

RA-2000 Airflow Measuring System

Description

Since 1905, Johnson Controls has provided the highest quality control dampers and controls that fit your application and size requirements.

Johnson Controls presents the RA-2000 Airflow Measuring System with a one-piece ABS plastic flow sensing cross with a 16 inch (406 mm) diameter or less, and a two-piece anodized aluminum extrusion sensing tube with an 18 inch (457 mm) diameter and larger.

Refer to the *RA-2000 Airflow Measuring System Product Bulletin (LIT-1201677)* for important product information.

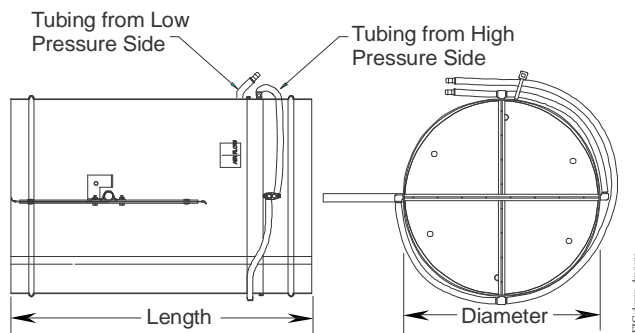
Features

- Formed Shroud — inserts easily into round ductwork
- One-Piece Construction — increases rigidity and strength
- Optional Factory-Installed Actuator — reduces installation and commissioning time
- Airfoil Shaped Flow Sensing Blades 18 inch (457 mm) Diameter and Larger or ABS Plastic Flow Cross on All Other Units — limit pressure drop through the damper

Selection Charts

Use the following to select the appropriate product:

1. Determine the required size from the customer's drawing(s).
2. Select the damper size for your application using the damper dimensions.



Damper Dimensions

Damper Dimensions¹

Diameter, in. (mm)	Length, in. (mm)
06 to 10 (152 to 254)	17 (432)
12 to 20 (305 to 508)	27 (686)
Over 20 (508)	31 (787)

1. Actual size is 1/8 inch (3 mm) less than nominal opening diameter.

3. Select the required part number.

Available Models

Code Number	Description
RAGddx	RA-2000 Airflow Measuring System

4. Enter the diameter of the damper.

dd = diameter (in inches), where
06 to 10 inches (1 inch increments)
10 to 24 inches (2 inch increments)

Note: Actual probe size is 1/8-inch (3 mm) less than nominal.

5. Enter the required options.



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x = option required, where

N = No Actuator, includes DMPR-RA001 DPT

W = With M9208-GGA-3 Actuator, up to 12 inches (305 mm) in diameter, and M9220-GGA-1 Actuator, 14 inches (356 mm) in diameter and larger.

Note: Option N includes a mounting bracket for a field-installed actuator.

Example: RAG09WNNC is a round airflow measuring system with a galvanized air damper that has integral seals, stainless steel bearings, cross flow sensors, factory installed modulating spring return actuator, no control signal (Field 7), and Normally Closed (N.C.) operation (Fields 8 and 9). The system dimensions are 9 inches (228 mm) in diameter by 17 inches (432 mm) in length.

Repair Information

If the RA-2000 Airflow Measuring System fails to operate within its specifications, replace the unit. For a replacement RA-2000 Airflow Measuring System, contact the nearest Johnson Controls® representative.

All RA-2000 Airflow Measuring Systems are built to order and cannot be returned due to ordering errors. All airflow measuring stations are backed by a 3-year warranty, which covers defects in materials or workmanship. Refer to the terms and conditions of sale for specifics.

RA-2000 Airflow Measuring System (Continued)

Technical Specifications¹

RA-2000 Airflow Measuring Systems					
Leakage - Fully Closed	0.15 scfm maximum per inch of blade circumference at 4-inch w.g.				
Operating Torque	8 in. diameter at 2 in. w.g. 16 in. diameter at 2 in. w.g. 24 in. diameter at 2 in. w.g.	52 lb-in 84 lb-in 116 lb-in			
Pressure Drop (in. w.g.) - Fully Open		1,000 cfm	2,000 cfm	3,000 cfm	4,000 cfm
	12 in. 24 in.	0.017 0.005	0.06 0.010	0.15 0.010	0.25 0.010
Velocity and Pressure	400 to 4,000 fpm				
Temperature Rating	Standard Operating Conditions: -40 to 200°F (-40 to 93°C) Actuator: -4 to 122°F (-20 to 50°C)				
Approximate Weight	Damper: 5 lb/sq. ft (2.7 kg/sq. ft) Actuator: 2.9 lb (1.6 kg) per actuator				

1. Measuring stations are tested at an Air Movement and Control Association International (AMCA) Certified Laboratory using instrumentation and procedures in accordance with AMCA Standard No. 610-93, Airflow Station Performance.

Refer to the *M9208-xxx-x Series Electric Spring Return Actuators Product Bulletin (LIT-12011480)* and *M9220-xxx-3 Electric Spring Return Actuators Product Bulletin (LIT-12011057)* for necessary information on operating and performance specifications for the actuator.