

**MR– innovative product for controlled regulation & optimal comfort**

**What is a Constant Airflow Regulator (CAR)**

Whether it is for the **removal of polluted air** from toilets / kitchens / technical areas in a single or centralized ventilation system, OR for the **supply of hygienic, fresh/treated air** in an air conditioning system, there is a **growing need for optimum air-balancing** with precise and constant airflow regulation.

Managing to set real airflows as per those calculated in design stage, will **ensure hygiene** (ventilation systems) and **thermal comfort** (air-conditioning systems) while **limiting noise** and **optimizing fan or AHU operating costs**.

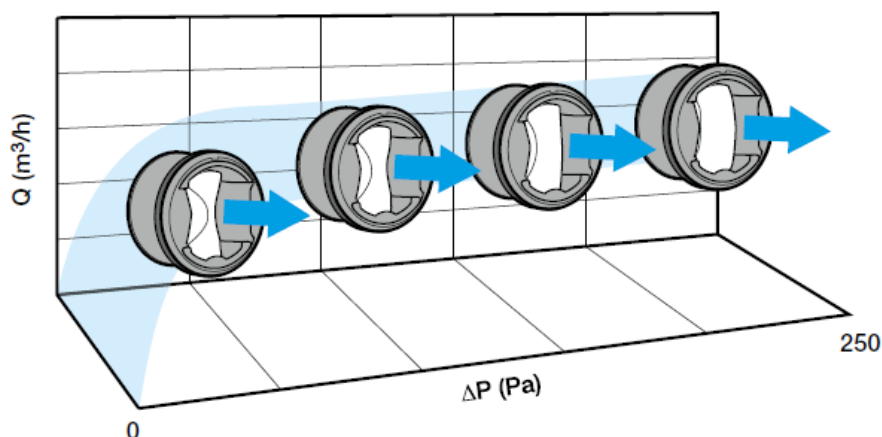
To meet this challenge, **Aldes offers a range of constant airflow regulators (CAR)** MR models with two different references:

1. MR Mono
2. MR Modulo

CAR- MR products has been developed with **an innovative concept for maintaining constant airflow automatically, even if the upstream / downstream differential pressure varies**.

**Principle of operation of MR**

- The main purpose of constant airflow regulator (MR) is to balance the airflow in HVAC / Ventilation ductwork.
- It can be easily inserted into a portion of a circular duct network in order to regulate an accurate and constant airflow within a large differential pressure range.
- The flexible membrane of MR inflates and deflates depending on the pressure differences between the upstream and downstream flow, thereby changing the cross-section of the flow and guaranteeing a constant air-flow, regardless of aeraulic variations in the ductwork (see illustration below).



- This principle of operation **guarantees constant airflow regardless of the pressure variations** in the ductwork

**MR Mono & MR Modulo range**

- Designed and produced in France. Each unit is individually checked to ensure the high quality product to be delivered to clients.
- Two models available:
  1. MR Mono: 1 code = 1 factory-set airflow
  2. MR Modulo: 1 code = several airflow set points (8 references)
- Maintains constant airflow as calibrated in factory (*MR Mono*) or as adjusted without any tools on site via Aldes Patented rotating ring (*MR Modulo*).
- Two differential pressure operating ranges:
  - 1- Standard range: 50 – 250 Pa → MR Mono & MR Modulo**
    - Airflows: 15m<sup>3</sup>/h – 650m<sup>3</sup>/h
    - Sizes: Ø 80mm, Ø 100mm, Ø 125mm, Ø 150mm, Ø 160mm, Ø 200mm, Ø 250mm
  - 2- High pressure range: 150 – 650 Pa) → MR Mono only**
    - Airflows: 120m<sup>3</sup>/h – 1100m<sup>3</sup>/h
    - Sizes: Ø 125mm, Ø 150mm, Ø 160mm, Ø 200mm, Ø 250mm
- Accuracy of regulation:
  - +/- 5m<sup>3</sup>/h for nominal airflow ≤ 50m<sup>3</sup>/h
  - +/- 10% for nominal airflow > 50m<sup>3</sup>/h
- Elastomer double lip tip seal for better positioning and air tightness



