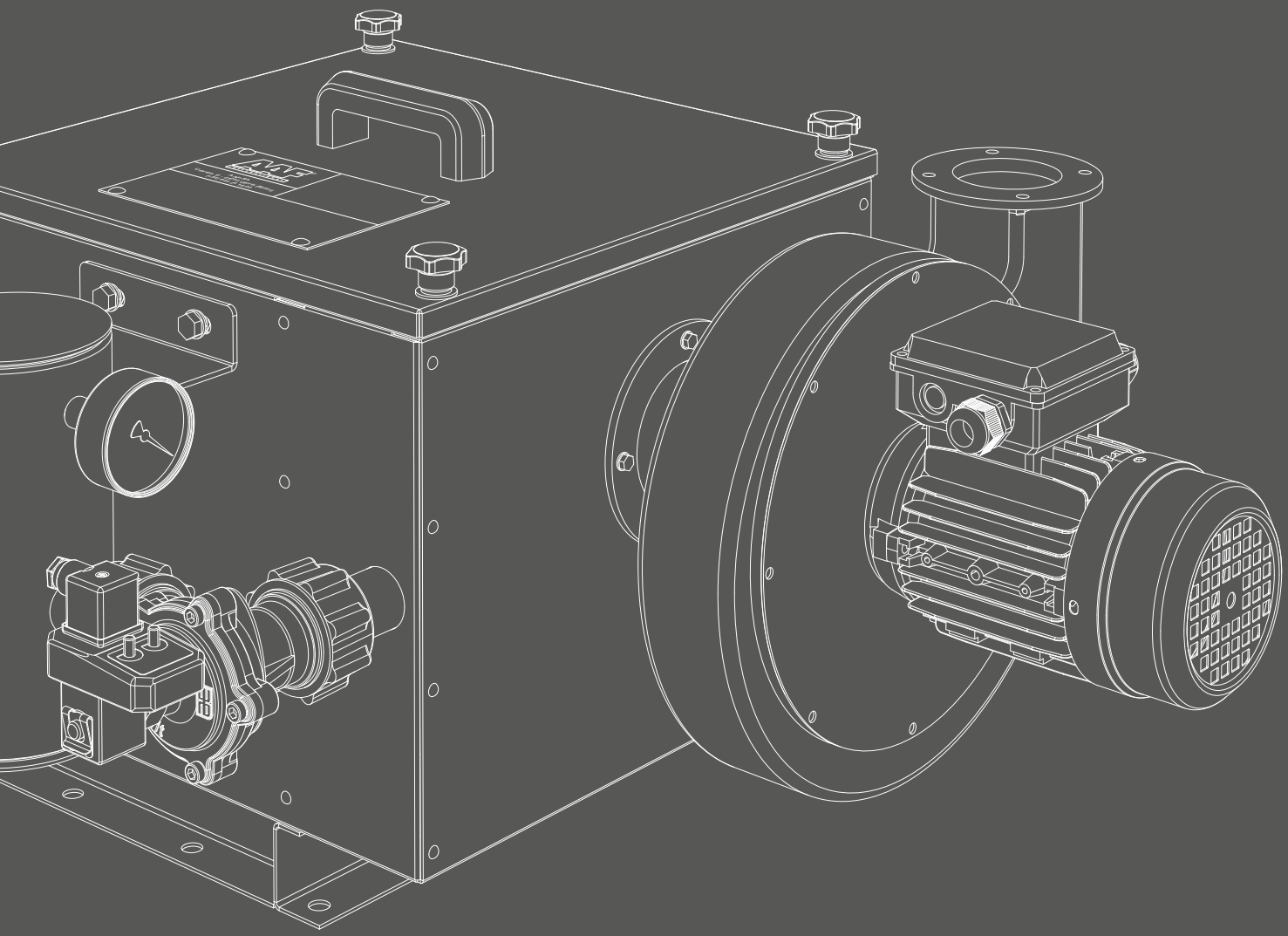
AIVY MiniPulse™

Installation and Operations Manual and Datasheet



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Bringing clean air to life.®

Meaning of the safety signs on the equipment

Caution. Finger trap

Caution. Compressed air

Gloves, safety boots, face mask, hearing protection and safety glasses required

TABLE OF CONTENTS

Meaning of the symbols used in this document

NOTE. Additional information related to a specific operation.

NOTICE. Noteworthy or important information that the user must bear in mind.

WARNING. Warning that operation may be dangerous. Possible bodily injury or material damages.

General safety guidelines

CAREFULLY READ THIS MANUAL PRIOR TO HANDLING AND INSTALLING THE EQUIPMENT.

AAF International will not be held responsible for improper use, or for any possible errors resulting from improper assembling/installation.

- Personnel responsible for the installation, handling and removal of the equipment as well as conducting maintenance must be properly qualified to carry out these tasks. To accomplish this, we must be familiar with and follow all basic safety recommendations (mechanical, electrical, potentially explosive atmosphere, etc.).

- The equipment should be operated under the conditions that are defined and recommended by the manufacturer in accordance with the order. Any equipment modification that has not been previously authorised by AAF International may alter its operation, which would entail a modification of the warranty framework and cancellation of the declaration of conformity.

- Contact the manufacturer prior to making any modifications to the dust collector, the safety system, the process, the product or the location of the filter. Otherwise, AAF International cannot guarantee the optimum performance of the filter.

- The filter shall be stored just as it was supplied. Remove the filter from its packaging only prior to installation.

- The user is responsible for checking that the equipment has not suffered any damage during shipment and that the technical data that appears on the nameplate matches the information listed in the order.

- The equipment may only be used when it is in perfect material condition as determined by a technician based on its intended use. Any faulty operation, especially when it affect the safety of the device, must be immediately corrected. Likewise, the equipment shall be used according to the instructions provided in this manual.

- The equipment incorporates different hoisting points to facilitated unloading it. The weight and size of the unit are indicated in the drawings or documentation supplied by AAF International. Shipping as well as handling must be carried out using equipment that is suitable for handling its weight and size. The equipment must not be hoisted from the eye bolts that are installed on the components. For example, the eye bolts that are installed on the motors, which are designed for independent transport.

