

ANSI/AMCA Standard 610-06 (R2012)

Laboratory Methods of Testing Airflow Measurement Stations for Performance Rating

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**AIR MOVEMENT AND CONTROL
ASSOCIATION INTERNATIONAL, INC.**

The International Authority on Air System Components

AMCA Standard 610-06 (R2012)

Laboratory Methods of Testing Airflow Measurement Stations for Performance Rating



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AMCA Publications

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Related AMCA Documents

Related Publications

AMCA Publication 600

Application Manual for Airflow Measurement Stations

AMCA Publication 611

Certified Ratings Program - Product Rating Manual for Airflow Measurement Performance

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Laboratory Methods of Testing

Airflow Measurement Stations for Performance Rating

1. Scope

This standard covers field-installed airflow measurement stations for heating, ventilating and air conditioning applications.

This standard establishes uniform test methods for the determination of the performance characteristics and accuracy of airflow measurement stations under varied airflow rates and conditions.

It is not the purpose of this standard to specify testing procedures to be used for design, production or in field measurement practice.

Only tests that do not violate the mandatory requirements of this standard shall be designated as tests conducted in accordance with this standard.

2. Normative References

The following standards contain provisions that, through specific reference in this text, constitute provisions of this American National Standard. At the time of publication the editions indicated were valid. All standards are subject to periodic revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standard(s) listed below.

AMCA 99-0066-01, Definitions, Air Movement and Control Association International, Inc., 30 West University Drive, Arlington Heights, IL, 60004-1893 USA, 2001.

ANSI / AMCA 99-0068-03, Product Definitions, Air Movement and Control Association International, Inc., 30 West University Drive, Arlington Heights, IL, 60004-1893 USA, 2003.

ANSI / AMCA 210-99, Laboratory Methods of Testing Fans for Aerodynamic Performance Rating, Air Movement and Control Association International, Inc., 30 West University Drive, Arlington Heights, IL, 60004-1893 USA, 1999.

AMCA 500-D-98, Laboratory Methods of Testing Dampers for Rating, Air Movement and Control Association International, Inc., 30 West University Drive, Arlington Heights, IL, 60004-1893 USA, 1998.

SMACNA HVAC Systems Duct Design, 3rd Edition, 1990.

3. Definitions / Units of Measure / Symbols

3.1 Definitions

3.1.1 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.

3.1.2 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.

3.1.3 AMS – Electronic output type

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

3.1.4 Test reference airflow rate

The calculated airflow rate at measurement plane.

3.1.5 AMS Performance variables

3.1.5.1 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.

3.1.5.2 AMS Differential pressure

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

3.1.5.3 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.

3.1.5.4 Face area of AMS

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

3.1.6 Shall and should

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

3.1.7 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