

# Airflow Direction Incorporated

Toll Free: (888) 334-4545

## SAMPLE SPECIFICATIONS: Visual plus Alarm Indicators

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### **SPECIFIERS:**

**Highlighted text is for you to choose and edit.**

1. Be sure the installation location allows for ADI's 6" diameter escutcheon plate and for the photomodule, allow 7.5" total vertical travel clearance.

2. ADI RECOMMENDS AT LEAST 0.01" W.C. FOR ROOM PRESSURIZATION (POSITIVE OR NEGATIVE.) CHECK ARCHITECT'S OR GENERAL CONTRACTOR'S OR END-USER'S JOB SPECIFICATION FOR ROOM CONSTRUCTION, IN PARTICULAR:

- ✓ DOOR SEALS ON ALL EDGES INCLUDING RETRACTABLE DOOR BOTTOM SEALS;
- ✓ CALLOUTS THAT SEAL ALL FLOOR AND WALL PENETRATIONS AND WHERE THE WALLS MEET THE UNDER SIDE OF THE FLOOR ABOVE;
- ✓ SHEETROCK OR GASKETED LAY-IN TILE CEILING;
- ✓ NON-AIR RETURN LIGHT FIXTURES;
- ✓ NON-OPERABLE AND SEALED WINDOWS.

SEE ADI'S TECHNICAL BULLETIN – MINIMUM ROOM DIFFERENTIAL PRESSURE FOR ADI.

3. UNDER #3 BELOW, CHOOSE THE LOCAL ANNUNCIATOR TYPE, WITH OR WITHOUT HORN SILENCE (MUTE) & TEST.

4 UNDER #4 BELOW, CHOOSE THE ALARM MODELS AND EDIT ROOM TYPES.

✓ COORDINATE EMERGENCY POWER WITH ELECTRICAL DESIGNER

### **ROOM PRESSURIZATION/DIRECTIONAL AIRFLOW INDICATORS AND ALARMS**

#### **AIRFLOW DIRECTION INDICATOR & ALARM**

**TAG: ADIA**

##### **1. General**

- a. INTENT - Room airflow direction indicator shall indicate the status of the directional airflow into or out of the concerned space.
- b. RELIABILITY - For increased reliability, the status indication shall be via two means: first, via a visual only primary element that does not utilize any electricity (e.g. ADI's Patented Baulin-tube® technology) and second, via an electric powered alarm indicating improper room directional airflow. The visual indicator shall display a degradation of the desired one directional airflow prior to a neutral or reversal of directional airflow.
- c. SMOKE-LIMITING – Per NFPA, room walls shall limit smoke migration which includes any openings in walls. The primary element of the airflow direction indicator shall incorporate a means

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of stopping airflow through the element when the room door is closed and the room is under proper negative or positive pressure. This shall be accomplished via ADI's patented endcap design, where the indicating sphere closes off the tube endcap during proper room pressure.

- d. **WARRANTY** - The visual component shall carry a lifetime warranty against breakage on the tube, endcaps, indicating sphere, backplate and clear dome covers. All other components including the electric components shall be industrial grade and warranted for one year. The alarm shall be capable of a minimum of two hundred thousand electrical contact life cycles of operation.
- e. **REMOTE INTERFACE** - The indicator shall incorporate a remote, wall mounted, electric audible and visual alarm, as well as a set of integral Form C contacts (N.O. and N.C.) for remote alarm monitoring and DDC interface whenever the desired directional airflow degrades to a neutral or reversal of direction, or whenever power to the ADI controller fails. With power applied to the ADI controller, the alarm shall incorporate an adjustable zero-to-sixty second time delay relay, factory set at 30 seconds. When the time delay relay is set above zero seconds, it shall allow transient airflow direction conditions (e.g. opening the door) without activating the alarm. However, the primary element will continuously and visually indicate the directional airflow.
- f. **FAILSAFE CHECKING** - For safety purposes, the indicator shall be installed with a tilt described in the installation documents. The indicator shall display a self-check for failure each time the airlock or door is opened. This is accomplished by the indicating sphere rolling to its failsafe position (corridor for negative rooms, inside room for positive rooms) when the door to the room is opened. The indicating sphere should go back to its proper position (in the room for negative rooms, in the corridor for positive rooms) when the door is closed.
- g. **LABEL** - Each indicator installed shall have a small, laminated sign next to it describing the intent and operation of the indicator.
- h. **NEW CMU or NEW POURED CONCRETE WALLS**: Provide a 2.5" diameter Electrical Metallic Tube (EMT) sleeve prior to pouring of mortar or concrete. Provide 2"x3" switch box for low voltage wiring to photomodule. See ADI'S details.
- i. **FIRE RATED WALLS**: Refer to the Authority Having Jurisdiction (AHJ) to see if the wall must be rated. Also see ADI's Technical Bulletin "ADI and Fire-Rated Walls". If fire-rating is required by the AHJ, provide the fire-rating via proper means. See ADI's Detail for Fire-Rated Wall Installations which uses 3-1/2" EMT SLEEVE..

