

MR MAX

High Capacity Regulator



#HealthyLiving



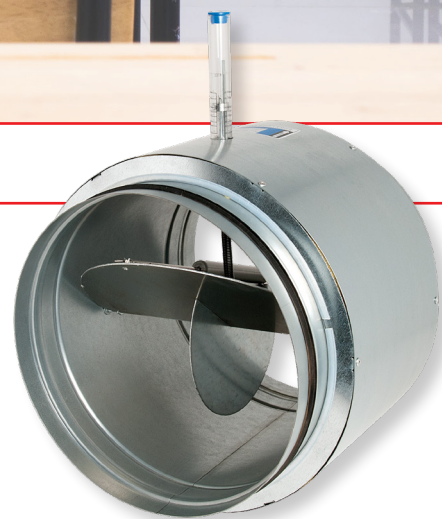
Use in centralized systems; automatically regulates airflow regardless of other actions occurring in the system, airflow can be reliably maintained over a wide range of pressure, no need for expensive sensors or controls

MR MAX

The model MR MAX Constant Airflow Regulator is a modulating orifice that automatically regulates airflows in duct systems to constant levels regardless of the variations affecting the ductwork, and without the use of electric or pneumatic sensors or controls.

The MR MAX can easily be inserted between two sections of round ductwork to maintain a reliably constant airflow over a wide range of differential pressure. The MR MAX is an ideal solution for meeting rooms, classrooms, and concert halls. The MR MAX will regulate airflow in supply, return, or exhaust duct systems in both low- and high-pressure installations.

MR MAX is available in a variety of sizes with airflow range from 40 to 2355 CFM to meet a wide range of airflow requirements.



Key Details

- 8 Diameters: 4", 5", 6", 8", 10", 12", 14", and 16"
- Airflow values from 40 to 2355 CFM (70 to 4000 m³/h)
- Operating Pressure Range: 0.2 to 4.0 in. w.g. (50 to 1000 Pa)
- Recommended Air Speed: 885 FPM (4.5 m/s)
- Accuracy within $\pm 10\%$ for nominal airflow > 60 CFM (100 m³/h)

Maintenance

All components are maintenance-free and corrosion-proof under normal conditions. The device and ductwork must be accessible to enable adjustment and maintenance.

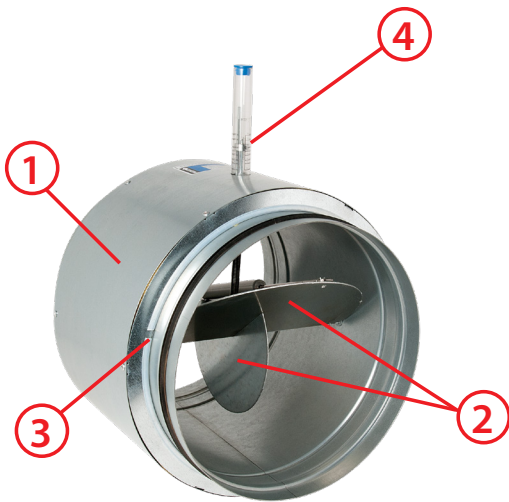
Warranty

Guaranteed for five (5) years, from date of shipment, against all defects in material or workmanship, provided that the material has been installed and used under normal conditions. This warranty is limited to the repair or replacement of the material.

