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Certified Ratings Program

Product Rating Manual for Airflow Measurement Stations

1. Introduction

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. Purpose and Scope

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; information on how the product was tested; what appurtenances (accessories or optional equipment) were accounted for in the ratings; and other pertinent information.

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

This standard 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 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 and Symbols

3.1 Airflow Measurement Station (AMS)

A multiple-point sensing device used to measure the airflow in a duct and which consists of a single or multiple arrays of sensors in permanent position across a duct system.

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 – 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 a duct.

3.3 AMS – Electronic output type

Converts air velocity into an electronic signal that correlates directly and proportionately to the air volume flowing through a duct.

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 of airflow in a duct.

3.5.4 Face area of AMS

The unobstructed area at the inlet (or outlet) of the AMS.

3.6 Shall and should

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

3.7 Point of operation

The point of operation is the relative position on the AMS input versus output curve corresponding to a particular airflow rate. It is controlled during a test by adjusting the position of the throttling device, by changing the nozzles or auxiliary fan characteristics, or by any combination of these.

3.8 Determination

A test determination is a complete set of measurements at the AMS under test and of the reference airflow system, for one operational airflow test rate.