- **Except in cases where the equipment has the *ATEX* certificate for operating in potentially explosive atmospheres (Directive 2014/34/UE), the unit must not be installed in these types of environments. Also, the equipment shall not be used in explosive applications.** It is important to note that if the *ATEX* condition is not expressly stated in the nameplate, the supplied unit is not suitable for use in explosive atmospheres under any circumstance.

- In cases where the equipment is going to be used for handling potentially explosive dust or is going to be located in a potentially explosive atmosphere, **all the motors shall be connected to the thermal protective devices to prevent exceeding the maximum temperature of the surface. The electrical equipment must be compliant with category EN 60079-0.**

- **If the dust to be removed can cause an exothermic reaction, including self-ignition, the installation must include an explosive protection system. To prevent this risk we recommend frequently cleaning the equipment to remove any layers of dust.**

- The equipment must be installed and anchored to a fixed based using the bolts that are supplied by the installer. The manufacturer shall not be responsible for an improper installation of the machine at its final location.

- The maximum operating temperature of the AIVY MiniPulse™ oscillates between 80 and 100 ºC, while capable of withstanding peaks up to 120 ºC.

- When the electrical connection is made by personnel that are not employed by AAF or any of its authorised installers, AAF International recommends paying special attention to the type of current and nominal voltage of the unit.

- The equipment shall be connected to electrical power supplies that incorporate short-circuit and over-current protections and shall comply with the low voltage regulations of the country where the machine is installed.

- Any work on the equipment must be carried out when the equipment is stopped and disconnected from the electrical and pneumatic power supplies as well as pneumatically depressurised (which keeps the cleaning system turned on after the power is disconnected until the cylinder pressure drops to 0 bar). To disconnect the power supplies:

  - The electrical power supply will incorporate a circuit breaker installed on the outside of the user panel.

  - The pneumatic power to the cylinder, provided by the user, shall have a shut-off valve.

- These disconnect devices on the power supplies shall have a lock-out if they cannot be monitored from the maintenance areas. The lock-out tags shall be clearly labelled.

- If an explosion occurs, a stop signal from the equipment is required.

- Maintenance on the equipment must be carried out under the proper lighting conditions.

- Once the maintenance is completed, the installation must be returned to its original state (fasteners, guards, locks, connections and grounds).

- In order to maintain the warranty and the validity of the declaration of conformity, the user must make an optimum use of the equipment and carry out regular maintenance on the machine, removing any dust and inspecting the cleaning mechanism, among other tasks. AAF International recommends carrying out this practice at least once a month.

- While maintenance is being carried out, personnel assigned these tasks must use appropriate personal protective equipment according to the nature of the task (toxicity, harmfulness, etc.).

- If the unit is equipped with an internal fall protection screen, its condition must be inspected periodically and replaced if any damage is found.

- To guarantee a proper operation of the equipment, only authorised parts and original spares supplied by the AAF International shall be used. Refer to the spare parts information provided for this equipment.

- Original parts and accessories have been especially designed for this machine. Take into account that parts and accessories not supplied by the manufacturer have not been tested by them and therefore, installing these parts may negatively affect the machine's properties. The manufacturer shall not be responsible for any damage caused by non original parts or accessories.

- For cleaning the filtering fabric, we recommend using compressed air on those filters that can be cleaned using reverse air flow. However, if the product being treated is flammable and excessive air can be harmful in case of an explosion, we can opt for using some type of inert gas instead of air.

- During the risk assessment of possible ignition sources in dust and gas mixtures with a low level of EMI, a risk of electrostatic discharge has been detected in accumulated dust. In these cases, safety will be based on using a conductor container, dust of an average particle size lower than 400 µm and frequent emptying.

- We recommend using a sprinkler system in applications that involve handling explosive or flammable materials.

- **The safety of the equipment may be negatively affected if any changes are made in the original design of the filter or the process without modifying the safety system. A defective or negligent maintenance can also affect the safety of the equipment.**
- This unit has been designed for specific filtering conditions (flow and temperatures included in the Datasheet). If the conditions change or new filtering applications are required, AAF International recommends consulting with the manufacturer regarding other units that may be suitable for handling these new requirements.
- No fan can be considered fully sealed since they are equipped with an open inlet or outlet. For this reason, the internal and external atmospheres can be considered to be the same in terms of the classification of explosive atmospheres.
- Standard fan assemblies must not exceed 3000 rpm (50 Hz) in systems equipped with an inverter.
- AAF International shall not be responsible in cases where in order to disassemble the equipment or its spares, these are not cleaned and disposed of in accordance with current codes and standards and it is not carried out through a manager authorised to recycle this type of waste.
- As part of their commitment to protect the environment, AAF International recommends responsibly disposing of the waste elements resulting from equipment use (packaging materials and rubbish, as well as cartridges or bags that are removed to be destroyed).
- The machine must be maintained and operated exclusively by qualified and authorised personnel. New personnel must be properly trained in operating the system.
- The machine may be operated by a single person. In cases where more than one person is located in the installation area, the responsibility of operating the machine must be unequivocally coordinated by this personnel.
- All unauthorised personnel must remain outside the machine working area.
- The application software and control of the system can only be operated and modified by personnel authorised and qualified to carry out these tasks.
- The system shall only be adjusted by personnel authorised and qualified to carry out this task.
- Any operating mode that might place the safety of the machine at risk shall be avoided.
- The stickers that are located on the equipment shall never be removed. The user must be familiar with all safety information as well as the hazards associated with the machine. This information must be kept in a legible format along with the rest of the information about the machine.
- Personnel must not let their hair down, wear baggy clothing or jewellery (excluding rings, chains or collars) when they are in contact with the machine. Otherwise, bodily harm may occur as a result of the user's clothing becoming entangled in the machines moving parts. The operator must follow the safety regulations related with accident prevention at the workplace.
- Regularly verify operators are familiar with the safety measures as well as the hazards in accordance with the machine documentation.
- If any modifications are discovered on the machine that affect its safety or modify the way it operates, the machine shall be immediately stopped and responsible personnel shall be notified.
- Original parts and accessories have been especially designed for this machine. Take into account that parts and accessories not supplied by the manufacturer have not been tested by them. Installing these parts may negatively affect the machine's properties. The manufacturer shall not be responsible for any damage caused by non original parts or accessories.

