

## Application

The AMD-42 combines the functionality of an accurate airflow measuring station and a low leakage control damper into one compact assembly that both measures and regulates airflow volumes to a target set-point. The AMD-42 comes standard with a modulating actuator and a properly sized pressure transducer that output a signal proportional to cfm. A field supplied controller can then use the transducer's signal along with the flow formula:  $CFM = Area * K * (P_{transducer})^m$  to regulate the modulating actuator to the target set-point. K & m are factory supplied variables specific to each damper.

## Ratings

### Velocity

300 - 3000 fpm (1.5 - 15.2 m/s)

### Leakage

6 cfm/ft<sup>2</sup> @ 4 in. wg (110 cmh/m<sup>2</sup> @ 1 kPa)  
3 cfm/ft<sup>2</sup> @ 1 in. wg (55 cmh/m<sup>2</sup> @ 0.25 kPa)

### Temperature

-20°F to 180°F (-29°C to 82°C). Consult factory for temperature lower than -20°F (-29°C)

### Transducer Operating Temperature

32°F to 140°F (0°C to 60°C)

### Airflow Monitoring Accuracy

5% of reading

| W x H  | Minimum Size |           | Maximum Size   |                   |
|--------|--------------|-----------|----------------|-------------------|
|        | External     | Internal  | Single Section | Multiple Section* |
| Inches | 6 x 6        | 8 x 6     | 60 x 74        | 120 x 148         |
| mm     | 152 x 152    | 203 x 152 | 1524 x 1880    | 3048 x 3759       |

\* For sizes larger than listed, consult factory

## Features & Control Options

- 24 VAC modulating actuator mounted externally or internally (NEMA 2)
- Factory supplied 0-10 VDC or 4-20 mA pressure transducer
- Clean wrap
- Retaining Angles

\*When 12 ga. frame is selected and the damper height is less than 17 inches, low profile top and bottom frame members are utilized. These low profile frame members will be made from 16 ga. material.

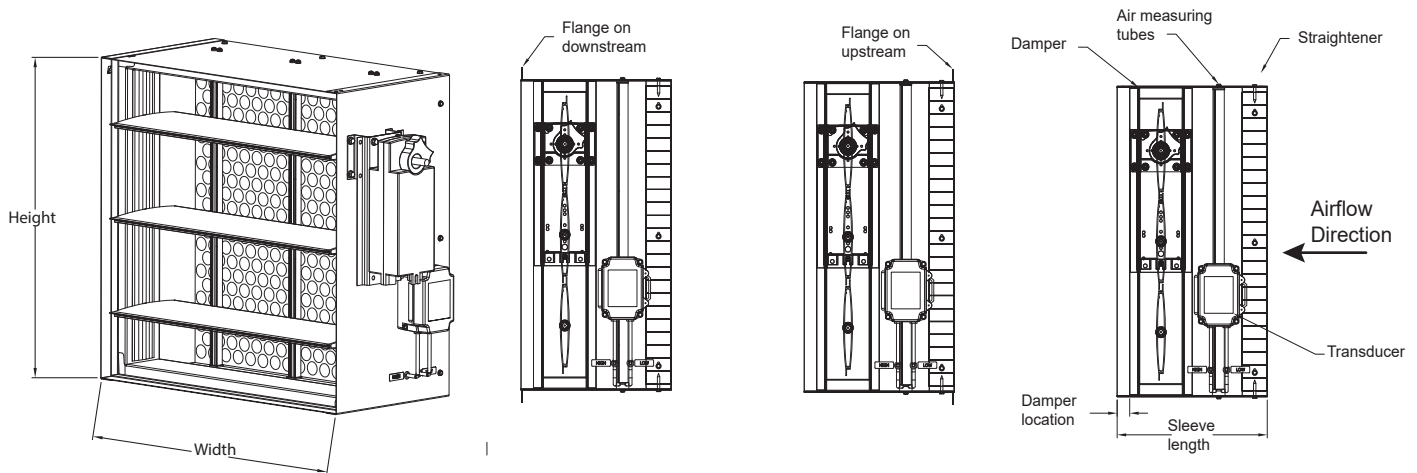


W & H dimension furnished approximately 1/4 in. (6mm) undersize.

