

## Application

The AMD-33 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-33 comes standard with a modulating actuator and a properly sized pressure transducer that output a signal proportional to cfm. A field supplied controller can 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
- Factory supplied 0-10 VDC pressure transducer
- Clean wrap
- Retaining angles



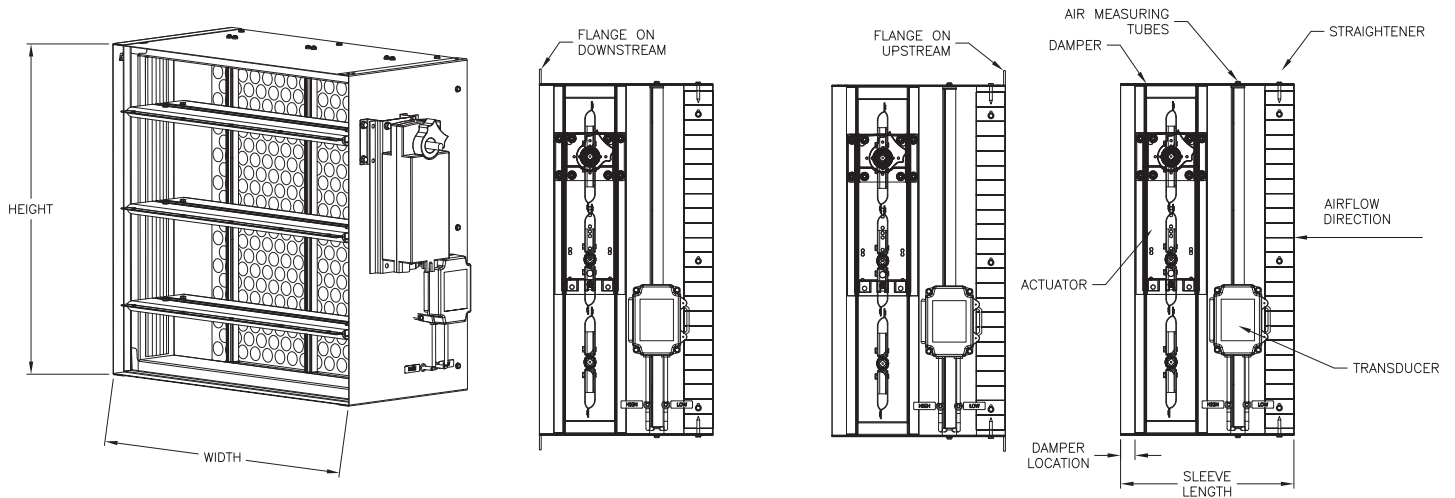
W & H dimension furnished approximately 1/4 in. (6mm) undersize.

## Construction

|                                 | Standard                                         | Optional                                                  |
|---------------------------------|--------------------------------------------------|-----------------------------------------------------------|
| <b>Frame Material</b>           | Galvanized Steel                                 | -                                                         |
| <b>Frame Material Thickness</b> | 16 ga. (1.5 mm)                                  | 12 ga. (2.7 mm)*                                          |
| <b>Frame Type</b>               | 5 in. x 1 in. hat channel                        | -                                                         |
| <b>Blade Material</b>           | Galvanized steel                                 | -                                                         |
| <b>Blade Type</b>               | Airfoil                                          | -                                                         |
| <b>Blade Action</b>             | Parallel                                         | -                                                         |
| <b>Linkage</b>                  | Plated steel out of airstream, concealed in jamb | 316SS                                                     |
| <b>Axle Bearings</b>            | Synthetic (acetal) sleeve type                   | 316SS                                                     |
| <b>Axle Material</b>            | Plated steel                                     | 316SS                                                     |
| <b>Blade Seals</b>              | TPE                                              | Silicone                                                  |
| <b>Jamb Seals</b>               | Stainless Steel                                  | -                                                         |
| <b>Sleeve</b>                   | 12 in. (305 mm)                                  | 12 in. - 48 in. (305 mm - 1219 mm)                        |
| <b>Sleeve Gauge</b>             | 20 ga.                                           | 14 ga. or 16 ga.                                          |
| <b>Flange</b>                   | None                                             | 1½ in. (38mm); Upstream side, Downstream side, Both Sides |
| <b>Air Straightener</b>         | Polycarbonate Honeycomb                          | -                                                         |
| <b>Actuator</b>                 | 24 VAC 50/60 Hz                                  | 24 VAC w/ auxiliary switches, Manual quadrant             |

\*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.

## AMD-33 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® 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.

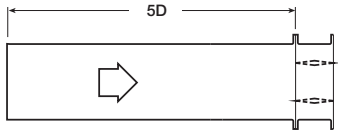


# Pressure Drop Data



Greenheck Fan Corporation certifies that the model AMD-33 shown herein is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 511 and comply with the requirements of the AMCA Certified Ratings Programs. The AMCA Certified Ratings Seal applies to Air Leakage and Air Performance ratings.

