BARCOL-AIR | REFERENCE PROJECTS

ADNOC HQ | UAE

ECOCAMPUS | PARIS, FRANCE (BREEAM VERY GOOD)

KING ABDUL AZIZ INTERNATIONAL AIRPORT | JEDDAH, KSA (LEED)

SINGLE SOURCE, SINGLE RESPONSIBILITY

INTEGRATION TO ALL THIRD PARTY BMS

TESTING & COMMISIONING SUPPORT

BIM READY & REVIT FILES AVAILABLE

BARCOL-AIR
AIR DISTRIBUTION

BARCOL-AIR
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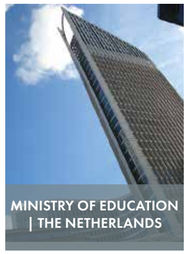
T +31 (0)299 689 300
E export@barcol-air.nl | **I** www.barcol-air.nl

ROYAL OMAN POLICE HOSPITAL | MUSCAT, OMAN



MINISTRY OF EDUCATION | THE NETHERLANDS

SAUDI ELECTRICAL COMPANY HQ | RIYADH, KINGDOM OF SAUDI ARABIA

WWW.BARCOL-AIR.NL

AIR FLOW MEASURING STATIONS

OUR GREEN COMFORT SOLUTION

BARCOL-AIR

BARCOL-AIR | AIR FLOW MEASURING STATIONS

The basic functions of air flow control such as: constant air volume, static pressure, supply/return balancing etc. are very simple and straightforward in theory. The practical application of these functions, however, is very difficult due to the small magnitudes of the measuring signals (velocity pressure in most cases).

Measurement

Most air flow control applications involve 4 stages of control process:

- Sensing the air flow based on a pressure differential signal (velocity pressure produced by an in-duct air flow sensor).
- Transducing and amplifying that signal into a format used by the controller (analogue, pneumatic, DDC, etc.).
- Converting the signal into a proper control relationship by use of a square root extractor to make the control signal linear to air volume. Analysing that control signal and if necessary adjust (reset) the air flow.

Accuracy

The overall accuracy of the control system (loop) is totally dependent on the intrinsic accuracy of each of these components and a small error in the first step will be amplified by the second and so on. Because a controller can control no better than the signal it receives, Barcol-Air developed the Flo-Cross® air flow sensor, which provides a highly accurate test signal, averaged over at least 24 test points and amplified by at least 2.5 times the velocity pressure. This sensor has a proven accuracy of 2.5% even with irregular duct approach. This accurate signal can be read manually through a pressure-gauge or can be an input to any Building Management System to be used to control such functions as: energy management, balancing supply and return air volumes, pressure control, monitoring and controlling minimum fresh air volumes, tenancy billing by floor or by zone, to provide a reliable accurate reference point for air flow commissioning in VAV systems, etc.

The Barcol-Air measuring and control station system consists of 3 different standard devices:

- Type AE..... for air flow measuring
- Type AF..... for air flow measuring and air flow control
- Type AH..... for air flow measuring and system pressure control

Energy Savings with "Air-Trac®" system

Constant volume systems can be optimised by one time commissioning of manual operated dampers. However, today from an energy point of view, constant volume systems are no longer used in air conditioned buildings. Variable Air Volume or Induction VAV systems in combination with modern Building Management Systems comply with today's energy saving requirements. In order to maximise energy savings under all load conditions it is necessary to monitor and control air flow and pressure during operation. Unfortunately nobody can afford having commissioning engineers working in the building 24 hours a day throughout the buildings life.

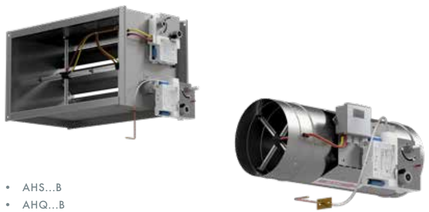
Air Flow Measuring Station

- AER...B
- AEP...B

AIR VOLUME MEASURING STATION

- AFS...B
- AFQ...B

AIR VOLUME MEASURING AND CONTROL STATION



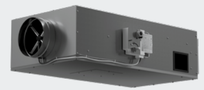
- AHS...B
- AHQ...B

AIR VOLUME MEASURING AND PRESSURE CONTROL STATION

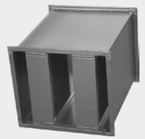
EXPORT PRODUCTS

Circular - VAV/CAV

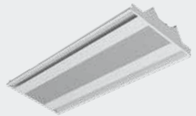
Rectangular - VAV/CAV



Induction VAV



Sound attenuators



Chilled Beams

Mechanical CAV

Mechanical CAV

Grills and Diffusers

Floor diffusers

Controls

FLO-CROSS® AIR FLOW SENSOR

- Multiple test points (at least 2 x 12 points) equally distributed in the duct area
- Only 1 diagonal straight duct required
- Better than 2.5% accuracy
- Centre averaged signal
- Linear amplified

HONEYCOMB AIR STRAIGHTENER

- Free area 98%
- Aluminium construction
- For exact Flo-Cross® readings
- For turbulant airflow

HCBA-IML-LI DIFFERENTIAL PRESSURE TRANSMITTER

- Backlit dot matrix display
- Output air volume 0...10Vdc (4...20mA)
- Accuracy by using auto zero point calibration
- Display either air volume or differential pressure (Pa)

DUBAI MALL FASHION AVENUE EXPANSION | DUBAI, UAE

DR. REDDY'S LABORATORIES | HYDERABAD, INDIA