

MDB-COMPACT PRO

CENTRAL FILTER SYSTEM WITH INTEGRATED FAN

The MDB-Compact PRO is a compact filter unit with integrated fan, filter cleaning system and dust drawer for connection to an external device, e.g. a welding robot or a cutting table. The fan is placed in a sound absorbing box.

The MDB-Compact PRO is supplied with intelligent control equipment ControlPro.

MDB = MultiDust® Bank



Image: MDB-4/Compact PRO

APPLICATIONS

The MDB-Compact PRO is intended for use for the following applications:

- MIG-MAG/GMAW welding
- TIG welding
- FCAW welding
- stick/MMAW welding



Combined with an OilShield (limestone feeder) the MDB-Compact PRO is also suitable for:

- oil mist
- heavy oil mist in welding fume

SPECIFICATIONS

Physical dimensions and properties

Material (housing):	electro-zinc coated steel (according to DIN EN 10152)
• steel grade	• DC01+ZE
• steel grade no.	• 1.0330

Colour:	• grey RAL 7011
• front and back	• yellow RAL 1004
• sides and top	

Dimensions:	refer to Table 1 Remaining specifications on page 4
• MDB-Compact	
• ControlPro/Panel *)	400 x 400 x 210 mm (15¾ x 15¾ x 8¼ in.)
• ControlPro/HMI	255 x 165 x 125 mm (10 x 6½ x 4⅞ in.)

*) excl. switches and cable glands

Filter cartridge

Filter cartridges are not included and must be selected and ordered separately. For more details: refer to the separate data sheet.

Available filter cartridges:	Filter material:
• CART-D Premium Plus	• BiCo spunbond polyester
• CART-D Premium	• spunbond polyester
• CART-D Economy	• cellulose
• CART-C	• BiCo spunbond polyester, antistatic
• CART-E	• BiCo spunbond polyester + PTFE impregnation

• CART-PTFE	• BiCo spunbond polyester + PTFE membrane
• CART-MB	• cellulose with polypropylene microfiber overlay, electrostatically charged

Fan	
Fan type	radial
Motor design	IEC
Motor protection	by PTC thermistor
Efficiency level	IE3
Motor speed	max. 3500 rpm

Compressed air system	
Required compressed air quality	dry and oil-free according to ISO 8573-3 class 6
Required pressure	4-5 bar (60-75 PSI)
Compressed air connection	push-in fitting: • in: G ¾ in. • out: 12 mm

Electrical data	
Connection voltage of fan	• 230V/3ph/60Hz* • 460V/3ph/60Hz • 575V/3ph/60Hz

* The compact design of the unit, in combination with a high air performance, is achieved by using 60 Hz fan technology. For this reason it is necessary to install a variable frequency inverter (VFD) for 50 Hz power grids (e.g. in Europe). For 60 Hz power grids a frequency inverter is optional.

Input voltage for magnetic valves	24V DC
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Ambient conditions	
Process temperature:	• 5°C (41°F) • nom. • 20°C (68°F) • max. • 70°C (158°F)
Max. relative humidity	90%

Suitable for outdoor use	no
Storage conditions	• 5-45°C (41-113°F) • relative humidity max. 80%

Product combinations	
SHIELD fire safety solutions (prevention):	
• SparkShield	• cyclonic spark arrester
• OilShield	• limestone feeder

Combination with SHIELD fire detection and suppression products is not possible

■ **Options and accessories**

CAR-KIT	Compressed air regulator
Compressed air sensor	(kit)
PRECO-N	Precoat material (for filter cartridges CART-D, CART-C and CART-E)
Adapter	<ul style="list-style-type: none"> • from Ø 250 mm to Ø 10 in. • from Ø 400 mm to Ø 16 in.