- Follow the fire prevention regulation when handling flammable products.
- The fire prevention installation must be expanded and adapted to the machine's location by the user if necessary.
- Immediately turn off and close the machine if a malfunction occurs. Correct the malfunction as soon as possible.
- Before turning on the machine, make sure nobody is in a dangerous situation that could be injured when the machine is turned on.
- The commissioning, maintenance and inspection tasks, including the replacement of parts or components, shall only be carried out by qualified personnel.
- If the machine is turned off for maintenance or repair, the machine must be protected against inadvertent start-ups by opening the electrical power circuit breaker and locking it out with a padlock.
- When performing maintenance on the machine to replace a component that is located above the head, use appropriate safety ladders or platforms. In no case shall operators climb on the machine or use any of its parts as a ladder.
- The operator must ensure that only authorised personnel use the machine.
- At least once per shift, operators must inspect the machine looking for visible defects and inform appropriate personnel if a modification is discovered affecting the safety or operation of the machine.
- If safety equipment needs to be removed for the purpose of installing a component on the machine or to conduct maintenance or repairs, the safety equipment must be reinstalled and immediately inspected once the repair or maintenance task has been completed.
- Machine users must ensure the work station is properly illuminated for safety and ergonomic reasons.
- When handling the equipment, make sure the external surface temperature is lower than 60ºC.
- Make sure the installation is equipped with a lightning arrestor.

Declarations of conformity

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CE EU Declaration of Conformity

AAF-SA declares that the following product:

Designation	AIVY MiniPulse™
Model	2.2 V
	2.2 M
	4.4 V
	4.4 M

has been designed and manufactured in compliance with the following European Directives:

- **Directive 2006/42/EC** on machinery
- **Directive 2014/68/EU** on the harmonisation of the laws of the Member States relating to the making available on the market of pressure equipment
- **Directive 2014/30/EU** on the harmonisation of the laws of the Member States relating to electromagnetic compatibility
- **Directive 2014/35/EU** on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits

Vitoria (Spain), November 2022
Jesús Zabala *Global Product Director*

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- **Directive 2014/35/EU** on the harmonisation of the laws of the Member States relating to the making available on the market of electrical equipment designed for use within certain voltage limits
- **Directive 2014/34/EU** on the harmonisation of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres

  Being its marking *(check Equipment Nameplate to see which applies):*

  II 2D Ex h IIIC T135ºC Db
  II 2G Ex h IIB T3 Gb
  Technical file: LOM 06ATEX0021

  II 3D Ex h IIIC T135ºC Dc
  II 3G Ex h IIB T3 Gc

Vitoria (Spain), November 2022
Jesús Zabala *Global Product Director*

The applied harmonised standards are EN ISO 80079-36 (2016), EN ISO 80079-37 (2016) and EN 1127-1 (2011). In the case of a **2DG** unit, the applicable technical documentation has been provided to the Notified Body for safekeeping "Laboratorio Oficial J. M. Madariaga-LOM", with address at Eric Kandel, 1 – 28906 Getafe (Madrid), with the following codes: Supplement Number 5, with code "AAF ATEX-201014" (provided to LOM for safekeeping on 24 February 2021), of the Technical Report Custody Certificate LOM 06ATEX0021, with code "AAF ATEX 60227".

In the case of a **3DG** unit, take into account that the unit referred to in this declaration has been manufactured based on the assembly comprised of a machine manufactured bag filter in compliance with Category 2, with marking ⓔ II 2 D Ex h IIIC T135ºC Db and/or ⓔ II 2 G Ex h IIB T3 Gb (Technical Report and its 5 supplements provided to the Notified Body "Laboratorio Oficial J. M. Madariaga-LOM", with address at Eric Kandel, 1 – 28906 Getafe (Madrid), with the following codes: LOM 06ATEX0021, coded as AAF ATEX 60227), which external part and without affecting its internal part as far as potentially ignition sources is concerned, has been equipped with sub-units which, instead of being a Category 2, could be Category 3 sub-units and therefore, the marking of the resulting assembly is the one listed in this declaration; that is: ⓔ II 3 D Ex h IIIC T135ºC Dc and/or ⓔ II 3 G Ex h IIB T3 Gc.

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UK CA Declaration of Conformity

AAF-SA declares that the following product:

Designation	AIVY MiniPulse™
Model	2.2 V
	2.2 M
	4.4 V
	4.4 M

has been designed and manufactured in compliance with the following **UK Legislations**:

- Pressure Equipment (Safety) Regulations 2016
- The Supply of Machinery (Safety) Regulations 2008
- Electromagnetic Compatibility Regulations 2016
- The Electrical Equipment (Safety) Regulations 2016

is in conformity with the applicable requirements of the following applied **Standards**:

BS-EN-ISO 12100:2012	BS-EN 60204-1:2019
BS-EN-ISO 13849-1:2008	BS-EN-ISO 13850:2007
BS-EN-ISO 4414:2011	BS-EN-ISO 13857:2008

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Model	2.2 V
	2.2 M
	4.4 V
	4.4 M

has been designed and manufactured in compliance with the following **UK Legislations**:

- Pressure Equipment (Safety) Regulations 2016
- The Supply of Machinery (Safety) Regulations 2008
- Electromagnetic Compatibility Regulations 2016
- The Electrical Equipment (Safety) Regulations 2016
- Equipment and Protective Systems Intended for Use in Potentially Explosive Atmospheres Regulations 2016

  Being its marking *(check Equipment Nameplate to see which applies):*

  II 2D Ex h IIIC T135ºC Db
  II 2G Ex h IIB T3 Gb
  Technical file: LOM 06ATEX0021