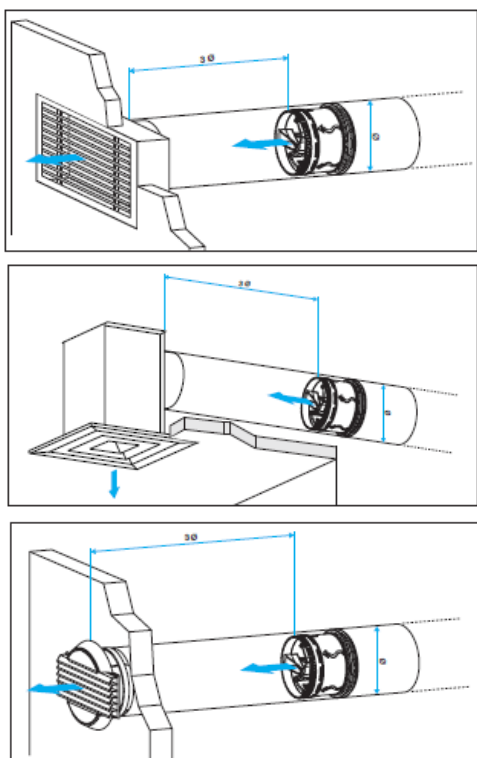
**MR Mono**



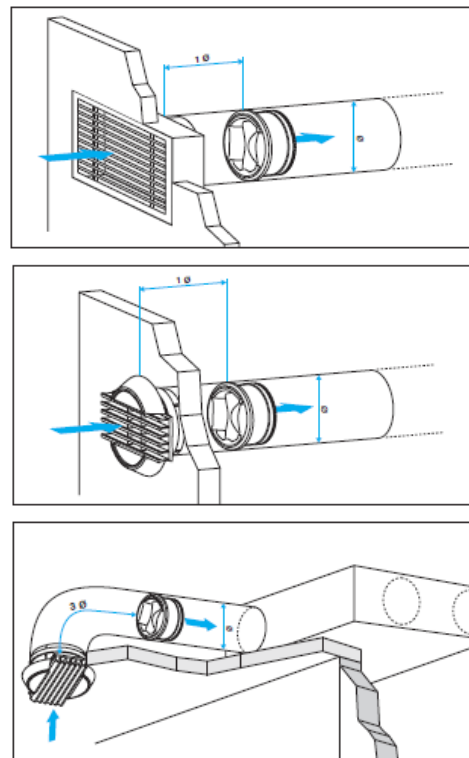
**MR Modulo**

**Typical applications**

**1. Supply airflow stabilization : (D = 3Ø)**



**2. Exhaust airflow stabilization: (D = 1Ø)**

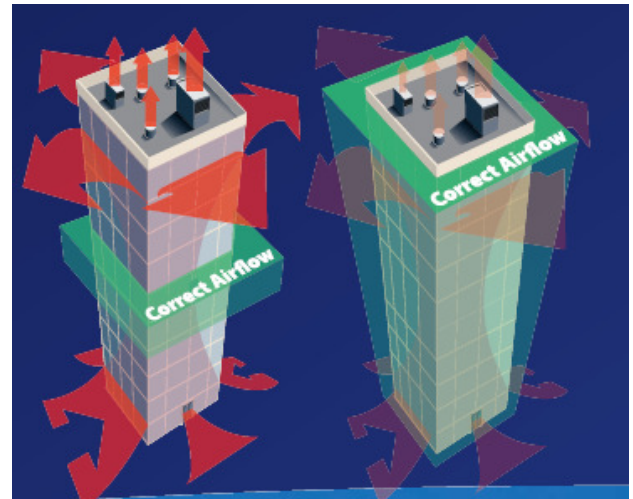


## Typical applications ... cntd.

### 3. Eliminating the stack effect

With cold outside air, warm indoor air expands and rises like a chimney (stack effect). This results in pressure variation to vertically ducted central ventilation systems, **causing over-ventilation** at some levels **that wastes energy**, and **under-ventilation** at other levels that **reduces indoor air quality**.

**Installing constant airflow regulator MR at each grille location user eliminates the stack effect on the ventilation system.** With manual VCD re-commissioning of the system is required (which generally doesn't happen after the first commissioning and handing over of the building).