An adapter from Ø 355 mm to 14 in. is not necessary

Frequency inverter	<ul style="list-style-type: none"> • VFD-2.2 (2,2 kW / 3 HP) • VFD-4 (4 kW / 5 HP) • VFD-5.5 (5,5 kW / 7.5 HP) • VFD-11 (11 kW / 15 HP)
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Refer to Table 1 for selection of frequency inverter

■ **Scope of supply**

Fan-filter unit - Mounting hardware - ControlPro (Panel + HMI)

Not included: Filter cartridges - Frequency inverter

■ **Order information**

Number/package	1
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■ **Shipping data**

Harmonized Tariff Code	8421.3920.90
Country of origin	Netherlands

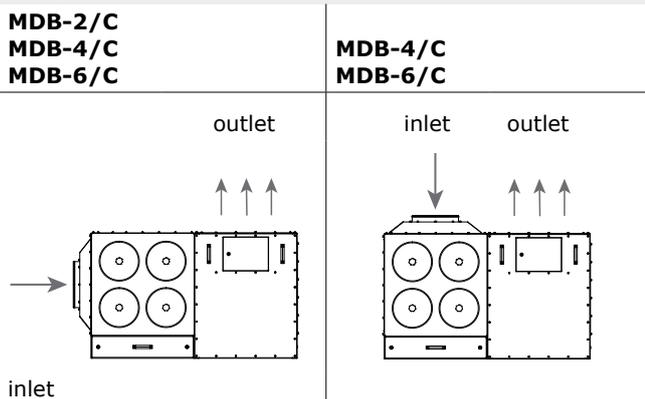
Remaining specifications: refer to Table 1 on page 4

APPROVALS/CERTIFICATES

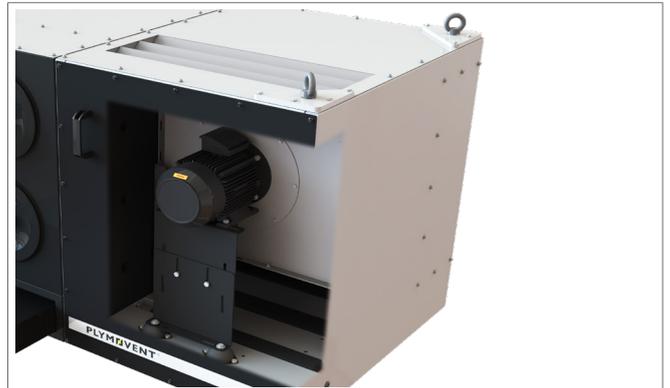
	
	Directive 2011/65/EC (RoHS) valid as of 8 June 2011
	Ref. UL-508A <ul style="list-style-type: none"> • 460V/3ph/60Hz (USA) • 575V/3ph/60Hz (Canada)
MDB-Compact with filter cartridges CART-PTFE/10 or CART-PTFE/15	W3 compliant
Fan	AMCA rated

AIRFLOW DIRECTION

Two possibilities:



FEATURES & BENEFITS



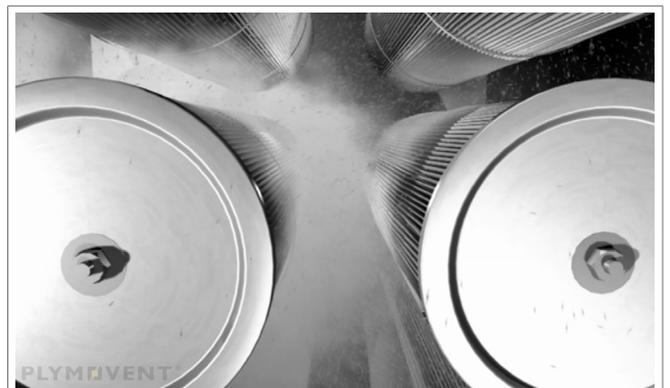
SilentFlow™ sound absorbing box along with innovative air flow path reduce both mechanical and airflow noise of the fan