  II 3D Ex h IIIC T135ºC Dc
  II 3G Ex h IIB T3 Gc

is in conformity with the applicable requirements of the following applied **Standards**:

BS-EN-ISO 12100:2012	BS-EN 60204-1:2019
BS-EN-ISO 13849-1:2008	BS-EN-ISO 13850:2007
BS-EN-ISO 4414:2011	BS-EN-ISO 13857:2008
EN 60079-0:2012	

Vitoria (Spain), November 2022
Jesús Zabala *Global Product Director*

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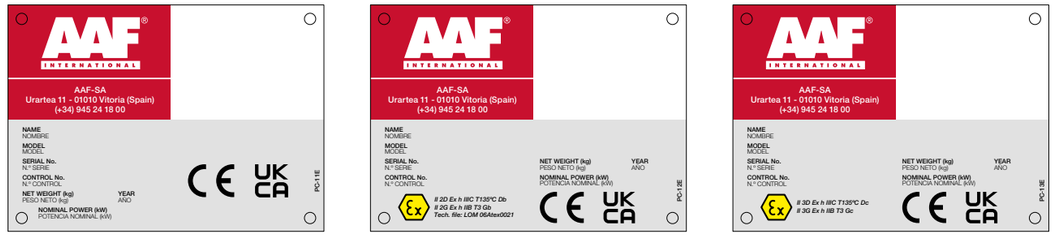
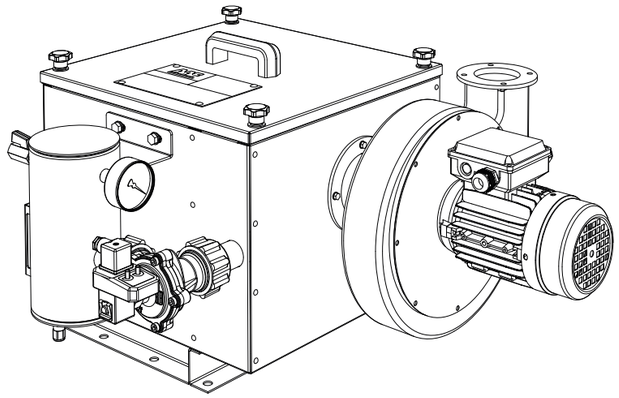
Nameplate

This manual contains the declarations of conformity for *ATEX* and *non ATEX* equipment. To check if your machine is suitable for use in explosive atmospheres, refer to the nameplate on your unit.



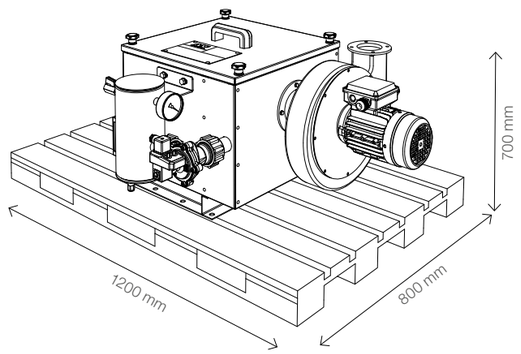
The nameplate is located on the cartridge access door at the top of the equipment unit.



Logistics and delivery terms

Equipment is delivered on a European wooden pallet + plastic shrink wrap.

AAF International will determine custom packaging to use for shipments that include more than one unit, in accordance with its logistical standards.



Standard delivery does not include the components necessary to fasten the AIVY MiniPulse™ to the client's facilities (bolts, sealing gasket, etc.).

Standards applicable to the design and manufacture of the machine

UNE-EN ISO 12100:2012 / **BS EN ISO 12100:2010**
Safety of machinery — General principles for design — Risk assessment and risk reduction

UNE-EN ISO 13849-1:2016 / **BS EN ISO 13849-1:2015**
Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design

UNE-EN ISO 13857:2020 / **BS EN ISO 13857:2019**
Safety of machinery — Safety distances to prevent hazard zones being reached by upper and lower limbs

UNE-EN ISO 13850:2016 / **BS EN ISO 13850:2015**
Safety of machinery — Emergency stop function — Principles for design

UNE-EN 894-1:1997+A1:2009 / **BS EN 894-1:1997+A1:2008**
Safety of machinery — Ergonomics requirements for the design of displays and control actuator
Part 1: General principles for human interactions with displays and control actuators

UNE-EN ISO 4414:2011 / **BS EN ISO 4414:2010**
Pneumatic fluid power — General rules and safety requirements for systems and their components

UNE-EN ISO 14120:2016 / **BS EN ISO 14120:2015**
Safety of machinery — Guards — General requirements for the design and construction of fixed and movable guards

UNE-EN 981:1997+A1:2008 / **BS EN 981:1996+A1:2008**
Safety of machinery — System of auditory and visual danger and information signals

UNE-EN 60204-1:2019 / **BS EN 60204-1:2018**
Safety of machinery — Electrical equipment of machines — Part 1: General requirements

UNE-EN 61439-1:2012 / **BS EN 61439-1:2011**
Low-voltage switchgear and controlgear assemblies — Part 1: General rules

UNE-EN 61000-6-3:2002 / **BS EN IEC 61000-6-3:2021**
Electromagnetic compatibility (EMC) — Part 6-3: Generic standards
Emission standard for residential, commercial and light-industrial environments.

UNE-EN 61000-6-4:2002 / **BS EN IEC 61000-6-4:2019**
Electromagnetic compatibility (EMC) — Part 6-4: Generic standards — Emission standard for industrial environments.