### **2. Indicator**

- a. The alarm unit shall incorporate a Baulin-tube® visual indicator manufactured by Airflow Direction Incorporated, coupled with electronics to provide the capability for direct, manufacturer provided local annunciation and the capability for remote annunciation via a Form C set of contacts.

### **3. Local Annunciator**

- a. **Local Annunciator with Mute & Test**: The Visual plus Alarm Indicator shall be equipped with a local annunciator that indicates power to the unit as well as an audible and visual notification of an

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alarm condition. In addition, the local annunciator shall incorporate a horn silence switch and a test button that illuminates all lights and sounds the horn. When the horn is silenced, a red “MUTE” LED shall light indicating the horn is silenced. The alarm light shall remain functional in response to an alarm. The annunciator shall fit in a deep two-gang light switch box.

- b. **Local Annunciator without Mute & Test:** The Visual plus Alarm Indicator shall be equipped with a local annunciator that indicates power to the unit as well as an audible and visual notification of an alarm condition. In addition, the local annunciator shall incorporate a horn silence switch and a test button that illuminates all lights and sounds the horn. When the horn is silenced, a red “MUTE” LED shall light indicating the horn is silenced. The alarm light shall remain functional in response to an alarm. The annunciator shall fit in a deep two-gang light switch box.

#### **4. Manufacturer**

- a. The product shall be a Baulin-Tube® alarmed indicator manufactured by Airflow Direction Incorporated. The unit shall come with an adhesive backed, laminated 3.5”x3.5” wall label describing the operation of the airflow direction indicator. The model number shall be:

MODEL	DESCRIPTION	TYPES OF ROOMS USED-IN
<b>NEGATIVE ROOM MODELS:</b>		
ADI-69-V+A-N-M&T	Visual-plus-Alarm for negative rooms with mute & test local annunciator.	holding; cagewash; BSL3; procedure; negative isolation;
ADI-69-V+A-N-M&T-INSEC	Visual-plus-Alarm for negative rooms with mute & test local annunciator & inside security plate.	Correctional facility healthcare; healthcare psych observation;
ADI-69-V+A-N-NOM&T	Visual-plus-Alarm for negative rooms with basic local annunciator without mute & test.	holding; cagewash; BSL3; procedure; negative isolation;
ADI-69-V+A-N-NOM&T-INSEC	Visual-plus-Alarm for negative rooms with basic local annunciator without mute & test & inside security plate.	Correctional facility healthcare; healthcare psych observation;
ADI-69-V+A-N-NOLOCAL	Visual-plus-Alarm for negative rooms without any local annunciator. Used for interface to BAS alarm system.	holding; cagewash; BSL3; procedure; negative isolation;
ADI-69-V+A-N-NOLOCAL-INSEC	Visual-plus-Alarm for negative rooms without any local annunciator & with inside security plate. Used for interface to BAS alarm system.	Correctional facility healthcare; healthcare psych observation;
<b>POSITIVE ROOM MODELS:</b>		
ADI-69-V+A-P-M&T	Visual-plus-Alarm for positive rooms with mute & test local annunciator.	holding; bedding; operating room, protective isolation; cleanroom; packaging; manufacturing; food processing;

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ADI-69-V+A-P-M&T-INSEC	Visual-plus-Alarm for positive rooms with mute & test local annunciator & inside security plate.	Correctional facility healthcare; healthcare psych observation;
ADI-69-V+A-P-NOM&T	Visual-plus-Alarm for positive rooms with basic local annunciator without mute & test.	holding; bedding; operating room, protective isolation; cleanroom; packaging; manufacturing; food processing;
ADI-69-V+A-P-NOM&T-INSEC	Visual-plus-Alarm for positive rooms with basic local annunciator without mute & test & inside security plate.	Correctional facility healthcare; healthcare psych observation;
ADI-69-V+A-P-NOLOCAL	Visual-plus-Alarm for positive rooms without any local annunciator. Used for interface to BAS alarm system.	holding; bedding; operating room, protective isolation; cleanroom; packaging; manufacturing; food processing;
ADI-69-V+A-P-NOLOCAL-INSEC	Visual-plus-Alarm for positive rooms without any local annunciator & with inside security plate. Used for interface to BAS alarm system.	Correctional facility healthcare; healthcare psych observation;

\*Baulin-Tube® is a registered trademark of Airflow Direction Incorporated

### 5. Execution

- a. Provide an NEC and local code conforming wiring and service disconnect to each controller.
- b. The HVAC system must be operational with a proper directional minimum differential pressure of 0.01 inches of water column prior to the installation and testing of the indicators.
- c. The installing contractor shall mount and test every indicator for proper operation. The installation shall be per the manufacturer's Installation Instructions and the Operation and Maintenance Manual. Turn over the pitch levels and installation documents to the Owner during job start-up. Provide 8 hours of training to the Owner for field orientation and operation of a typical indicator.