

ZD-1800 Commercial Zone Dampers

Since 1905, Johnson Controls has provided high-quality dampers that fit customer application and size requirements. Continuing the legacy of application-based products, a motorized residential/light commercial zone damper is now offered.

ZD-1800 Zone Dampers include:

- high-impact ABS plastic gears
- rigid 18-gauge frames
- 18-gauge blades

ZD-1800 Zone dampers are designed and built for light commercial and residential variable volume zone control only and must not be used for tight shutoff. These dampers are intended for motorized operation but can be used with a manual-locking quadrant when required. No seals are provided.

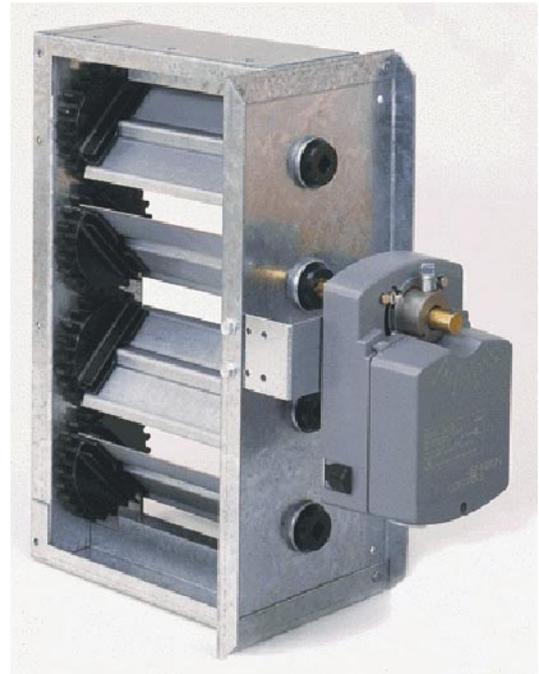


Figure 1: ZD-1800 with Electric Actuator

Features and Benefits	
<input type="checkbox"/> Plug-and-Play Out of Box	Quick and easy installation
<input type="checkbox"/> One-Minute Rotation Actuator	Factory-installed actuator that matches standard controller timing
<input type="checkbox"/> Gear Driven	Less friction, lower torque

Application Note

ZD-1800 commercial zone dampers come in sizes that meet different residential and commercial zone applications. These include:

- volume (air) control applications, which regulate air flow
- pressure control applications, which maintain a constant pressure

Standard Materials and Construction

Frame	18-gauge, galvanized steel, mechanically joined
Blades	18-gauge galvanized steel, 3-inch nominal width
Linkage	Plastic Gears
Blade Pin	1/2-inch round steel, zinc plated
Bearings	None
Side Seals	None
Blade Seal	None

Dimensional Data

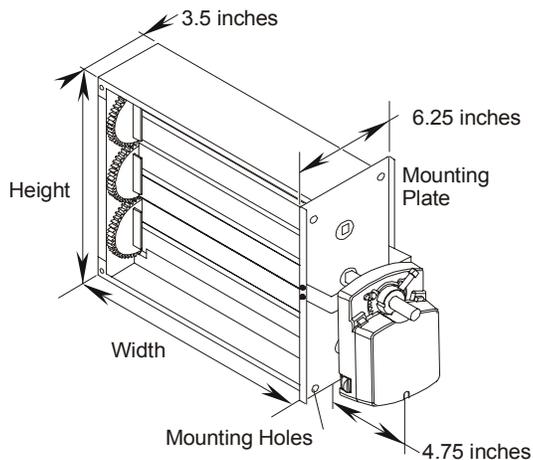


Figure 2: Damper Dimensions, inches

Table 1: Damper Dimensions

Size Limits	Width x Height, in.
Minimum	8 x 6
Maximum	30 x 30

Note: ZD-1800 balancing dampers are available in 2-inch increments. Actual damper dimensions will be 1/8-inch less than nominal for all sizes.

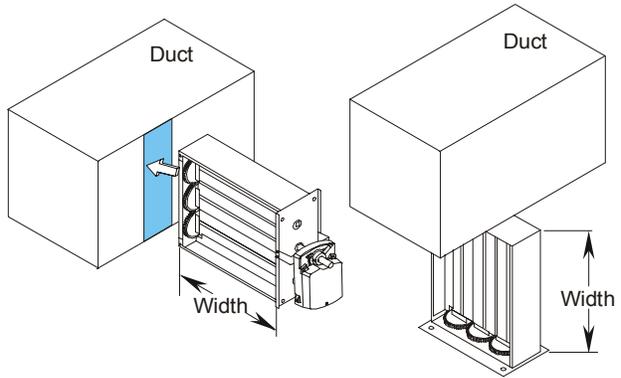


Figure 3: Damper Installation

Note: For installation with the blades in the vertical or horizontal position, the width dimension always relates to the length of the blades.

