

# Halton MSA

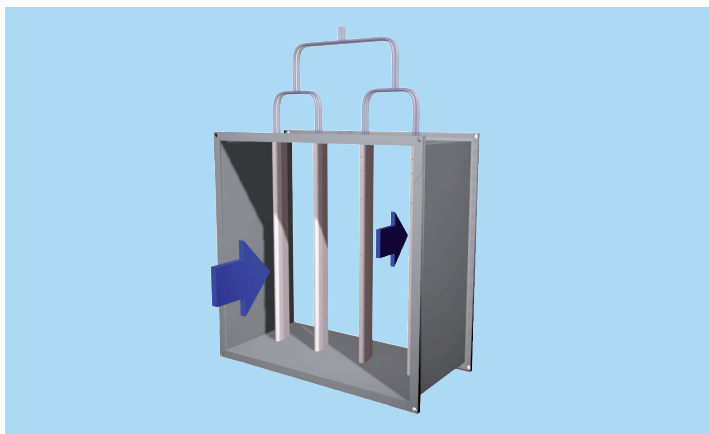
Airflow Measurement Unit



- Measurement based on differential pressure in measurement probe created by airflow
- Very accurate measurement
- Measurement probes can be removed for cleaning
- Galvanised steel design
- Classification of casing leakage EN 1751 class C
- Measurement inaccuracy less than 10%
- Installation independent of airflow direction

## MATERIAL

| PART                    | MATERIAL           |
|-------------------------|--------------------|
| Casing                  | Galvanised steel   |
| Measurement probe pipes | Aluminium          |
| Measurement tubes       | PVC and PP plastic |



## Function

Air flows through the measurement unit, which is installed tightly into the ductwork.

Airflow in a duct creates a pressure difference between the front and rear probes. The corresponding airflow rate can be defined by measuring the pressure difference sensed by the averaging probes.

## Measurement

Connect the measurement tubes to the measurement taps and to a manometer.

Read the pressure difference between the probes.

The airflow rate is calculated using the formula below or by reading the airflow rate directly from the diagram described in the performance section.

$$q_v = k \cdot \sqrt{\Delta p_m}$$

where

|              |                                    |
|--------------|------------------------------------|
| $q_v$        | calculated airflow rate, l/s       |
| K-factor     | see formula below                  |
| $\Delta p_m$ | measured differential pressure, Pa |

## Formula for K-factor calculation

$$K = W \text{ (mm)} \times H \text{ (mm)} \times 0,000904$$

where,

|   |                  |
|---|------------------|
| W | unit width (mm)  |
| H | unit height (mm) |

## DIMENSIONS

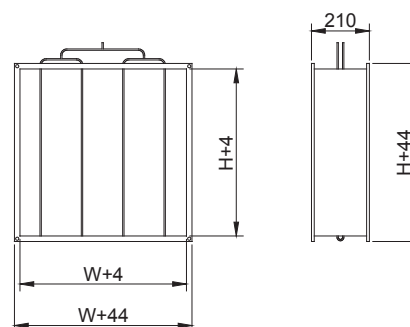
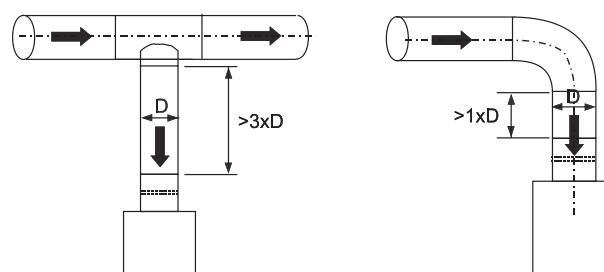
| W                | H                |
|------------------|------------------|
| 100,200,...,1600 | 100,200,...,1000 |

## Installation

Respect the safety distances between the measurement unit and flow disturbances (e.g. bends (2), T-branches (1)) presented in figure below in order to ensure the accuracy of the flow measurement. Installation is independent of airflow direction.

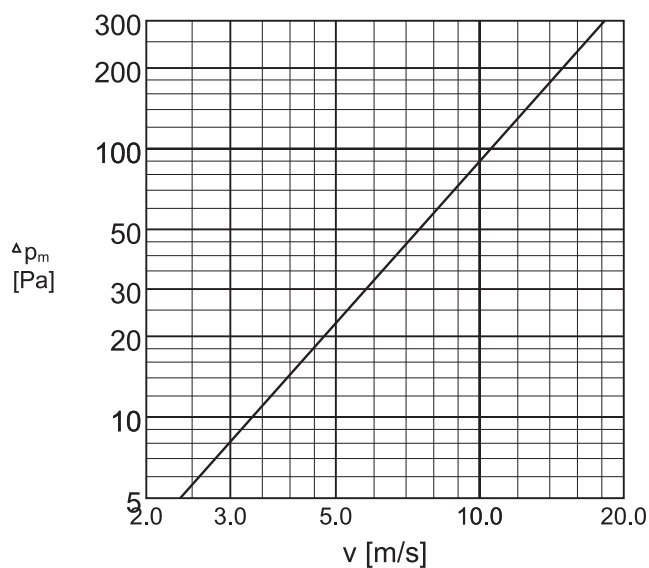
The hydraulic diameter is calculated using the formula below

$$d_h = 2 \times W \times H / (W + H)$$



## Measurement pressure

Pressure difference from measurement taps



### Suggested specifications

The casing of the measurement unit shall be made of galvanised steel.

The measurement probe pipes shall be made of aluminium.

Measurement shall be based on the principle of dynamic pressure difference created by airflow.  
Inaccuracy of the measurement method shall be less than 10 % of the reading.

### Product code

MSA/S-W-H

S = Measurement probes  
N Standard

W = Width  
100,+50,...,1600

H = Height  
100,+50,...,1000

Specifics and accessories

MA = Material  
CS Steel

Code example

MSA/N-100-100, MA=CS