active. The equipment fan and option Boost fan will be activated based on the Installer settings. Set the Minutes/Hour of fresh air to 60 minutes so fresh air operationtarts immediately.

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