

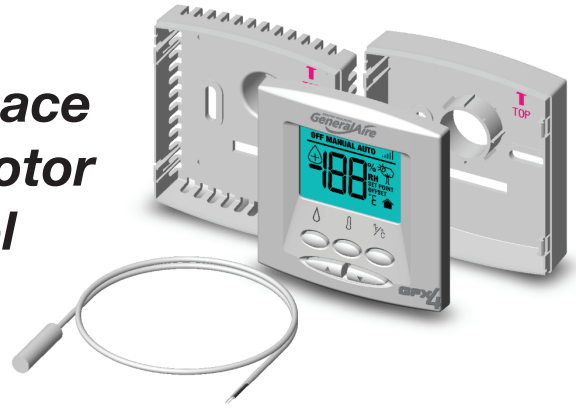
# INSTALLATION AND OPERATING INSTRUCTIONS

# GFX4



BREATHE HEALTHIER™  
**GeneralAir®**

**With Furnace Blower Motor Control**



## About the GFX4 Digital Humidistat

In Automatic Mode the GFX4 will adjust the humidity in your home based on the outdoor temperature, lowering the humidity in cold weather to reduce condensation. The GFX4 can operate in Manual Mode to control humidity to a specific relative Humidity. In most homes, Automatic operation is preferred to reduce condensation on windows and within the structure. Manual mode is necessary where the outdoor temperature sensor cannot be installed. Manual mode may be desirable where valuable artwork, instruments or woodwork demand constant humidity. The GFX4 has a dry contact for fan control (FAN1, FAN2 terminals). The LCD Display is backlit and easy to read. Operation and Installation are simple. The GFX4 can be mounted on an interior wall or on the return duct of the HVAC System.

## ⚠ WARNING!

This Humidistat must be installed by a Qualified Technician. Always **TURN OFF POWER TO THE HVAC SYSTEM PRIOR TO INSTALLING OR SERVICING** the Humidifier or Humidistat. Improper operation can result in over or under humidification. Over humidification can result in condensation, structural damage or mold. Condensation within a building's structure can cause a loss of structural strength. Condensation can also enable mold and mildew growth resulting in personal injury and damage to building structure and contents. Older and poorly insulated structures cannot withstand the same humidity levels as newer well insulated buildings. Read these instructions carefully. This humidistat requires a 24 volt, AC power supply. Improper voltage can cause malfunction or damage to the control. Do not run outdoor sensor wires on or near line voltage wires. The technical specifications for this product and the contents of the user manual are subject to change without notice.

## Specifications

Voltage 20-30 VAC, 60Hz.  
Switching Load 1 amp max. 30 volt  
Outdoor Sensor max. 200 ft. 61m.

### Auto Mode

Control Range 10%-60% RH.  
Outdoor Temp. -10°F, -23°C min.

### Manual Mode

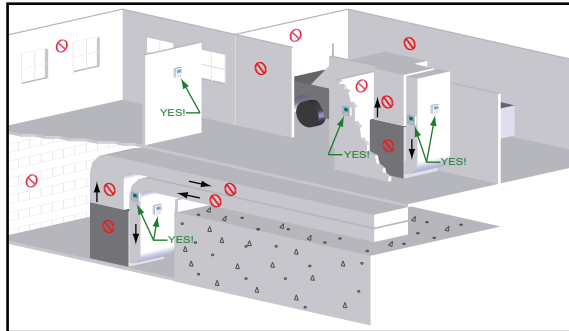
Control Range 10%-75% RH

Accuracy -RH (77°F, 25°C) 20%-80% ±4%RH  
Accuracy Drift Per Year ±0.5%RH  
Accuracy Indoor Temp. ±2°F, ±1°C  
Accuracy Outdoor Temp. ±2°F, ±1°C

Resolution, Temp. or RH 1° or 1%.

Relay Close Setting - 1%RH  
Relay Open Setting +1%RH

## GFX4 Locations



## Outdoor Sensor Location

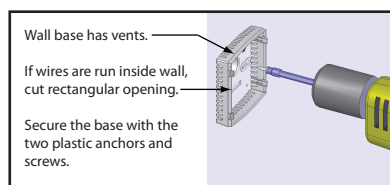
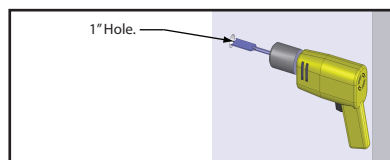
### YES!

North Wall  
East Wall  
Over Snow Line  
Inlet of Air Intake  
Less than 200'  
from humidistat.

