

Controls.News

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See our Controls Line Card on:
www.meiersupply.com

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Energy Savings realized from proper setup of economizer dampers !!!

March 1,2009 - Most rooftop unit and air handling unit installations are "Energy Hogs" due to incorrect setup of the minimum outdoor air positioning of the outdoor damper.

The minimum outdoor air has to be conditioned (heated, cooled, humidified, cleaned, etc) to maintain building comfort levels. The "conditioning" costs energy dollars. By properly adjusting the minimum amount of outdoor air you can save large amounts of energy and consequently large amounts of money.

If the method of setting up the minimum ventilation (let's say 10% to meet ASHRAE required ventilation), is adjusting the minimum position pot until the damper blades rotate 10%, then your actual outdoor air flow is more than likely 25-30% outdoor air. This is due to the fact that most damper airflow curves are not linear. Meaning that 10% rotation does not necessarily mean 10% air flow. In fact, in a lot of cases the dampers may provide the minimum ventilation in the fully closed position due to leakage between the blades and side seals.

All of this leads to the fact that the proper setup of the minimum damper position should be adjusted by utilizing the mixed air temperature method. See the method on the www.meiersupply.com web site. Navigate to Technical Tips. Here is a snapshot:

- Make sure that the unit fan is running and that the heating and cooling are disabled. Using a thermometer :
- Measure the outdoor air temperature OAT (Example 30F)
- Measure the return air temperature RAT (Example 72 F)
- Determine the mixed air temperature (MAT) calculation as follows:

$$MAT = [(OAT-RAT) \times \% \text{ Vent Air}] + RAT$$

$$MAT = [(30F - 72F) \times 10\%] + 72F$$

$$MAT = [(-42F) \times .10] + 72F$$

$$MAT = -4.2F + 72F$$

$$MAT = 67.8F$$

Adjust the outdoor air minimum position pot until your thermometer in the mixed air stream reads 67.8F. - You are now **GREEN !!!**

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Honeywell



Honeywell M7415A or B Economizer damper motor



Honeywell W7459A Economizer Logic Modules. As well as C7150 and C7400 sensors



Honeywell W7215/W7415 Demand Controlled Ventilation (DCV) Components.

Honeywell

Johnson Controls

BELIMO

Special points of interest:

Did you know that Honeywell manufactures an adapter for the M7415 series "black box" economizer motor that will accept a 0/2-10 VDC input signal? - They DO !

This means that if you are retrofitting a RTU or AHU with a M7415 and a DDC controller with analog outputs, you don't have to change the actuator out. Saving time and money.

Meier Supply stocks the Q769C adapter.



*** Available from Authorized Branches only