UNE-EN 61000-6-1:2007 / **BS EN 61000-6-1:2007**
Electromagnetic compatibility (EMC) — Part 6-1: Generic standards
Immunity for residential, commercial and light-industrial environments

UNE-EN 61000-6-2:2006 / **BS EN IEC 61000-6-2:2019**
Electromagnetic compatibility (EMC) — Part 6-2: Generic standards — Immunity for industrial environments

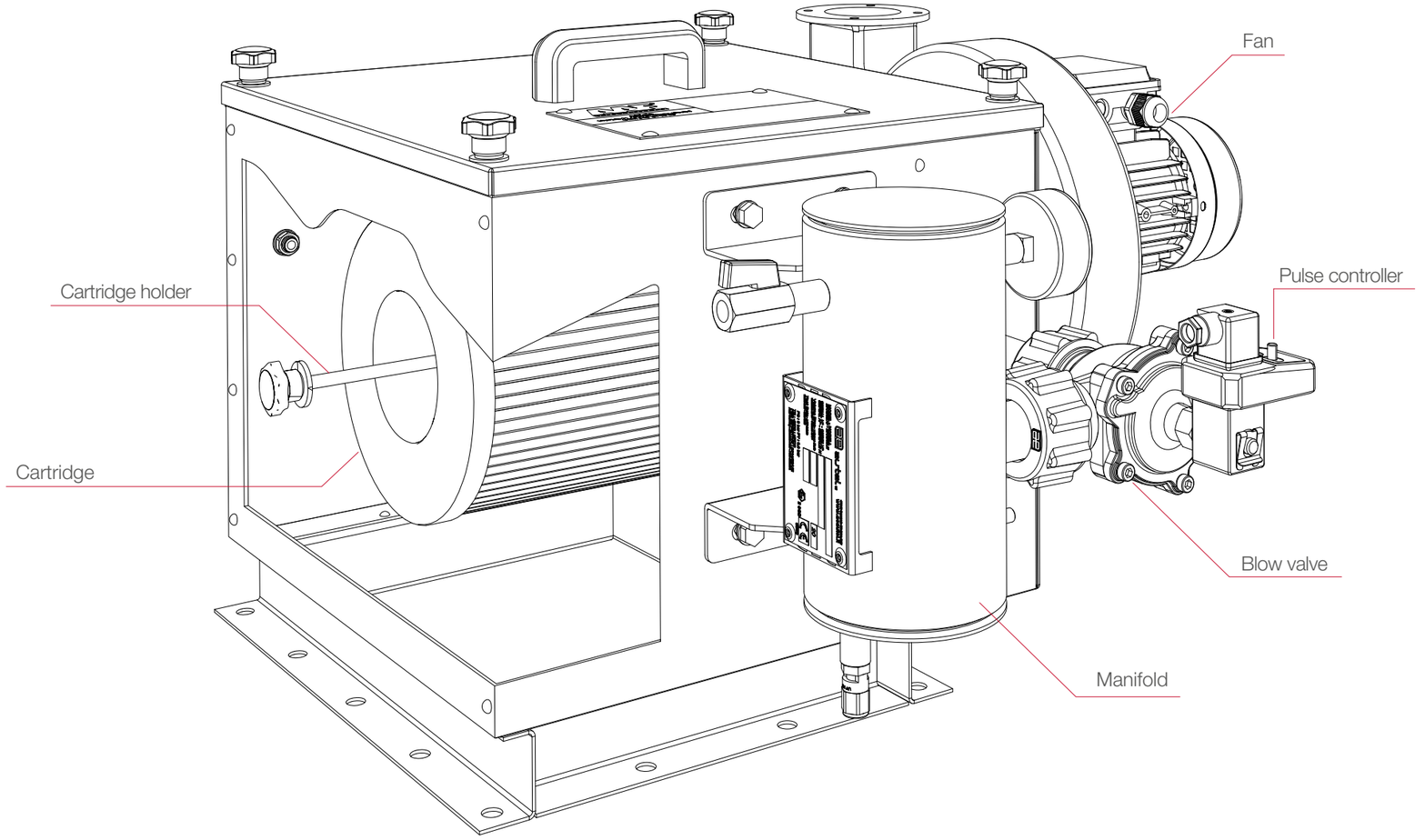
AIVY MiniPulse™

AIVY MiniPulse™ is a cartridge dry dust collector designed to handle low air flow rates below 1,000m³/h in small industrial applications.

Small, lightweight and easy to handle, has been designed as a Plug & Play solution that integrates all the components required for an immediate, quick and simple commission and start-up. Its built-in compressed air jet cleaning system allows the equipment to operate continuously for extended periods of time. This operation, which can be carried out even during normal use of the filter, not only serves to maintain optimum performance at all times, but also ensures a uniform pressure drop at a constant rate.

AIVY MiniPulse™ has a single cartridge that is held in place by a rod, making maintenance quick and easy thanks to the accessibility of the cartridge and the simple cartridge replacement operation.

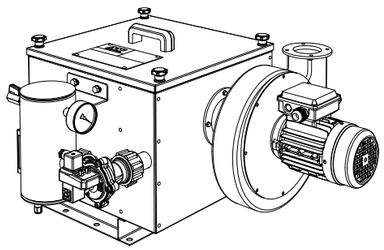
AIVY MiniPulse™ is available in different sizes: for filtration areas of 2.2 m² and 4.4 m²; and with or without an integrated fan. There is also an option certified for use in potentially explosive atmospheres, according to Directive 2014/34/EU, meeting the requirements of group II, category 2G or 2D and 3G or 3D T135°C.



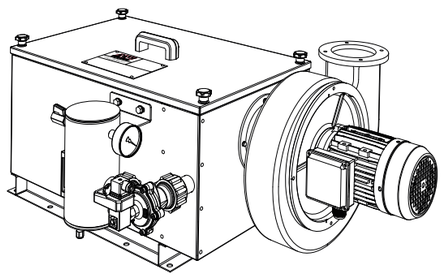
Sizes and options

Sizes

AIVY MiniPulse™ dust collector is available in the following sizes for filtration areas of 2.2 m² and 4.4 m².