Construction & Installation

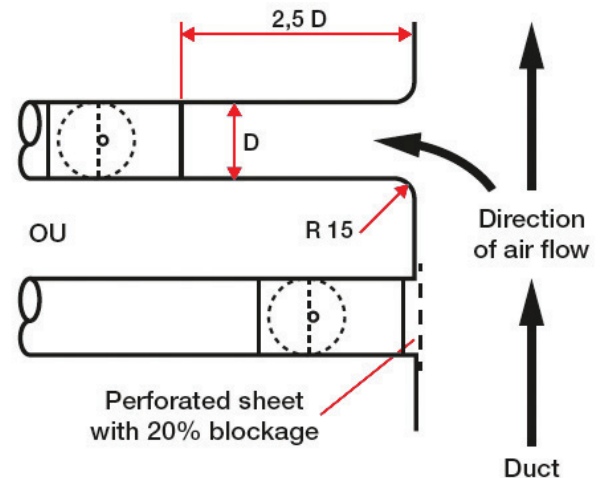
Construction

The MR MAX is constructed of a laser-welded, galvanized steel body, a translucent plastic control device, and a double-lip airtightness seal around the circumference to ensure a tight, no-leak fit. The integral control device is comprised of an aluminum damper and a stainless steel spring and shaft fitted to PTFE (polytetrafluoroethylene) bearings. A pneumatic piston damper prevents overshoot and oscillation of the control damper and ensures an accurate response and control behavior. Each MR MAX is designed and produced for control of air in temperatures ranging from -22° to 212°F (-30° to 100°C).



1. Laser-welded galvanized steel body.
2. Control device comprised of an aluminum damper and a stainless steel spring and shaft fitted to PTFE (polytetrafluoroethylene) bearings.
3. Double-lip seal.
4. Translucent plastic control device.

When connecting to the main duct, a straight-flow section of at least 2.5 times the diagonal must be maintained and the branch point must be rounded. If the controller is attached directly to the duct, a perforated sheet with 20% blockage should be used.



Installation

Mounting can be horizontal or vertical. The MR MAX orientation must correspond to the airflow direction indicated on the device, but the position of the damper does not affect performance.

The exact balancing of the control damper is ensured by a counterweight arranged vertically on the control damper, which ensures an accurate control response in all orientations. The flow profile in front of the flow controller should be cross-section-filling, since unfavorable flow conditions (such as asymmetric flow, deflection around sharp edges, etc.) can negatively affect the response and control behavior.

Typical Specification

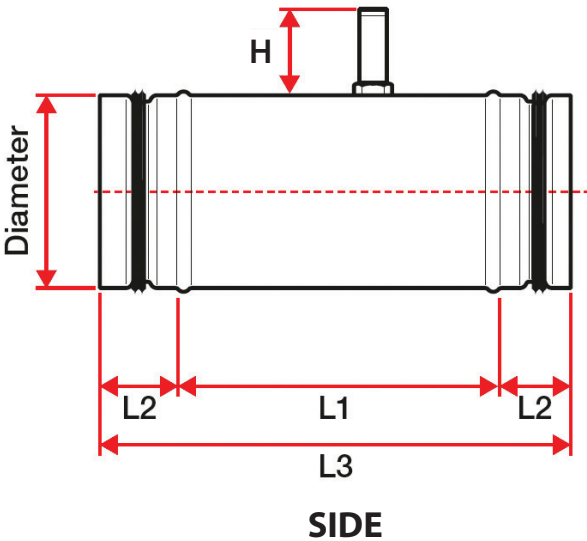
Model MR MAX Adjustable Constant Airflow Regulators by American ALDES Ventilation Corporation, Bradenton, Florida, shall operate solely on duct pressure and require no external power supply. Each regulator shall be capable of being field adjusted to the required airflow setpoint, as indicated on the schedule, by manual adjustment of the control device using an Allen/Hex key. The device shall be rated for use in air temperatures ranging from -22° to 212°F (-30° to 100°C).

Constant Airflow Regulators shall be capable of maintaining constant airflow within $\pm 10\%$ for nominal airflow > 60 CFM (100 m³/h) and ± 5 CFM (10 m³/h) for nominal airflow < 60 CFM (100 m³/h) throughout the target operating pressure range of 0.2 to 4.0 in. w.g. (50 to 1000 Pa). differential pressure. Sound power levels shall not exceed those for each size and CFM rating as scheduled.