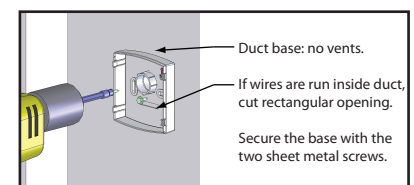
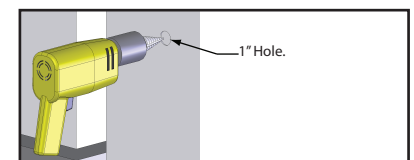
### NO!

South Wall  
West Wall  
Below Snow  
Deep in Intake  
More than 200'  
from humidistat.

## Wall Installation

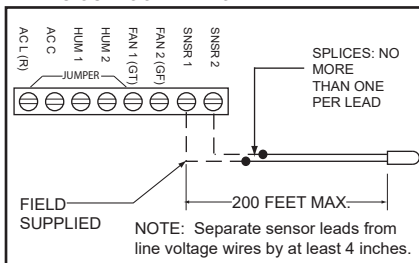


## Duct Installation

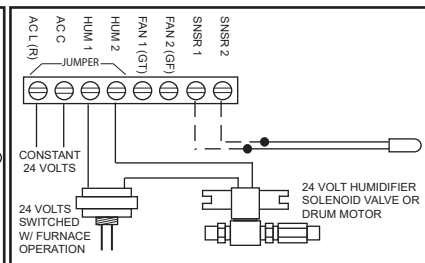


# Wiring

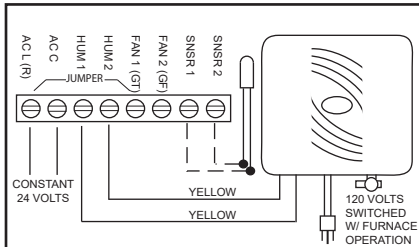
## WIRING OUTDOOR SENSOR



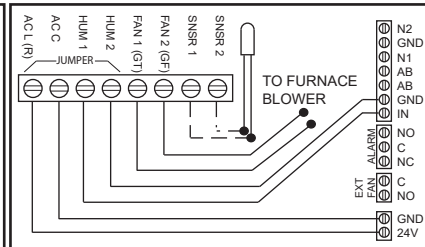
## WIRING TO 24V. HUMIDIFIER



## WIRING TO FAN POWER HUMIDIFIER



## WIRING TO STEAM HUMIDIFIER



# AUTO Mode Target Humidity

Humidity Index	Outdoor Temperature °F							
	-20	-10	0	10	20	30	40	50
1	0	5	10	15	20	25	30	35
2	3	8	13	18	23	28	33	38
3	6	11	16	21	26	31	36	41
4	9	14	19	24	29	34	39	44
5	12	17	22	27	32	37	42	47
6	15	20	25	30	35	40	45	50
7	18	23	28	33	38	43	48	53
8	21	26	31	36	41	46	51	56
9	24	29	34	39	44	49	54	59
10	27	32	37	42	47	52	57	62

## Testing the System

1. Re-assemble system and check all connections.
2. Restore power to the HVAC system.
3. Start HVAC System by raising thermostat setting.
4. Check to see that GFX4 display is on.
5. Set to TEST MODE by pressing "Drop" and "thermo" together for 5 seconds. The relay will close and the "+" will flash for 2 minutes or press a key to set to OFF MODE.
6. Set to OFF mode to verify humidifier operation ceases.
7. The GFX4 will stay in OFF Mode unless set to Manual or Automatic mode. See "Operation".



## Operating Modes

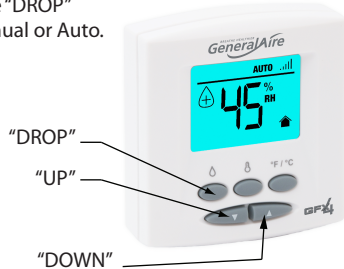
Press any button to light the display. Press the "DROP" button to select the Operating Mode, Off, Manual or Auto.

### OFF Mode

The Humidifier is turned off.

### MANUAL Mode

The GFX4 will work to maintain the single humidity selected. You can set your desired humidity level by pressing "UP" or "DOWN". The humidifier will turn ON or OFF according to your manual setting. The humidifier will operate when the measured relative humidity falls more than 1% below the set point until the measured relative humidity is 1% above the set point. When the humidifier is operating, the "+" will display. Humidity may have to be lowered when weather is colder or if condensation is suspected. The settings table to the right or a similar table may be used to compensate for cold outside temperatures.