Specifications

Furnish and install Johnson Controls ZD-1800 commercial zone dampers in light commercial and residential applications.

Frames are to be constructed of formed 18-gauge galvanized sheet steel mechanically joined with plastic gears as linkage.

Blades are to be constructed with 18-gauge galvanized steel without seals. Damper blade width shall not exceed 4 inches. Blade operation is to be opposed.

Performance shall be designed and built for variable volume control only and must not be used for positive shutoff. The dampers are intended for either motorized or manual operation. The damper must be rated to operate over a temperature range of -40°F to 250°F (-40°C to 121°C).

Sizing shall be by the designer in accordance with accepted industry practices to ensure proper system performance.

Ordering

Commercial zone dampers are selected using *Zone Damper Selector* as detailed in the table below.

Example: ZOTDE-010x012 is a commercial zone damper with opposing blade operation and 18-gauge galvanized steel blades with dimensions of 10 inches wide x 12 inches high, with a M9106-AGA-2 actuator.

Table 2: Commercial Zone Damper Selector

	Ordering Code Number	Z	O	T	D	-	0	w	w	x	0	h	h
Product Family	Z = Zone Gear Drive Damper												
Blade Operation	O = Opposed												
Blade Type	T = 18-gauge Triple V Type Blade												
Bearings/Seals	D = No Bearing and No Seals												
Actuator Type	E = M9106-AGA-2 N = No Actuator												
Width Dimensions	008 to 030 inches in 2-in. increments												
Height Dimensions	006 to 030 inches in 2-in. increments												
Options	None												

Note: For installation with the blades in the vertical or horizontal position, the width dimension always relates to the width of the blades.

Performance Data

Leakage Resistance - Fully Closed	Not Rated for tight shutoff	
Operating Torque 0.5 in. static pressure, 100 fpm fully open approach velocity 1 in. static pressure, 1500 fpm fully open approach velocity	3.10 lb·in/sq ft 3.50 lb·in/sq ft	
Pressure Drop - Fully Open (in WG)	2000 FPM	3000 FPM
8 x 14 in. Horizontal	0.10	0.20
8 x 14 in. Vertical	0.38	0.90
Velocity and Pressure limits recommended to meet other performance specifications (not structural limits): 12-in.-wide-damper 24-in.-wide-damper 30-in.-wide-damper	6000 fpm at 6 in. static 4500 fpm at 6 in. static 3000 fpm at 4.5 in. static	
Mounting	Vertical or Horizontal Airflow	
Temperature Rating Without Actuator	-40°F to 250°F (-40°C to 121°C) No Actuator	
Temperature Rating With M9106	35 to 125°F (2 to 52°C); 90% RH maximum non-condensing	
Actuator Power Requirements	20 to 30 VAC at 50/60 Hz, 2.5 VA minimum, Class 2	
Actuator Electrical Connections	1/4-inch spade terminals	
Actuator 90 Degree Rotation Time	60 seconds at 60 Hz, 72 seconds at 50 Hz for 90 degrees.	
Rotation Range	Adjustable from 30 to 90°, clockwise or counterclockwise	
Actuator Enclosure	NEMA 2, IP32 (not for outdoor use without a protective cover)	
Agency Compliance, M910-AGA-2	UL 916 Listed, File E107041, Guide PAZX	
Approximate Weight	Minimum 8 x 6 in. 14 x 18 in. Maximum 30 x 30 in. M9106-AGA-2 Actuator	4 lbs. (1.8 kg) 10 lbs. (4.5 kg) 18 lbs. (8.1 kg) 1.5 lbs. (0.68 kg)

The above data was compiled from test data, corrected to standard temperature and pressure conditions, determined using instrumentation and procedures in accordance with AMCA Standard for Test Methods for Louvers, Dampers, and Shutters No. 500.

The performance specifications are nominal and conform to acceptable industry standards. For application at conditions beyond these specifications, consult the local Johnson Controls office. Johnson Controls, Inc. shall not be liable for damages resulting from misapplication or misuse of its products.



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