Lockable high-capacity dust drawer with pull-out protection



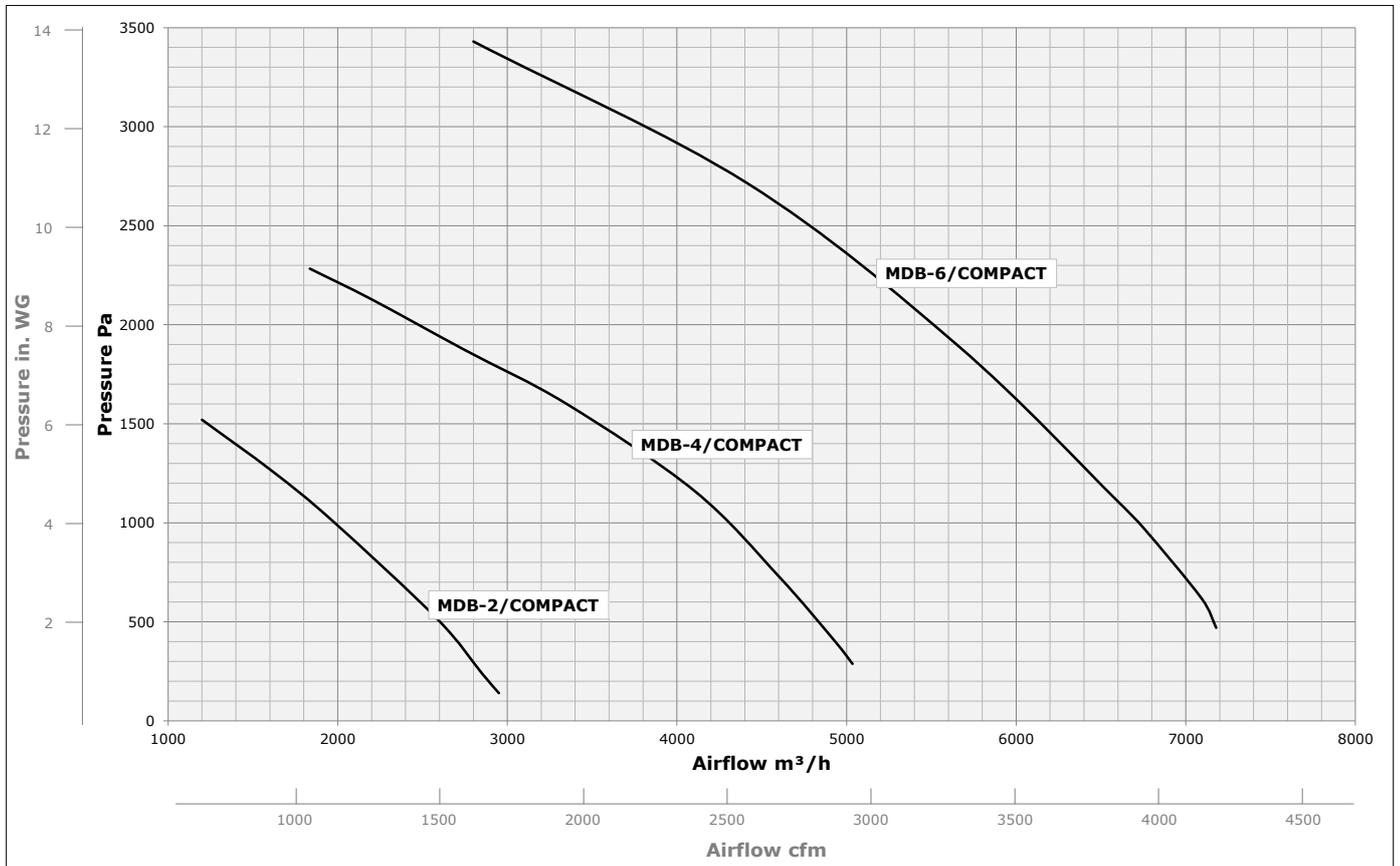
Efficient filtration of dust and welding fume