Outdoor Temperature	Suggested Setting
-20°F -29°C	15%
-10°F -23°C	20%
0°F -18°C	25%
+10°F -12°C	30%
+20°F -7°C	35%
+30°F -1°C	40%

### AUTO Mode

The GFX4 will automatically raise the humidity as the outdoor temperature increases. This provides the highest possible humidity. The GFX4 will automatically lower the humidity as temperatures drop. This minimizes the risk of condensation on cold surfaces like windows.

The Auto Humidity Index Set Point may be changed from 0 (low) to 10 (high) by pressing "UP" or "DOWN". The Humidity Index is based on the outdoor temperature and indoor humidity. The humidifier will switch ON/OFF according to the calculated auto humidity index set point. When the humidifier is operating, the "+" will display. Lower Index settings are for older homes with less insulation and poor vapor barriers. Higher Index settings are for newer homes with complete vapor barriers, triple pane windows and high R value insulation.

- 1-2 Older than 1950, no vapor barrier, little insulation.
- 3-4 Built 1950-1965, no vapor barrier, R6 insulation.
- 5-6 Built 1965-1975, craft vapor barrier, R11 insulation.
- 7-8 Built 1980-1990, craft vapor barrier, R19, double pane windows.
- 9-10 Built after 1990, poly vapor barrier, R38 insulation, foam exterior cladding, triple pane windows.

If condensation is seen or suspected, reduce index by 2 until condensation stops. The level bars indicate the humidity index; one bar for two index points.

## OFFSET Mode

To change the calibration of the GFX4, an offset may be entered to the Humidity, Indoor Temperature or Outdoor Temperature displays. Press both "UP" and "DOWN" buttons together to enter OFFSET mode. The word "OFFSET" and "RH" will display. Press "UP" or "DOWN" to change the humidistat's Humidity calibration. Press both "UP" and "DOWN" buttons together again to change the Indoor Temperature offset. Press both "UP" and "DOWN" buttons together again to change the Outdoor Temperature offset.

## Display a Temperature

Press the "THERMOMETER" button to move between displaying indoor and outdoor temperature. "Tree" will be displayed when showing outdoor temperature. "House" will be displayed when showing indoor temperature. To change between °F and °C units, press the "°F/°C" button.

## Trouble Shooting

- "HOUSE" Flashing The indoor temperature sensor has failed.
- "TREE" Flashing The outdoor temperature sensor has failed.

### Humidifier Turns On and Off Repeatedly

- Check that input voltage is between 18 and 30 volts, AC and not intermittent.
- Check that humidistat is NOT mounted: 1. on supply duct. 2. downstream of humidifier. 3. closer to humidifier than 12 inches.
- Make sure that Outdoor Sensor wiring is not close to line voltage wires.

### Humidifier Runs Continuously

- If humidifier operates while HVAC system is off, check that power to humidifier is switched with HVAC operation.
- If humidifier operates every time HVAC System runs, compare humidity to set point. If humidity is lower than set point, humidistat will call for operation.

### Humidifier Does Not Run

- Check wiring to/from GFX4 control. Verify 18-30 volts. Use "TEST MODE".

### Humidifier Runs When Air Conditioning Is On

- If this is undesirable, change wiring to be powered only in heating periods.

### Humidity not high enough

- Fault with Humidifier. Check humidifier, water supply, electrical connections.
- HVAC operating time too short. Check humidifier trouble shooting.
- Humidifier undersized. Review humidity load and humidifier capacity.

### Humidity Too High

- Wiring fault. Set GFX4 to "OFF" mode and check that operation ceases.
- Outdoor sensor is being kept warm. Check that sensor is not buried in snow, on south side of house being warmed by sun or is too far inside of air intake.

### Limited Warranty

This humidistat is warranted to the consumer against defects in materials and workmanship for a period of one year from the date of installation. Defective parts will be repaired without charge except for removal, reinstallation and transportation costs. To obtain repair service under this limited warranty, the consumer must send the defective part to the manufacturer.

There are no express warranties covering this humidistat other than set forth above. The implied warranties of merchantability and fitness for a particular purpose are limited in duration to one year. The manufacturer assumes no liability in connection with the installation or use of this product, except as stated in this limited warranty. The manufacturer will in no event be liable for incidental or consequential damages.

Any questions pertaining to this limited warranty should be addressed to the manufacturer. USA: The manufacturer has elected not to make available the informal dispute settlement mechanism which is specified in the Magnuson-Moss Warranty Act.

## Technical Support

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