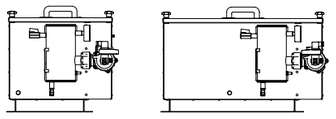
AIVY MiniPulse™ 2.2



AIVY MiniPulse™ 4.4

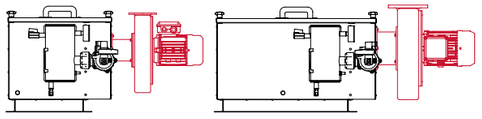
Configuration

AIVY MiniPulse™ can incorporate an integrated fan, allowing it to function as a stand-alone filtering unit. There are 3 types of construction:



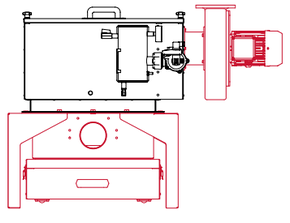
V

Venting without a fan



M

With built-in fan



M - Dischargeable

With discharge kit

General dimensions

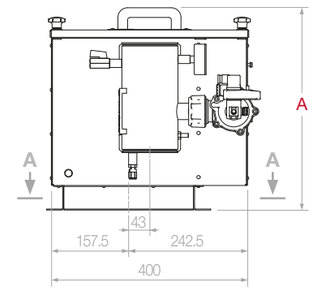
AIVY MiniPulse™ 2.2 - Model V (venting)

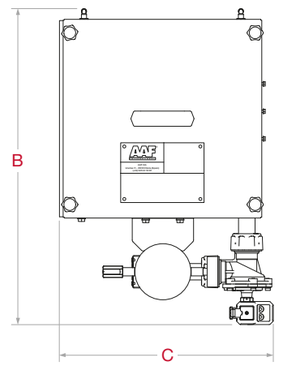
Dimensions		
High (mm)	A	412
Width (mm)	B	644
Length (mm)	C	436

Weight	*Non ATEX*	*ATEX*
Weight (kg)	22	27

Cartridge	
Cartridge	AAF REDClean®
Efficiency	F9 EN779
Dimensions	Ø200x225
Filter surface	2.2 m²

Operating conditions	
Max. pressure blown air	4 bar





AIVY MiniPulse™ 2.2 - Model M (fan)

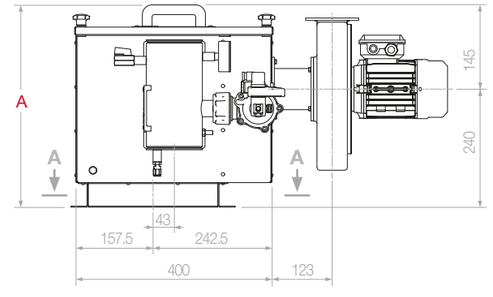
Fan Mod.0 (0.18 kW)

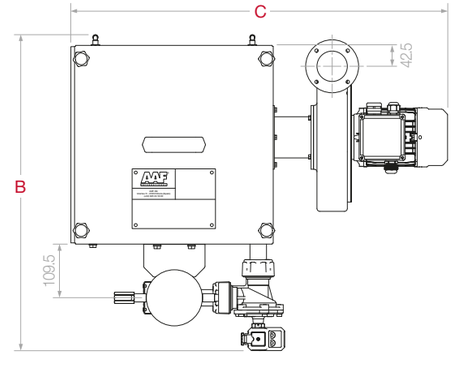
Dimensions		
High (mm)	A	412
Width (mm)	B	644
Length (mm)	C	769

Weight	*Non ATEX*	*ATEX*
Weight (kg)	33	38

Cartridge	
Cartridge	AAF REDClean®
Efficiency	F9 EN779
Dimensions	Ø200x225
Filter surface	2.2 m²

Operating conditions	
Max. pressure blown air	4 bar





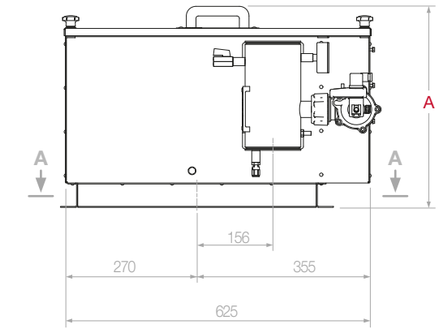
AIVY MiniPulse™ 4.4 - Model V (venting)

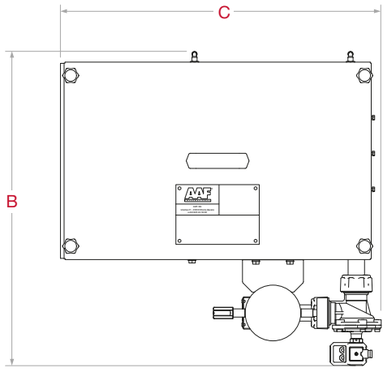
Dimensions		
High (mm)	A	412
Width (mm)	B	644
Length (mm)	C	658

Weight	*Non ATEX*	*ATEX*
Weight (kg)	27	32

Cartridge	
Cartridge	AAF REDClean®
Efficiency	F9 EN779
Dimensions	Ø200x225
Filter surface	4.4 m²

Operating conditions	
Max. pressure blown air	4 bar





AIVY MiniPulse™ 4.4 - Model M (fan)

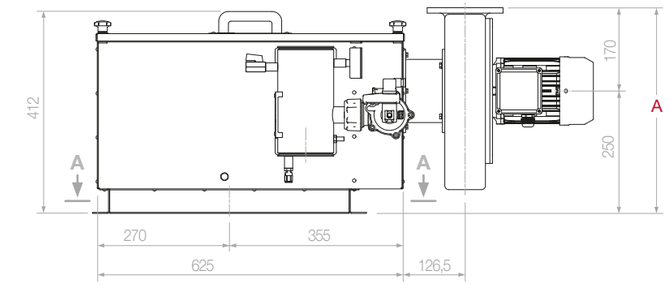
Fan Mod.1 (0.55 kW)

