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Certified Ratings Program - Product Rating Manual for Airflow Measurement Stations

AIR MOVEMENT AND CONTROL ASSOCIATION INTERNATIONAL, INC.

The International Authority on Air System Components

AMCA Publication 611-15

Certified Ratings Program
Product Rating Manual for Airflow Measurement Stations

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AMCA Publications

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Related AMCA Documents

Related Publications	AMCA Publication 11	*Damper Application Manual for Heating/ Ventilating and Air Conditioning*
	AMCA Publication 600	*Application Manual for Airflow Measurement Stations*
Related Standards	ANSI/AMCA Standard 610	*Laboratory Methods of Testing Airflow Measurement Stations for Performance Rating*

Contents

1. Purpose

The purpose of this document is to prescribe and establish procedures to be used in the development and publication of certified performance ratings for airflow measurement stations. Certified ratings provide assurance to the buyer, user and specifier that the manufacturer's published performance ratings for airflow measurement stations are repeatable. The ratings also provide information on how the product was tested, what appurtenances (accessories or optional equipment) were accounted for in the ratings and other pertinent information.

This publication provides a procedure for the verification of the manufacturer's performance ratings on a regular schedule through check-testing of products in the AMCA International laboratory.

The publication also provides assurance that competitive ratings are comparable at the point where the output data is acquired and that they are based on standard test methods on ratings procedures.

This publication is an extension of the AMCA Certified Rating Program. Information on the operation of the program is given in AMCA Publication 11, *Certified Ratings Program – Operating Manual*.

2. Scope

This program applies to products or systems that output either analog electronic (E) or non-electronic (NE) signals. A non-electronic output is considered analog differential pressure, which requires additional hardware to convert differential pressure to an electronic signal.

3. Definitions

3.1 Airflow measurement station (AMS)
A sensing device which is used to measure the airflow rate in a system or fan appurtenance. It may consist of a single sensor or an array of sensors in permanent position in the air system. It may be supplied as a probe to be inserted into a ductwork or supplied in a casing approximating the size of the air system in which it is installed.

For the purposes of this Certified Ratings Program, an AMS shall be classified as one of the two following installation types:

- AMS in casing
- AMS insertion type.

3.2 AMS – non-electronic (differential [velocity] pressure) output type

Converts air velocity into a differential (velocity) pressure signal that correlates to the velocity or volume of air flowing through the AMS.

3.3 AMS – electronic output type

Converts air velocity into an electronic signal that correlates directly and proportionately to the velocity or volume of air flowing through the AMS.

3.4 Test reference airflow rate
The calculated airflow rate at measurement plane.

3.5 AMS performance variables

3.5.1 AMS airflow rate
The airflow rate, based upon the output (pressure, current or voltage of the AMS under test), calculated according to the manufacturer's instructions.

3.5.2 AMS differential pressure
The observed differential pressure between the high-pressure output and the low-pressure output of a differential pressure type AMS.

3.5.3 AMS electronic output
The observed voltage or current output of an electronic output type AMS that correlates directly and proportionately to the velocity or volume of airflow in a duct.

3.5.4 Face area of AMS
The total cross sectional area of a louver, duct, wall or AMS opening.

3.6 Shall and should

The word *shall* is to be understood as mandatory and the word *should* as advisory.

3.7 Determination

A complete set of six measurements at the AMS under test and of the reference airflow system, for one operational airflow test rating.