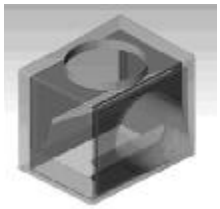
advanced energy products

SPECIFICATIONS

NightBreeze

for Furnaces



Vent Damper

Thermostat

Control Board

Outdoor Temperature Sensor

Description: The NightBreeze system integrates ventilation cooling and fresh air ventilation with normal heating and air conditioning. The result is reduced energy use and improved indoor air quality and comfort. The system was developed under California Energy Commission research grants to reduce peak cooling load in homes. Studies have shown that NightBreeze can reduce cooling energy costs by about 25-40% in California central valley climates, and can eliminate the need for air conditioning in coastal climates while improving indoor air quality and comfort. The system is easy to use and fully automatic. Unlike whole house fans, it filters outdoor air and does not require windows to be opened.

Compatibility: Furnaces must be "variable speed" with GE ICM2 motor. Currently approved furnaces include:

Amana Models: TBA
Lennox Models: TBA
American Standard Models: TBA

Capacities:
Cooling: Up to 5 tons
Heating: Dependent on furnace selected
Airflow: Up to 2200 CFM (dependent on furnace selected)

Stages: Heating: 1 or 2

Cooling: 1 or 2

Zoning: Up to two zones.

Thermostat: The thermostat includes two temperature scheduling options, a simple schedule which provides one temperature setup/setback per day with a separate schedule for weekends, or a detailed schedule that allows for four different temperature settings and different schedules for each day of the week. Graphic display of settings simplifies viewing of programmed schedules.

Ventilation Control: The minimum acceptable summer indoor temperature can be set using the thermostat to avoid over-cooling by the ventilation system. The system automatically adjusts the actual temperature to which the house is cooled, as well as the ventilation rate, based on weather conditions. The system will attempt to cool the house to the minimum temperature setting only on the hottest days.

The thermostat displays outdoor temperature as well as the indoor temperature that is predicted for the next day if no air conditioning were to be used (cooling only). This feature makes it possible to see the consequences of temperature settings; the thermostat will indicate whether the current settings are likely to cause the air conditioner to run.

Installation: The **vent damper** installs immediately above the return air grille in the attic or in a conditioned space above the ceiling. Ducting connects the damper to the furnace, and to an outside air intake. A hinged filter grille is installed below the damper to provide access to the filter, which slides into a slot in the damper. A 4' clearance is required above the ceiling to allow space for the damper and the outside air duct.

An **outside air intake** is required, which can consist of a gable vent, sheet metal dormer vent, or false chimney with rainproof cap. One square inch of air intake "free" area should be provided per 100 square feet of house floor area.

An **outdoor temperature sensor** must be installed in a location that is reasonably shaded from direct sun, preferably under an eave on the north side of the house.

A **second zone** may be added by connecting a second thermostat and zone dampers to the control board. If a two-stage furnace and air conditioner are used there is no need for a bypass damper; if only one zone is calling the system will attempt to meet the load of that zone by operating the system at the first stage.