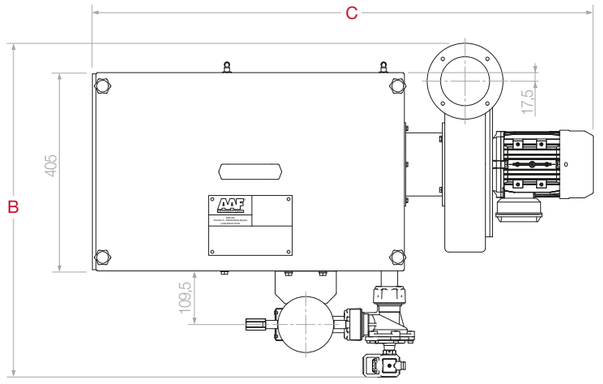
Dimensions		
High (mm)	A	420
Width (mm)	B	682
Length (mm)	C	1024

Weight	*Non ATEX*	*ATEX*
Weight (kg)	44	49

Cartridge	
Cartridge	AAF REDClean®
Efficiency	F9 EN779
Dimensions	Ø200x225
Filter surface	4.4 m²

Operating conditions	
Max. pressure blown air	4 bar





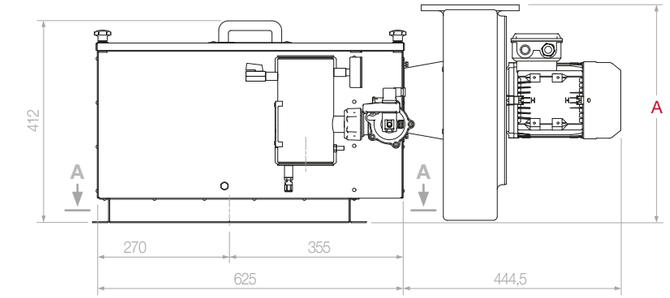
Fan Mod.2 (1.1 kW)

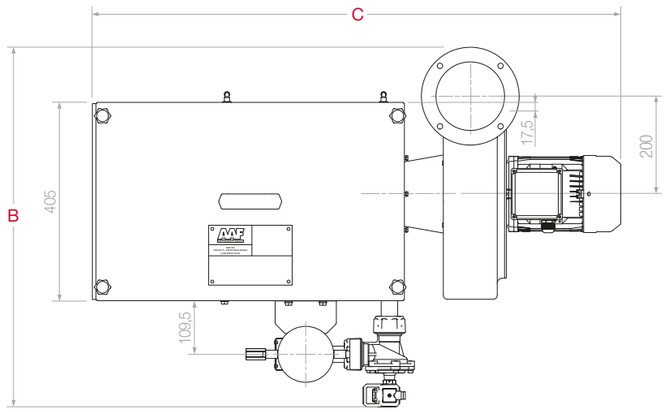
Dimensions		
High (mm)	A	445
Width (mm)	B	734.6
Length (mm)	C	1079.5

Weight	*Non ATEX*	*ATEX*
Weight (kg)	64	69

Cartridge	
Cartridge	AAF REDClean®
Efficiency	F9 EN779
Dimensions	Ø200x225
Filter surface	4.4 m²

Operating conditions	
Max. pressure blown air	4 bar





AIVY MiniPulse™ 4.4 - Model M - Dischargeable

Fan Mod.1 (0.55 kW)

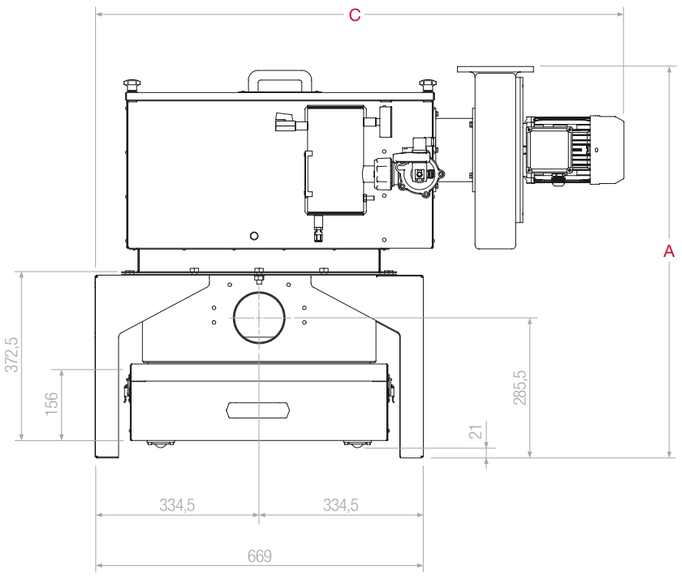
Dimensions		
High (mm)	A	797.5
Width (mm)	B	682
Length (mm)	C	1078

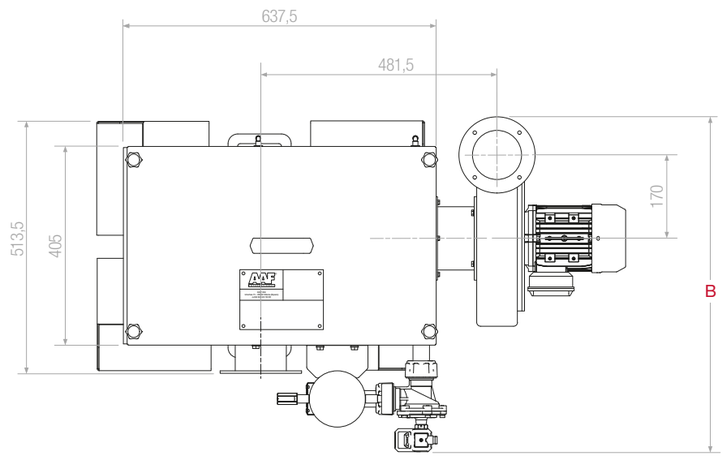
Weight	*Non ATEX*	*ATEX*
Weight (kg)	97	102

Cartridge	
Cartridge	AAF REDClean®
Efficiency	F9 EN779
Dimensions	Ø200x225
Filter surface	4.4 m²

Operating conditions	
Max. pressure blown air	4 bar

Discharge box volume
23 L.