The effective RamAir™ pulse amplifier: individually cleaning of the filter cartridges by compressed air pulses

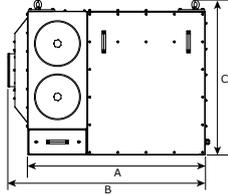
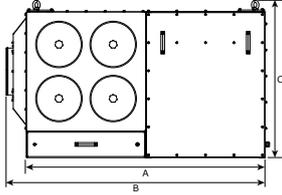
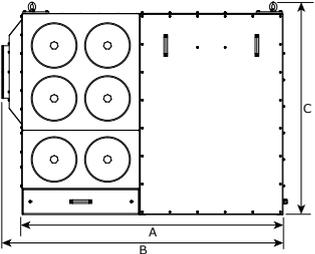
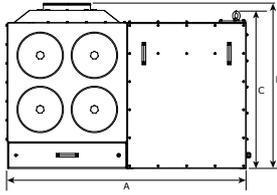
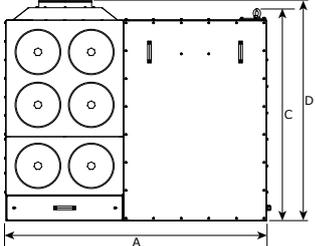
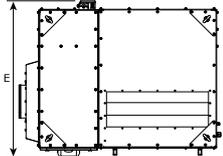
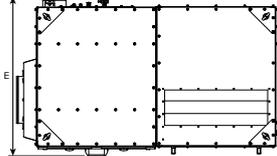
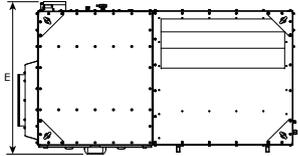


PERFORMANCE CHART (60Hz)



Net extraction capacity at the filter inlet (with new/clean filter cartridges)