The MR MAX is constructed of a laser-welded, galvanized steel body, a translucent plastic control device, and a double-lip airtightness seal around the circumference to ensure a tight, no-leak fit. The integral control device shall be comprised of an aluminum damper and a stainless steel spring and shaft fitted to PTFE (polytetrafluoroethylene) bearings. A pneumatic piston damper prevents overshoot and oscillation of the control damper and ensures an accurate response and control behavior.

All MR MAX Adjustable Constant Airflow Regulators will require no maintenance and must be warranted for a period of no less than five (5) years. MR MAX Adjustable Constant Airflow Regulators shall be installed in tight ducting systems in accordance with all applicable codes and manufacturer’s instructions.

Dimensions & Weight



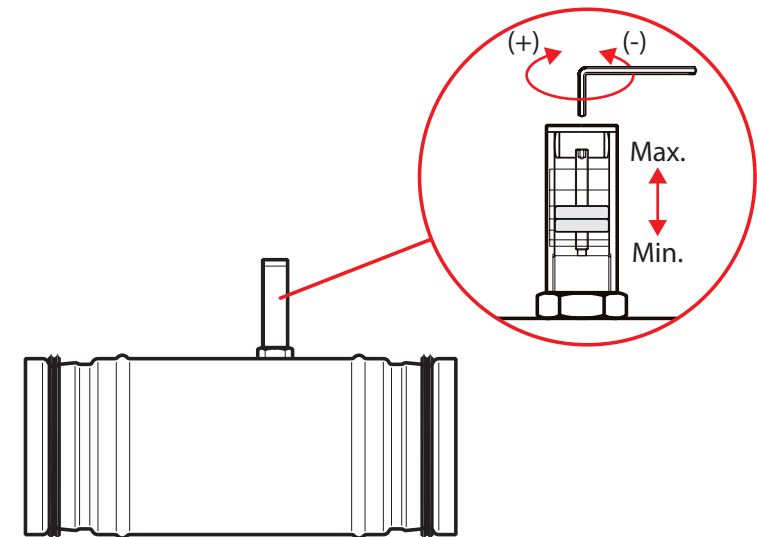
Part Number	Ø Diameter	L1	L2	L3	H	Weight
11016390	4" (100 mm)	6.69" (170 mm)	1.57" (40 mm)	9.84" (250 mm)	2.76" (70 mm)	1.32 lbs (0.6 kg)
11016391	5" (125 mm)	6.69" (170 mm)	1.57" (40 mm)	9.84" (250 mm)	2.76" (70 mm)	1.765 lbs (0.8 kg)
11016410	6" (150 mm)	6.69" (170 mm)	1.57" (40 mm)	9.84" (250 mm)	2.76" (70 mm)	2.43 lbs (1.1 kg)
11016393	8" (200 mm)	9.45" (240 mm)	1.57" (40 mm)	12.60" (320 mm)	2.76" (70 mm)	3.97 lbs (1.8 kg)
11016394	10" (250 mm)	9.45" (240 mm)	1.57" (40 mm)	12.60" (320 mm)	2.76" (70 mm)	5.51 lbs (2.5 kg)
11016395	12" (300 mm)	8.66" (220 mm)	3.50" (89 mm)	15.67" (398 mm)	4.33" (110 mm)	11.02 lbs (5.0 kg)
11016397	14" (355 mm)	11.81" (300 mm)	2.36" (60 mm)	16.54" (420 mm)	4.33" (110 mm)	12.13 lbs (5.5 kg)
11016396	16" (400 mm)	11.81" (300 mm)	2.36" (60 mm)	16.54" (420 mm)	4.33" (110 mm)	16.53 lbs (7.5 kg)