## AMCA 5.2



12 in. x 12 in. (305mm x 305mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.041                  |
| 1000           | 0.131                  |
| 1500           | 0.266                  |
| 2000           | 0.437                  |
| 2500           | 0.658                  |
| 3000           | 0.927                  |
| 3500           | 1.245                  |
| 4000           | 1.591                  |

24 in. x 24 in. (610mm x 610mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.025                  |
| 1000           | 0.099                  |
| 1500           | 0.222                  |
| 2000           | 0.394                  |
| 2500           | 0.616                  |
| 3000           | 0.887                  |
| 3500           | 1.208                  |
| 4000           | 1.577                  |

36 in. x 36 in. (914mm x 914mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.025                  |
| 1000           | 0.078                  |
| 1500           | 0.156                  |
| 2000           | 0.259                  |
| 2500           | 0.388                  |
| 3000           | 0.533                  |
| 3500           | 0.706                  |
| 4000           | 0.914                  |

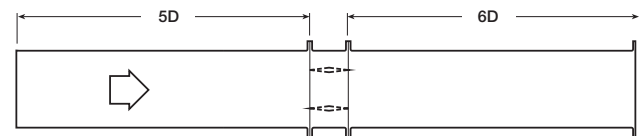
12 in. x 48 in. (305mm x 1219mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.034                  |
| 1000           | 0.103                  |
| 1500           | 0.213                  |
| 2000           | 0.357                  |
| 2500           | 0.541                  |
| 3000           | 0.757                  |
| 3500           | 1.017                  |
| 4000           | 1.326                  |

48 in. x 12 in. (1219mm x 305mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.036                  |
| 1000           | 0.102                  |
| 1500           | 0.214                  |
| 2000           | 0.359                  |
| 2500           | 0.547                  |
| 3000           | 0.772                  |
| 3500           | 1.034                  |
| 4000           | 1.339                  |

## AMCA 5.3



12 in. x 12 in. (305mm x 305mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.04                   |
| 1000           | 0.12                   |
| 1500           | 0.24                   |
| 2000           | 0.40                   |
| 2500           | 0.60                   |
| 3000           | 0.84                   |
| 3500           | 1.12                   |
| 4000           | 1.44                   |

24 in. x 24 in. (610mm x 610mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.03                   |
| 1000           | 0.09                   |
| 1500           | 0.17                   |
| 2000           | 0.28                   |
| 2500           | 0.43                   |
| 3000           | 0.60                   |
| 3500           | 0.80                   |
| 4000           | 1.03                   |

36 in. x 36 in. (914mm x 914mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.03                   |
| 1000           | 0.07                   |
| 1500           | 0.14                   |
| 2000           | 0.23                   |
| 2500           | 0.35                   |
| 3000           | 0.48                   |
| 3500           | 0.64                   |
| 4000           | 0.82                   |

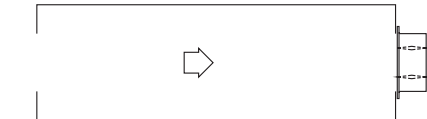
12 in. x 48 in. (305mm x 1219mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.03                   |
| 1000           | 0.10                   |
| 1500           | 0.20                   |
| 2000           | 0.34                   |
| 2500           | 0.51                   |
| 3000           | 0.72                   |
| 3500           | 0.97                   |
| 4000           | 1.26                   |

48 in. x 12 in. (1219mm x 305mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.03                   |
| 1000           | 0.09                   |
| 1500           | 0.19                   |
| 2000           | 0.33                   |
| 2500           | 0.50                   |
| 3000           | 0.71                   |
| 3500           | 0.96                   |
| 4000           | 1.24                   |

## AMCA 5.5



12 in. x 12 in. (305mm x 305mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.07                   |
| 1000           | 0.24                   |
| 1500           | 0.50                   |
| 2000           | 0.86                   |
| 2500           | 1.33                   |
| 3000           | 1.89                   |
| 3500           | 2.57                   |
| 4000           | 3.30                   |

24 in. x 24 in. (610mm x 610mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.05                   |
| 1000           | 0.19                   |
| 1500           | 0.41                   |
| 2000           | 0.71                   |
| 2500           | 1.10                   |
| 3000           | 1.56                   |
| 3500           | 2.13                   |
| 4000           | 2.80                   |

36 in. x 36 in. (914mm x 914mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.05                   |
| 1000           | 0.16                   |
| 1500           | 0.34                   |
| 2000           | 0.57                   |
| 2500           | 0.88                   |
| 3000           | 1.24                   |
| 3500           | 1.67                   |
| 4000           | 2.19                   |

12 in. x 48 in. (305mm x 1219mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.06                   |
| 1000           | 0.19                   |
| 1500           | 0.41                   |
| 2000           | 0.71                   |
| 2500           | 1.09                   |
| 3000           | 1.54                   |
| 3500           | 2.08                   |
| 4000           | 2.70                   |

48 in. x 12 in. (1219mm x 305mm)

| Velocity (fpm) | Pressure Drop (in. wg) |
|----------------|------------------------|
| 500            | 0.05                   |
| 1000           | 0.19                   |
| 1500           | 0.41                   |
| 2000           | 0.71                   |
| 2500           | 1.10                   |
| 3000           | 1.55                   |
| 3500           | 2.10                   |
| 4000           | 2.75                   |

Air leakage is based on operation between 32°F (0°C) and 120°F (49°C).  
Tested for leakage in accordance with ANSI/AMCA Standard 500-D, Figure 5.5.  
Tested for air performance in accordance with ANSI/AMCA Standard 500-D, Figures 5.2, 5.3 and 5.5.

Torque

Data are based on a torque of 7.0 in. lb./ft² (0.79 N·m) applied to close and seat the damper during the test.

| AMD-33               | Leakage Class*         |                     |                     |
|----------------------|------------------------|---------------------|---------------------|
| Maximum Damper Width | 1 in. wg<br>(0.25 kPa) | 4 in. wg<br>(1 kPa) | 8 in. wg<br>(2 kPa) |
| 60 in. (1524mm)      | 1A                     | 1                   | 1                   |



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\*Leakage Class Definitions

The *maximum* allowable leakage is defined by AMCA as the following:

- Leakage Class 1A - 3 cfm/ft² @ 1 in. wg (class 1A is only defined at 1 in. wg).
- Leakage Class 1
  - 4 cfm/ft² @ 1 in. wg
  - 8 cfm/ft² @ 4 in. wg
  - 11 cfm/ft² @ 8 in. wg
  - 12.6 cfm/ft² @ 10 in. wg

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