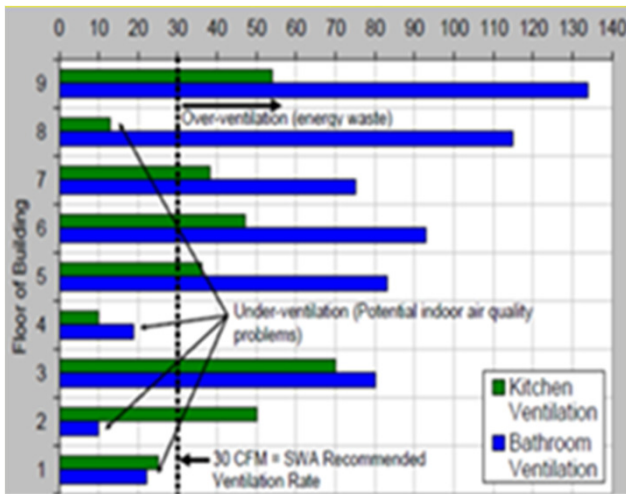


Without CAR Installation

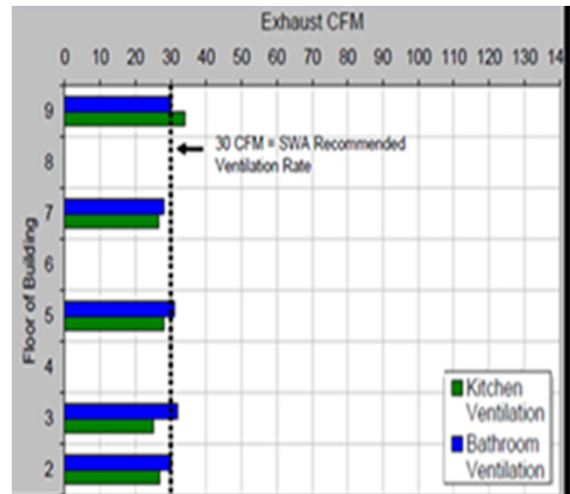
With CAR Installation

### 4. Energy savings & better indoor air quality

As per above explanation, **use of constant airflow regulator (MR) avoids energy waste and improves IAQ.**



