Honeywell

Y8150 Fresh Air Ventilation Control System Competitive Comparison

	PRODUCT			
FEATURES	**Honeywell Y8150 Ventilation Control System**	**Research Products® Model 8126 Ventilation Control System**	**Lipidex® Aircycler Ventilation Control System**	**System Controls and Instruments® ERV24-HC11 FanCycler**
Designed to meet ASHRAE standards	Control provides ventilation to meet ASHRAE 62.2	Simple Timer, open time set in minutes per period	Simple Timer, on time set in minutes open per activation	Simple Timer, on time set in minutes open per activation
Simple configuration with dial-in parameters	Easy to install and configure for each dwelling size and occupancy	Timer 'on' time must be calculated for each home	Timer 'on' time must be calculated for each home	Timer 'on' time must be calculated for each home
Designed to ventilate with dwelling equipment calls	Optimizes outdoor air to be conditioned before circulation, prohibits ventilation when standards are met	Optimizes outdoor air to be conditioned before circulation based on timer settings	Ventilates with every fan cycle call, regardless of recommended ventilation rate	Ventilates with every fan cycle call, regardless of recommended ventilation rate
Operates ventilation to ASHRAE standards	ASHRAE Standard requires ventilation based on dwelling size and occupants only	Can potentially prohibit ventilation for extended periods. Can be 'jumpered' out*	Can incorrectly ventilate depending on fan calls, timer setting and equipment load	Can incorrectly ventilate depending on fan calls, timer setting and equipment load
Operator interface in dwelling	Controller installed in HVAC room only	Controller installed in duct, looks and feels like a humidistat	Controller installed in dwelling, can be manipulated by occupants	Controller installed in dwelling, can be manipulated by occupants
Provides positive ventilation pressure to prohibit infiltration	Yes	Yes	Yes	Yes

*** See following page for mixed air temperature calculation as they relate to the effectiveness of high and low range temperature cutout.**

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From Research Products Owners Manual available from http://www.aprilaire.com

"If the outdoor air temperature is below 0°F or above 100°F, the motorized normally-closed damper to the outside will not be opened."

The following tables represent the limited effect of disabling outdoor air ventilation over 100ºF and under 0ºF, as opposed to continuing to ventilate in order to meet the ASHRAE 62 standard, the legal standard of care in the industry. The mixed air temperature is the air provided to the air-handling unit to condition and distribute to the home.

This table shows the mixed air temperature effect between 99º to 115ºF is limited to < 1.5ºF.

Outside Air Volume	100 cfm
Return Air Temp	77ºF
Return Air Volume	1500 cfm

Outside Air Temp	Mixed Air Temp
85	77.53
87	77.67
89	77.80
91	77.93
93	78.07
95	78.20
97	78.33
99	78.47
101	78.60
103	78.73
105	78.87
107	79.00
109	79.13
111	79.27
113	79.40
115	79.53

This table shows the mixed air temperature effect between 10º to -20ºF is limited to < 2.0ºF.

Outside Air Volume	100 cfm
Return Air Temp	66ºF
Return Air Volume	1500 cfm

Outside Air Temp	Mixed Air Temp
10	62.27
8	62.13
6	62.00
4	61.87
2	61.73
0	61.60
-2	61.47
-4	61.33
-6	61.20
-8	61.07
-10	60.93
-12	60.80
-14	60.67
-16	60.53
-18	60.40
-20	60.27

Formula for calculating mixed air temperature is based on:

$$\%\ \text{Outdoor Air} = \left[\frac{\text{Return Air Temp.} - \text{Supply Air Temp.}}{\text{Return Air Temp.} - \text{Outdoor Air Temp.}}\right] * 100\% = \left[\frac{\text{Outdoor Air Volume (cfm)}}{\text{Return Air Volume (cfm)}}\right]$$

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