



SOLUTIONS



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Focused on The Engineered Environment

April 2012

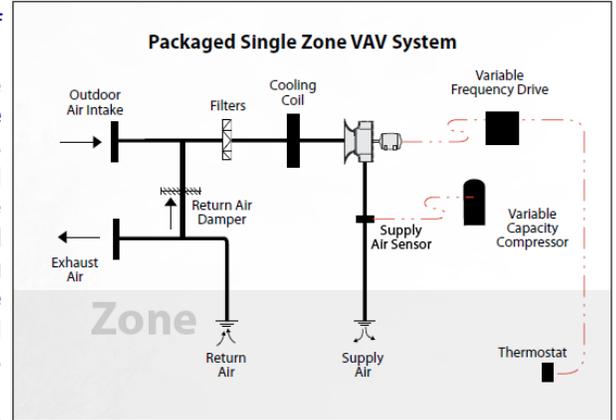
Welcome to SOLUTIONS, a monthly newsletter provided by Jacco & Associates. Jacco's focus on system knowledge provides you with the engineering support and product solutions for your applications.

April Feature:



Single Zone VAV

In a single zone VAV unit, a variable speed fan controls the amount of airflow provided to the space by modulating the fan motor speed based on the difference between the actual space temperature and the temperature setpoint. The modulating compressor uses the temperature of the supply air leaving the unit to determine how much refrigerant flow is needed to maintain the supply air temperature setpoint. The fan and compressor continue to modulate to precisely meet the desired space temperature. For part load conditions, the single zone VAV unit will operate at a lower fan speed for a greater amount of time, saving valuable energy and providing the space with more constant temperature and humidity control. HVAC systems generally operate at part load conditions for a majority of the year, and during these part load conditions the operation of a single zone VAV system provides many benefits. First, a single zone VAV system will operate at a lower fan speed than a constant volume system, resulting in less fan energy consumption. Second, with the modulation capabilities of both the fan and compressor a single zone VAV system can provide precise temperature control and additional passive dehumidification. Third, the modulation capabilities of the compressor reduce the amount of compressor on/off cycling, reducing wear on the compressor and providing greater energy savings than hot gas bypass systems. Fourth, lower fan speeds reduce the amount of sound produced by the supply fan. Finally, with the entire modulating control for part load operation provided within the HVAC unit, a single zone VAV system is simple to install, set up and maintain.



Suitable Applications Include, But Not Limited To:

- Classrooms
- Conference Rooms
- Assembly Halls
- Auditoriums
- Libraries
- Hospitals
- Supermarkets
- Convenience Stores
- Restaurants
- Churches
- Health Clubs
- Museums
- Office Buildings
- Manufacturing
- Lodging
- Retail Buildings
- Warehouses



Single Zone VAV is a part of both ASHRAE Standard 90.1-2010 and Standard 189.1-2009.



ASHRAE Standard 90.1-2010 will be mandated by the DOE to be a part of the building code in all 50 states by October 18, 2013.

April Question & Answer:

Question: In ASHRAE 90.1-2010 what is the minimum hp/btuh required to require Single Zone VAV?

- A.) 3/60,000
- B.) 5/110,000
- C.) 7.5/120,000
- D.) 10/144,000

Prize: Charbroil Gas Grill!!!

Respond by May 15th with the correct answer to be entered in the raffle for this month's prize!

Last Month's Question & Answer Winner!

Question: Which of the following fans is the most energy efficient?

Answer: B.) Vane Axial. Congratulations to Rich Spang for winning a Panasonic Lumix Waterproof Digital Camera!

To remove your name from our mailing list, please [click here](#).

Questions or comments? E-mail us at opportunity@jacco.com



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