Without MR Installation

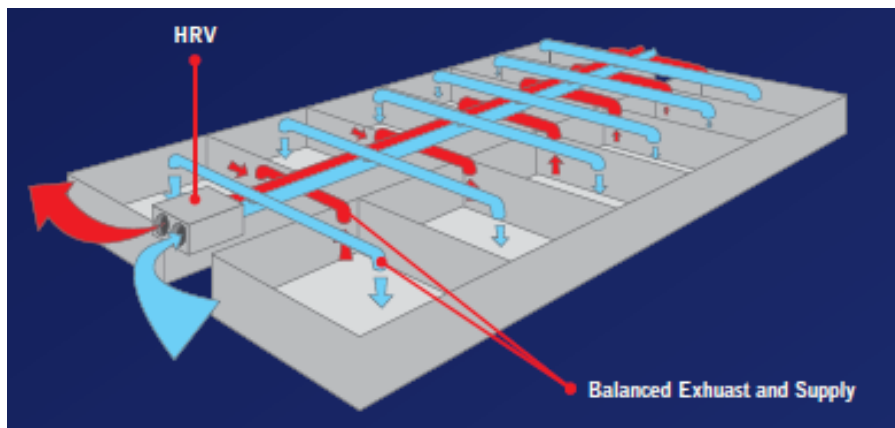


With MR Installation

**Typical applications ... cntd.**

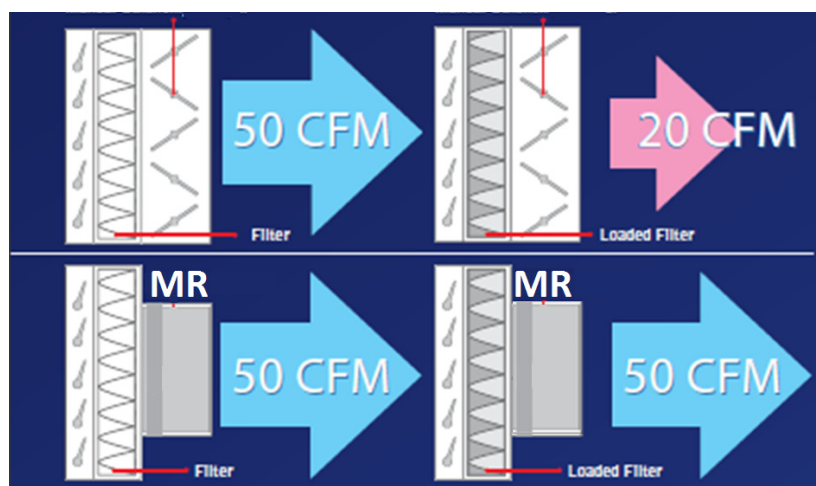
**5. Ensuring maximum efficiency of HRV unit**

Constant airflow regulator (MR) when used in heat and energy recovery systems, ensures maximum efficiency of HRV unit by automatically balancing the airflows in supply and exhaust ductwork as per designed values..



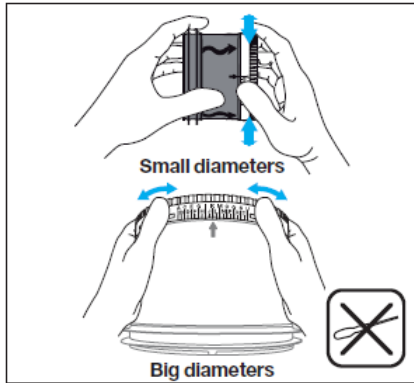
**6. Automatic correction**

Installation challenges and user interaction can result in “field” modifications in the actual system design. Constant airflow regulator (**MR**) **will automatically adjust to compensate for changes** in duct length, duct leakage, proper filter selection, filter loading, and damper settings, to always deliver the required airflow rate within its operating pressure range.

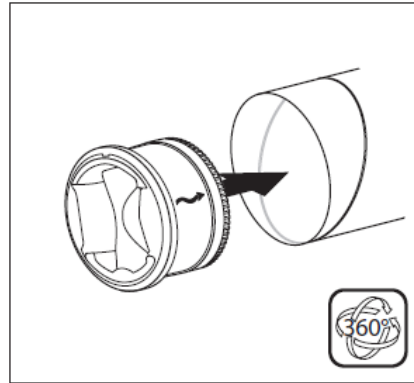


**Easy installation – No commissioning required**

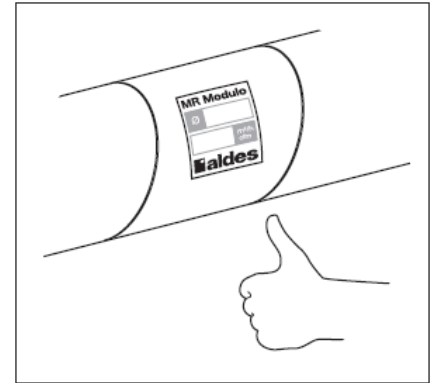
**MR Modulo:**



**Step 1: Adjust the airflow setting**  
Rotate the adjustment ring (Aldes Patent) for a tool-free setting of the airflow before installation at site.



**Step 2: Insert MR Modulo In Duct**  
Introduce the MR in the duct according to the arrow showing the airflow direction. Minimum straight upstream / downstream distances must be observed.



**Step 3: Product Localization**  
MR Modulo is delivered with a marker tag which will be completed (MR diameter and airflow setting) and placed directly onto the duct to indicate where MR Modulo has been installed.

**MR Mono:** → Only **Step 2** is required

**An innovative product full of advantages**

**Consultants:**

- Automatically regulates constant airflow in low or high pressure systems.
- Simplifies design engineering and compensates for minor errors.
- Reliability of acoustic and aeraulic performances.

**Contractors:**

- **User-friendly installation: no commissioning**, tool-free airflow setting (for MR Modulo), can be installed in both ducting and fittings.
- **No electrical or pneumatic sensors or controls, no wiring required (mechanically self-powered).**
- **360 degree installation:** horizontal or vertical or any desired angle.
- Innovative product with **maintenance-free design.**

For update regarding other products or sending any enquiry, please visit our website  
[www.aldes.ae](http://www.aldes.ae)