Performance

The MR MAX controls airflow accurately to within $\pm 10\%$ for nominal airflow > 60 CFM ($100\text{ m}^3/\text{h}$) and ± 5 CFM ($10\text{ m}^3/\text{h}$) for nominal airflow < 60 CFM ($100\text{ m}^3/\text{h}$) throughout the target operating pressure range of 0.2 to 4.0 in. w.g. (50 to 1000 Pa). The MR MAX operates via a minimum differential pressure that depends on the airflow up to a maximum differential pressure of 4.0 in. w.g. (1000 Pa) within the stable control range. The MR MAX will regulate airflow to the range in the range of 40 to 2355 CFM (70 to 4000 m^3/h). It will operate in the air speed range of 100 to 1575 FPM (0.5 to 8 m/s). The ideal air velocity is 885 FPM (4.5 m/s), and the speed should not drop below 530 FPM (2.7 m/s).

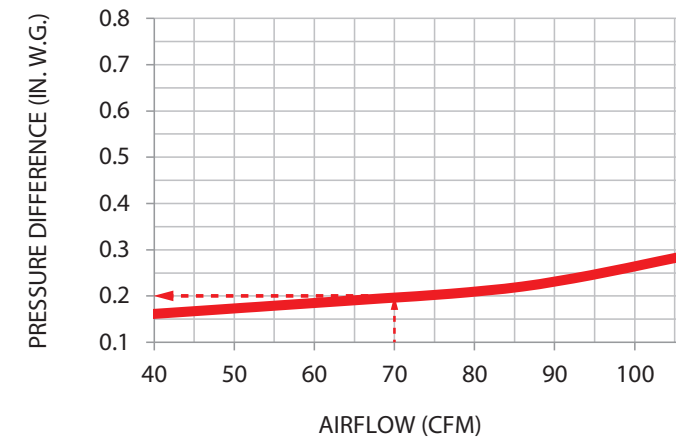
Adjusting the Airflow Setpoint

Each MR MAX comes preset to a specific airflow. The airflow setpoint can be modified, even after installation, using an Allen/Hex key, as demonstrated in the diagram below. The airflow setpoint must fall within the airflow range shown in the table below.



AIRFLOW RANGE		
Ø DIAMETER	PART NUMBER	AIRFLOW RANGE
4" (100 mm)	11016390	40-130 CFM (70-220 m³/h)
5" (125 mm)	11016391	60-165 CFM (100-280 m³/h)
6" (150 mm)	11016410	100-265 CFM (170-450 m³/h)
8" (200 mm)	11016393	150-530 CFM (250-900 m³/h)
10" (250 mm)	11016394	295-940 CFM (500-1600 m³/h)
12" (300 mm)	11016395	470-1650 CFM (800-2800 m³/h)
14" (355 mm)	11016397	530-1885 CFM (900-3200 m³/h)
16" (400 mm)	11016396	590-2355 CFM (1400-4000 m³/h)