## Construction

|                          | Standard                                         | Optional                                                     |
|--------------------------|--------------------------------------------------|--------------------------------------------------------------|
| Frame Material           | Galvanized Steel                                 | -                                                            |
| Frame Material Thickness | 16 ga. (1.5 mm)                                  | 12 ga. (2.7 mm)*                                             |
| Frame Type               | 5 in. x 1 in. hat channel                        | -                                                            |
| Blade Material           | Extruded Aluminum                                | -                                                            |
| Blade Type               | Airfoil                                          | -                                                            |
| Blade Action             | Parallel                                         | -                                                            |
| Linkage                  | Plated steel out of airstream, concealed in jamb | 316SS                                                        |
| Axle Bearings            | Synthetic (acetal) sleeve type                   | 316SS                                                        |
| Axle Material            | Plated steel                                     | 316SS                                                        |
| Blade Seals              | TPE                                              | Silicone                                                     |
| Jamb Seals               | Stainless Steel                                  | -                                                            |
| Sleeve                   | 12 in. (305 mm)                                  | 12 in. - 48 in. (305 mm - 1219 mm)                           |
| Sleeve Gauge             | 20 ga. (1 mm)                                    | 14 ga. or 16 ga. (2 mm - 1.5 mm)                             |
| Flange                   | None                                             | 1 1/2 in. (38mm); Upstream side, Downstream side, Both Sides |
| Air Straightener         | Polycarbonate Honeycomb                          | -                                                            |
| Actuator                 | 24 VAC 50/60 Hz                                  | 24 VAC w/ auxiliary switches, Manual quadrant                |

## AMD-42 Mounting Styles



## Factory Supplied Controls

By adding a factory supplied controller AMD series airflow measuring dampers become a turn-key solution for measuring and controlling the flow of air. Go to [www.greenheck.com](http://www.greenheck.com) for complete instructions on these two controllers.

### Vari-Green<sup>®</sup> Constant Volume Controller

Greenheck's Vari-Green Constant Volume Controller is a highly configurable analog based controller. The controller can accept a cfm setpoint either remotely by way of an analog input or locally by using touch sensitive buttons on its cover. The controller then regulates the position of the AMD's actuator to deliver the requested cfm. An analog output on the controller also supplies a signal that is proportional to the real-time cfm.

The Vari-Green Constant Volume Controller features a two line backlit LCD display to show the user the current CFM setpoint, the real-time cfm, the current pressure reading, and the AMD's actuator position.



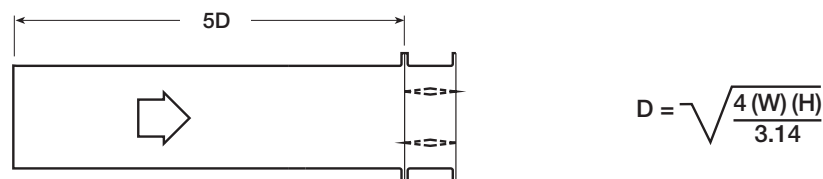
# Pressure Drop Data

This pressure drop testing was conducted in accordance with AMCA Standard 500-D using the three configurations shown. All data has been corrected to represent standard air at a density of 0.075 lb/ft<sup>3</sup> (1.201kg/m<sup>3</sup>).

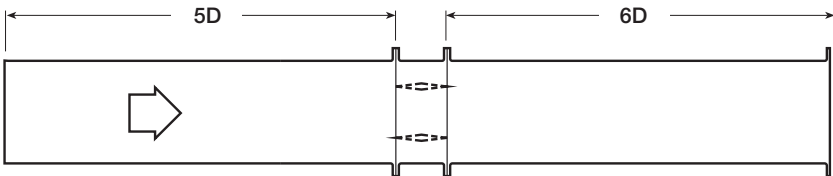
Actual pressure drop found in any HVAC system is a combination of many factors. This pressure drop information along with an analysis of other system influences should be used to estimate actual pressure losses for a damper installed in a given HVAC system.

## AMCA Test Figures

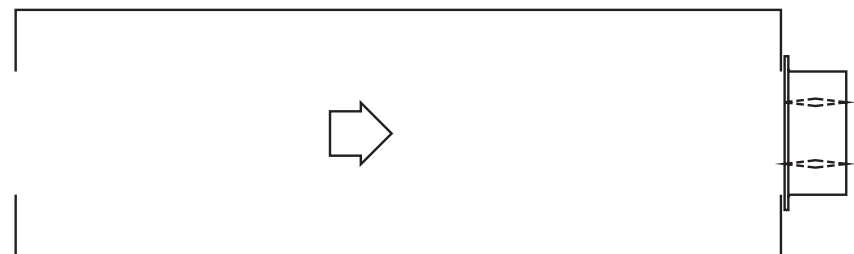
**Figure 5.2** Illustrates a ducted damper exhausting air into an open area. This configuration has a lower pressure drop than Figure 5.5 because entrance losses are minimized by a straight duct run upstream of the damper.