Table 1 | Remaining specifications

		MDB-2/COMPACT	MDB-4/COMPACT	MDB-6/COMPACT			
■ Physical dimensions and properties							
Front view	Inlet left	 A 1348 mm (53 $\frac{1}{8}$ in.) B 1540 mm (60 $\frac{3}{8}$ in.) C 1190 mm (46 $\frac{7}{8}$ in.)	 A 1801 mm (70 $\frac{7}{8}$ in.) B 1970 mm (77 $\frac{1}{2}$ in.) C 1190 mm (46 $\frac{7}{8}$ in.)	 A 2004 mm (78 $\frac{7}{8}$ in.) B 2170 mm (85 $\frac{3}{8}$ in.) C 1641 mm (64 $\frac{5}{8}$ in.)			
	Inlet top		 A 1801 mm (70 $\frac{7}{8}$ in.) C 1190 mm (46 $\frac{7}{8}$ in.) D 1270 mm (50 in.)	 A 2004 mm (78 $\frac{7}{8}$ in.) C 1641 mm (64 $\frac{5}{8}$ in.) D 1720 mm (67 $\frac{3}{4}$ in.)			
Top view		 E 1206 mm (47 $\frac{1}{2}$ in.)	 E 1206 mm (47 $\frac{1}{2}$ in.)	 E 1206 mm (47 $\frac{1}{2}$ in.)			
Inlet connection		Ø 250 mm (9 $\frac{7}{8}$ in.)	Ø 355 mm (14 in.)	Ø 400 mm (15 $\frac{3}{4}$ in.)			
Capacity of dust drawer		33 litres (8 $\frac{3}{4}$ gallon)	72 litres (19 gallon)	72 litres (19 gallon)			
Weight (without filter cartridges and control equipment)		335 kg (739 lbs.)	425 kg (937 lbs.)	600 kg (1323 lbs.)			
■ Performance							
Power (fan)		2,2 kW (3 HP)	4,0 kW (5 HP)	7,5 kW (10 HP)			
Current draw at:		<ul style="list-style-type: none"> • 230V • 460V • 575V 	<ul style="list-style-type: none"> • 6,5 A • 3,25 A • 2,89 A 	<ul style="list-style-type: none"> • 12,0 A • 6,0 A • 5,0 A 	<ul style="list-style-type: none"> • 22,6 A • 11,3 A • 8,99 A 		
Max. airflow (with new CART-D filters; free-blowing)		2850 m ³ /h (1675 CFM)	5025 m ³ /h (2960 CFM)	7180 m ³ /h (4225 CFM)			
Sound level (nom.)		69 dB(A)	71 dB(A)	71 dB(A)			
<i>Nominal sound level at 1 m (3 ft) distance at 1000 m³/h (589 cfm) per filter cartridge</i>							
■ Frequency inverter							
Power grid:		Type	Art. no.	Type	Art. no.	Type	Art. no.
• 400V/3ph/50Hz Input voltage of fan via VFD		VFD-4 ¹⁾ 230V/3ph/60Hz	0000113799	VFD-5.5 ¹⁾ 230V/3ph/60Hz	0000113800	VFD-11 ¹⁾ 230V/3ph/60Hz	0000113801
• 230V/3ph/60Hz		VFD-4 ²⁾	0000113799	VFD-5.5 ²⁾	0000113800	VFD-11 ²⁾	0000113801
• 460V/3ph/60Hz		VFD-2.2 ²⁾	0000113802	VFD-4 ²⁾	0000113803	VFD-7.5 ²⁾	0000113804
• 575V/3ph/60Hz		VFD-2.2 ²⁾	0000104498	VFD-4 ²⁾	0000104499	VFD-7.5 ²⁾	0000104500
¹⁾ required ²⁾ option							
■ Compressed air system							
Compressed air consumption (per pulse)		35 nl (1 $\frac{1}{4}$ ft ³)	75 nl (2 $\frac{5}{8}$ ft ³)	75 nl (2 $\frac{5}{8}$ ft ³)			
Volume of compressed air tank(s)		10 litres (2 $\frac{7}{8}$ gallon)	22,9 litres (6 gallon)	11 + 22,9 litres (2 $\frac{7}{8}$ + 6 gallon)			

	MDB-2/COMPACT	MDB-4/COMPACT	MDB-6/COMPACT
■ Order information			
Article no.:			
• 230V/3ph/60Hz (236)	• 0000120784	• 0000120787	• 0000120790
• 460V/3ph/60Hz (536)	• 0000120785	• 0000120788	• 0000120791
• 575V/3ph/60Hz (636)	• 0000120786	• 0000120789	• 0000120792
■ Shipping data			
Gross weight	376 kg (829 lbs.)	471 kg (1038 lbs.)	653 kg (1440 lbs.)
Packing dimensions	1300 x 1600 x 1400 mm (51½ x 63 x 55½ in.)	1300 x 1900 x 1600 mm (51½ x 74¾ x 63 in.)	1300 x 2100 x 2050 mm (51½ x 82½ x 80¾ in.)

Application restrictions

Do **not** use the product for the following applications or in the following circumstances: polishing applications in combination with grinding, welding or any other application that generate sparks (fibres from polishing or abrasive flap disks are highly flammable and pose a high risk of filter fires when exposed to sparks) | aluminium laser cutting | oil mist | heavy oil mist in welding fume | arc-air gouging | extraction of aggressive fumes and gases (e.g. from acids, from alkaline, from soldering paste containing lithium) | extraction of hot gases (more than 70°C/158°F continuously) | grinding aluminum and magnesium | flame spraying | extraction of cement, saw dust, wood dust etc. | sucking cigarettes, cigars, oiled tissues and other burning particles, objects and acids | explosive environments or explosive substances/gases



Product type
Article no.
Product category
Version

MDB-Compact
Refer to Order information
central filter systems
260822/H

Always check the latest version on www.plymovent.com