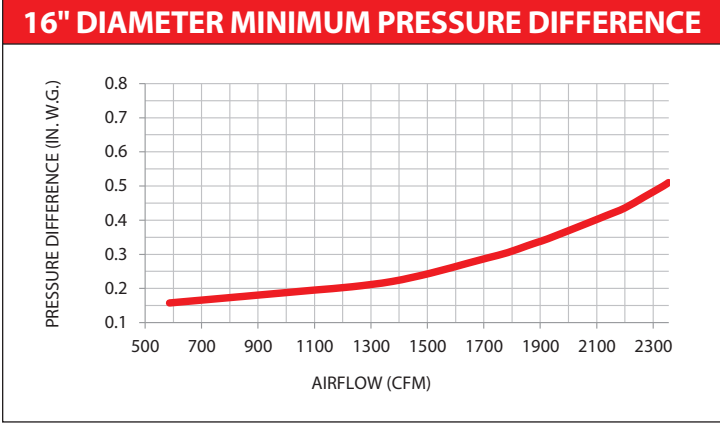
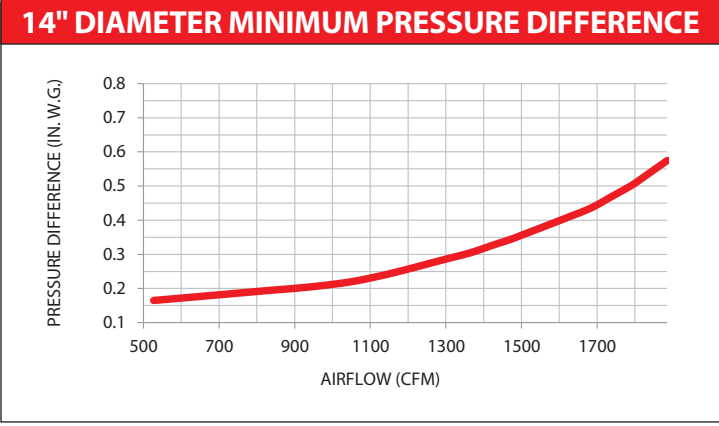
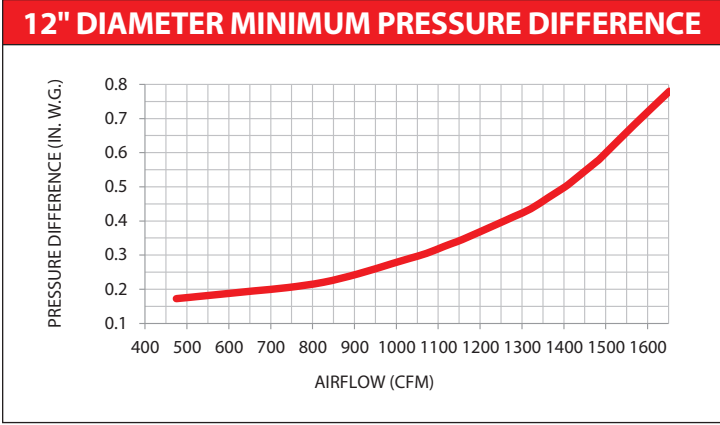
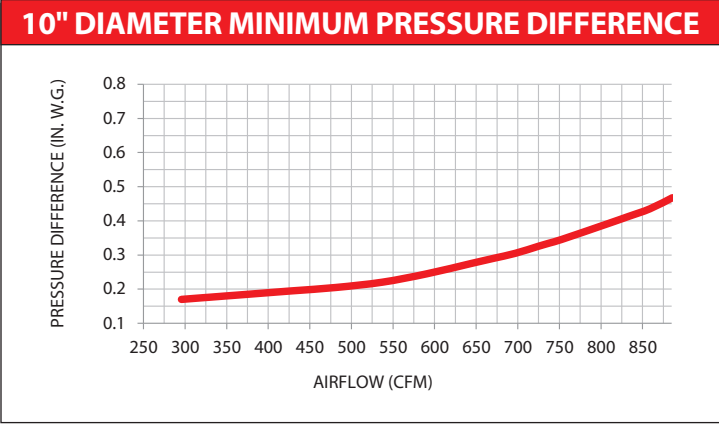
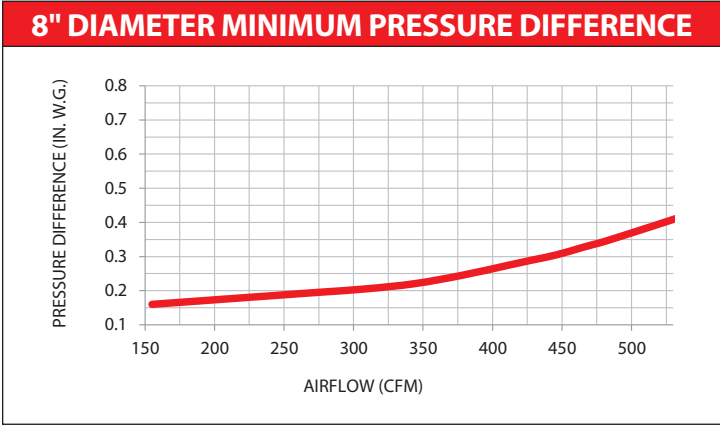
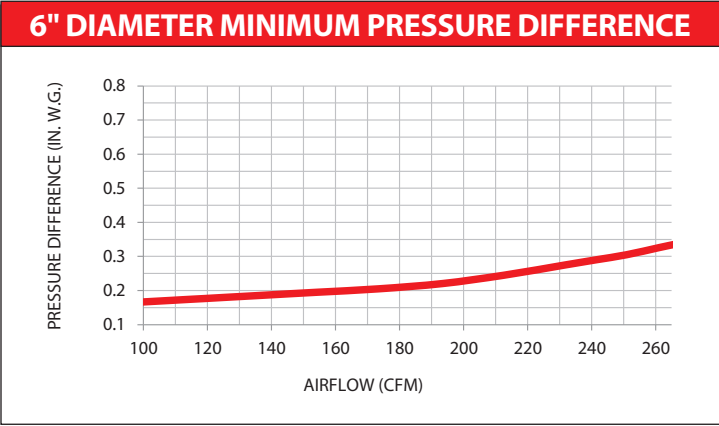
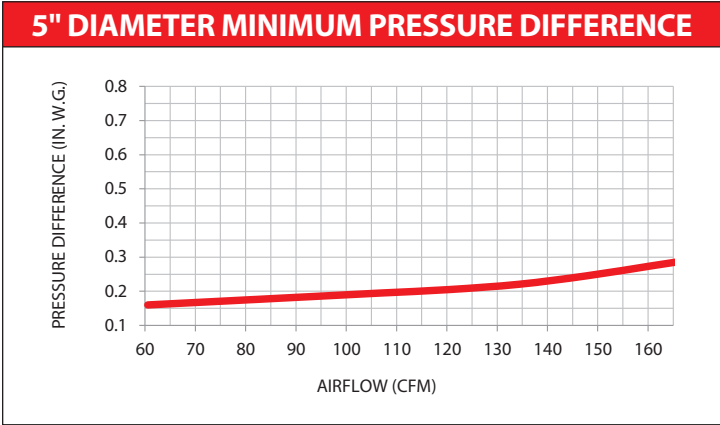
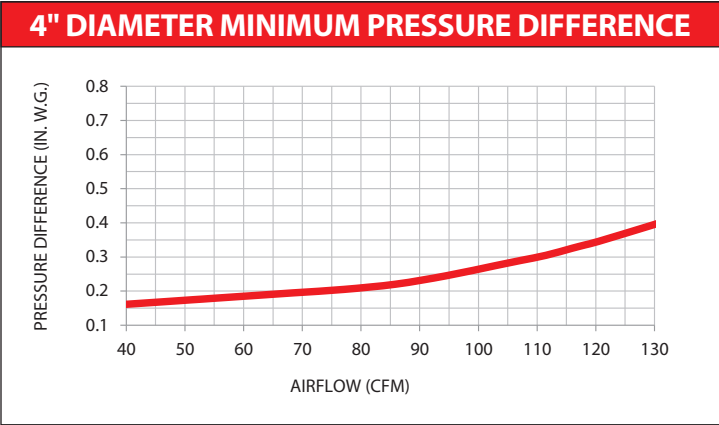
How MR MAX Works



The MR MAX operates from the minimum pressure differential, which is a function of the cfm setpoint, up to the maximum pressure differential of 4.0 in. w.g.

Example Shown: MR MAX 4" with the airflow setpoint at 70 cfm, requires a minimum pressure differential of 0.2 in. w.g. and has a maximum pressure differential of 4.0 in. w.g.

MR MAX Performance Data



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Distributed By:



American ALDES Ventilation Corporation
4521 19th Street Court East, Suite 104 - Bradenton, FL 34203 USA
Toll-Free: 1.800.255.7749 - Fax: 941.351.3442

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