**Figure 5.3** Illustrates a fully ducted damper. This configuration has the lowest pressure drop of the three test configurations because entrance and exit losses are minimized by straight duct runs upstream and downstream of the damper.



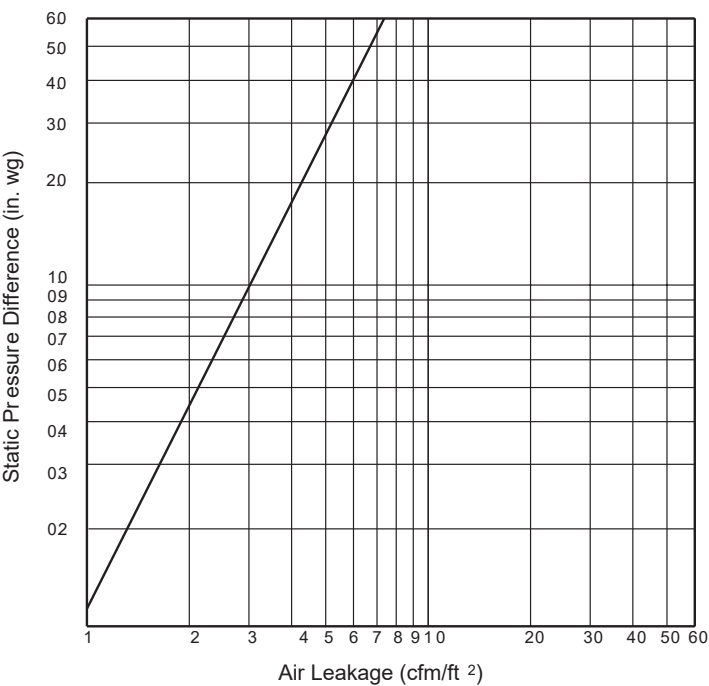
**Figure 5.5** Illustrates a plenum mounted damper. This configuration has the highest pressure drop because of extremely high entrance and exit losses due to the sudden changes of area in the system.



| Dimension inches   | 12x12                |      |      | 24x24 |     |      | 36x36 |     |      | 12x48 |     |      | 48x12 |      |      |
|--------------------|----------------------|------|------|-------|-----|------|-------|-----|------|-------|-----|------|-------|------|------|
| AMCA figure        | 5.2                  | 5.3  | 5.5  | 5.2   | 5.3 | 5.5  | 5.2   | 5.3 | 5.5  | 5.2   | 5.3 | 5.5  | 5.2   | 5.3  | 5.5  |
| Velocity (ft/min.) | Pressure Drop in. wg |      |      |       |     |      |       |     |      |       |     |      |       |      |      |
| 500                | .05                  | .03  | .07  | .01   | .01 | .04  | .01   | .01 | .02  | .01   | .01 | .03  | .03   | .02  | .05  |
| 1000               | .18                  | .12  | .28  | .05   | .03 | .17  | .04   | .02 | .12  | .01   | .04 | .18  | .11   | .06  | .19  |
| 1500               | .43                  | .28  | .62  | .12   | .06 | .37  | .09   | .05 | .28  | .14   | .09 | .40  | .25   | .14  | .44  |
| 2000               | .76                  | .49  | 1.11 | .22   | .11 | .66  | .17   | .08 | .50  | .25   | .16 | .72  | .44   | .25  | .78  |
| 2500               | 1.19                 | .77  | 1.73 | .34   | .17 | 1.04 | .26   | .13 | .78  | .39   | .25 | 1.12 | .69   | .39  | 1.21 |
| 3000               | 1.71                 | 1.11 | 2.50 | .49   | .24 | 1.50 | .38   | .19 | 1.13 | .57   | .36 | 1.62 | 1.0   | .57  | 1.75 |
| 3500               | 2.33                 | 1.51 | 3.41 | .66   | .33 | 2.04 | .51   | .26 | 1.53 | .77   | .49 | 2.21 | 1.36  | .77  | 2.38 |
| 4000               | 3.04                 | 1.98 | 4.45 | .87   | .43 | 2.66 | .67   | .34 | 2.01 | 1.01  | .64 | 2.88 | 1.78  | 1.01 | 3.11 |

# Leakage Data

Damper leakage (with blades fully closed) varies based on the type of low leakage seals applied. Model AMD-42-TD is available with silicone blade seals and stainless steel jamb seals. Leakage testing was conducted in accordance with AMCA Standard 500-D and is expressed as cfm/ft<sup>2</sup> of damper face area. All data has been corrected to represent standard air at a density of 0.075 lb/ft<sup>3</sup> (1.201 kg/m<sup>3</sup>).



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