

**Tech Talk - Air Door Controls And Mounting**

The control systems of a building HVAC system are like the human brain and nerve system of a body. Each has a purpose of providing control to the functional parts so that the unit can function as intended. When it comes to the control of a particular piece of equipment like that of an air door the control can be set up independently of the rest of the building control system or integrated into it. The HVAC engineer needs to understand and think through how the air door impacts the rest of the HVAC system and likewise how the rest of the HVAC system can impact the effectiveness of the air door.

First, an air door does not replace the law of conservation of mass. Air mass is neither created or destroyed by the use of an air door. If a building or space within a building is under a negative or positive pressure there will be a greater or lesser degree of effectiveness of the air door. This does not negate the value of the air door; however, the engineer needs to acknowledge and account for this reality by appropriate design of the controls for both the air door and the rest of the building HVAC system.

*“Two important factors influence the pressure differential against which an air curtain must work: the height and the orientation of the structure.”*  
Reference: ASHRAE HANDBOOK - 2004 Systems and Equipment

Some control options for air doors that are available and appropriate for different applications are indicated below. You can contact your local Powered Aire rep in your area or the factory to discuss these or other customized control sequences or options that you may wish to use in your design.

The mounting of air doors is one of those coordination issues that needs to be discussed with the architect and accounted for in both discipline specs and details. The type of door framing and mounting can impact the effectiveness of an air door in a large opening situation where a garage type door is used. See below and consult your Powered Aire rep or the factory for assistance.

**Application Consideration**

Control devices for air doors include but are not limited the ones listed below. The control of an air door is only limited to the imagination and creativity of the engineer (and the fundamental engineering principles, codes, standards and laws of physics). Consult your Powered Aire rep or the factory for assistance with special applications..

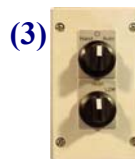
- (1) Door switch.
- (2) ON/OFF Disconnect Switch
- (3) ON/OFF Heating or Cooling Switch
- (4) HOA Switch
- (5) Thermostat
- (6) Control Panel With Additional Control Devices To Integrate The Air Door Operation Into The Total Building Control Scheme and Sequence Of Operation.

***Air Door Application Considerations***

(1)



(2)



(3)



(4)



(5)



(6)