

AirCycler^(tm) G2 Rating Software procedures

Since the **AirCycler G2** is a brand new ventilation method, the current versions of the energy rating software packages do not have an option to select for it. To fool the rating software into giving you a correct result you do the following:

The New Ventilation Strategy

This new ventilation strategy uses the lower wattage exhaust or bath fan to provide supplemental ventilation when there has not been enough run time of the central fan for heating or cooling to satisfy ventilation requirements.

The Problem

You must tell the rating software the wattage of the fan used to produce supplemental ventilation. Normally, that would be the large central fan, but with the **AirCycler G2** and the **FanConnect** switch, you would use the wattage of the exhaust fan. However, the typical exhaust fan is moving less air than the fresh air duct into the central fan so we have to further modify this wattage figure.

The Solution

Find the additional wattage fraction of the exhaust fan. Take the flow rate into the air handler (**AHcfm**), and divide by the flow out the exhaust (**EXHcfm**). For example, if you measured 60 cfm for the exhaust (**EXHcfm**) and 90 cfm into the air handler (**AHcfm**), $90/60 = 1.5$. 1.5 is the wattage multiplication factor (**Wk**). The exhaust fan will have to run 1.5 times longer to provide supplemental ventilation than the air handler would.

$$\mathbf{AHcfm / EXcfm = Wk}$$

Now, take the exhaust fan wattage (**EXw**), for example 30W, multiply by 1.5 (**Wk**) = 45 effective watts (**EFw**).

$$\mathbf{EXw \times Wk = EFw}$$

EFw, or 45 watts is the value you enter into Rem Rate for the supplemental ventilation fan wattage. This is much more efficient than using the central fan.

Also enter in the hours/day that you have programmed the AirCycler g2 to operate. The factory defaults are 24 hours/day.

And as with the first generation AirCycler, enter the fresh air flow rate in CFM that you measured.

Conclusion

With the AirCycler method of mechanical ventilation, we are taking advantage of the existing heating/cooling calls to provide mechanical ventilation for free. With the **AirCycler G2 & FanConnect**, If there is not enough run time for heating/cooling, instead of forcing on the larger central fan, like with the AirCycler FRV, we force on the much smaller exhaust fan.

The **AirCycler G2** is configured with the two flow rates and will keep track of all fan run times and calculate how much supplemental ventilation is required with the exhaust fan. It also monitors exhaust fan usage by the homes occupants and will account for this supplemental ventilation also.