

# ANSI/AMCA Standard 610-06

## 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

## **ANSI/AMCA STANDARD 610-06**

# **Laboratory Methods of Testing Airflow Measurement Stations for Performance Rating**



**Air Movement and Control Association International, Inc.  
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Arlington Heights, IL 60004-1893**

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## **Authority**

AMCA Standard 610 was originally adopted by the Membership of the Air Movement and Control Association International, Inc. on 23 March 1993. The 1995 revisions were adopted by the Membership on 19 July 1995, and the 2006 revisions were adopted by the Membership on 5 June 2006. It was adopted as an American National Standard by the American National Standards Institute (ANSI) and became effective on 20 September 2006.

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**Related AMCA Standards and 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

Definitions are traceable to AMCA International Standards 99-0066 and 99-0068 as indicated, and otherwise to ANSI/AMCA 210.

**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. (ANSI/AMCA 99-0068-03)

**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. (ANSI/AMCA 99-0068-03)

**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. (ANSI/AMCA 99-0068-03)

**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.