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ADI TECHNICAL BULLETIN – SWITCHABLE DIFFERENTIAL PRESSURE ROOMS

DISCLAIMER: This bulletin is for information only and is not to be relied upon in making any decisions regarding code issues, which of course should be addressed with your state and local officials, a registered professional engineer, your insurance carrier and any other authority having jurisdiction (AHJ.)

SUBJECT: Switchable Differential Pressure Rooms & ADI's Baulin-tube® Indicator.

DATE: November 2, 2006

ISSUES: 1) Is switchable pressure rooms okay in hospitals? 2) Does ADI have an indicator for switchable pressure rooms where they are allowed?

DISCUSSION:

First, regarding switchable pressure rooms in Hospitals, the AIA/HHS Publication "Guidelines for Design and Construction of Healthcare Facilities", 2006 Edition, ISBN 1-57165-013-X, Section 10.2.2.1(3) for Airborne Infection Isolation Rooms and Section 10.2.2.2(5) for Protective Environment Rooms state: "Rooms with reversible airflow provisions for the purpose of switching between protective environment and airborne infection isolation functions are not acceptable." Based on this, ADI infers that hospital rooms which are quickly switchable via a wall switch, key switch or automation system, are not allowed. If a room is to be switched, there needs to be HVAC maintenance staff intervention to be sure the room airflow direction is proper for the room application. This publication can be obtained from the AIA by calling 202-626-7541 or www.aia.org/books.

Second, for rooms that are allowed to be switched, ADI offers two basic models of visual-only indicators for switchable rooms. Model ADI-69-V-N/P which is a manually switchable indicator and Model ADI-69-V-CURVE which comes in two types, depending on the label ordered. The CURVE unit does not require any manual adjustments for switched pressure modes. The choice depends on the failsafe indication you want and whether there is available staff to switch the indicator mode. The following compares both:

Model ADI-69-V-N/P: This unit has a straight tube that requires the tilt of the tube and the color of the ball to be MANUALLY changed each time the room pressure mode is changed. The failsafe position of the ball is outside of the room for negative mode setup and inside of the room for positive mode setup, same as the Negative unit or the Positive unit.

Advantages: Similarity to the other negative or positive visual-only units and therefore the staff's familiarity with the way the indicators work, especially the failsafe position of the ball, e.g. the red ball can be seen from outside of the room before entering the room if the negative room directional airflow has degraded or failed.

Another advantage is the staff is accustomed that a red ball means the room is a negative mode room, a green ball would mean a positive mode room.

Possible Disadvantages: Requires manual changing of the tilt and changing of the ball each time the room pressure mode is changed.

Model ADI-69-V-CURVE: This unit has a curved tube with the low point at the bottom of the tube which is located in the wall. The unit uses one yellow ball. The failsafe position of the ball is in the wall. Therefore, when the door is opened to the room, the ball falls out of sight into the wall, unlike the other models where the ball falls to the other side of the wall and is visible.

Advantages: There is no need to manually change the tube or the ball each time the room pressure mode changes.

Possible Disadvantages: The ability to see the ball from the other side in a failed mode. For example, if the room is in negative mode and the room pressure is neutral, the ball will be in the wall and not in the corridor. In other words, you will not know the room is not properly negative until you actually enter the room and see it is not in the room with the door closed.

END