Fan Mod.2 (1.1 kW)

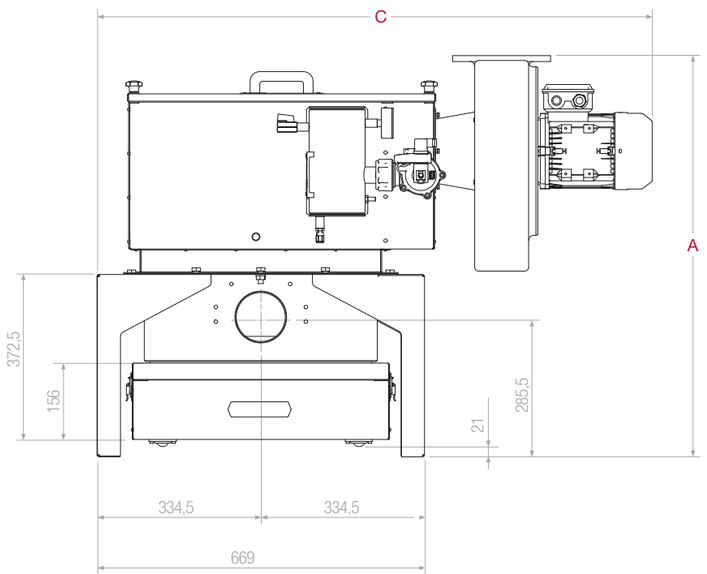
Dimensions		
High (mm)	A	819.5
Width (mm)	B	734.6
Length (mm)	C	1133

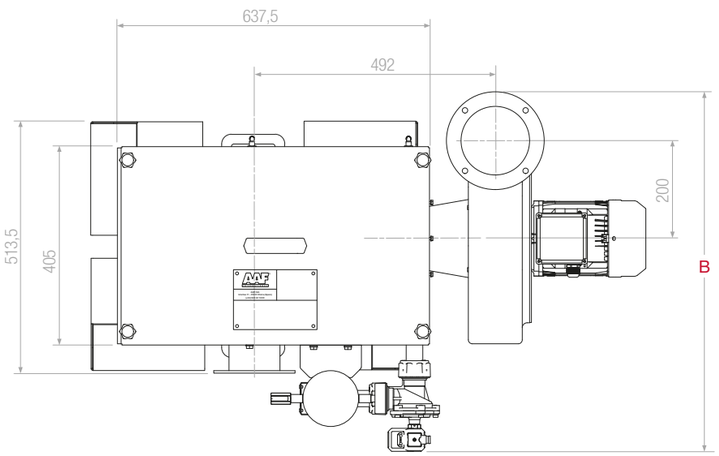
Weight	*Non ATEX*	*ATEX*
Weight (kg)	117	122

Cartridge	
Cartridge	AAF REDClean®
Efficiency	F9 EN779
Dimensions	Ø200x225
Filter surface	4.4 m²

Operating conditions	
Max. pressure blown air	4 bar

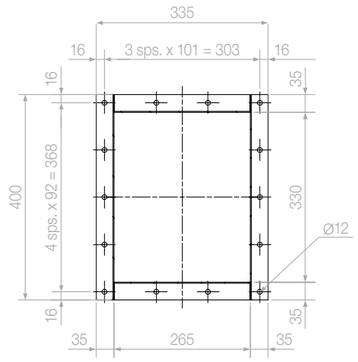
Discharge box volume
23 L.





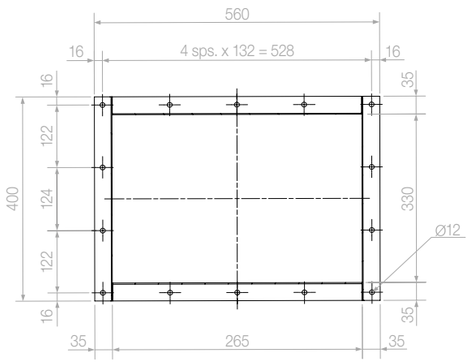
Connecting flange

Model V (venting) and Model M (fan)



A-A

Model
AIVY MiniPulse™ 2.2



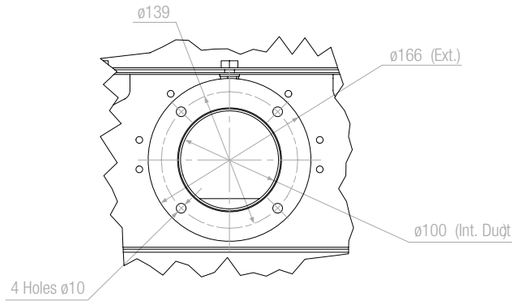
B-B

Model
AIVY MiniPulse™ 4.4

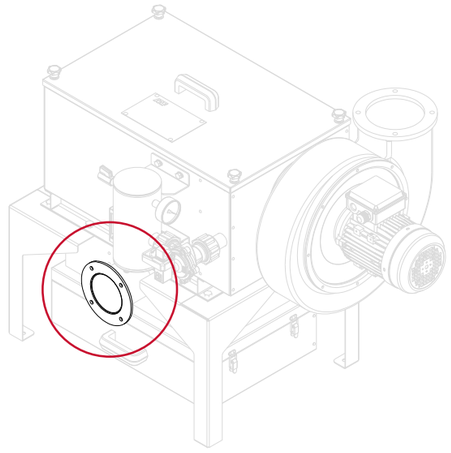
Inlet flange

Model M - Dischargeable

Optional inlet flange adapter.

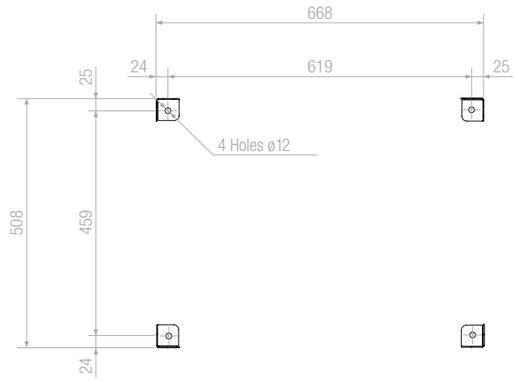


Model
AIVY MiniPulse™ 4.4



Structure

Model M - Dischargeable

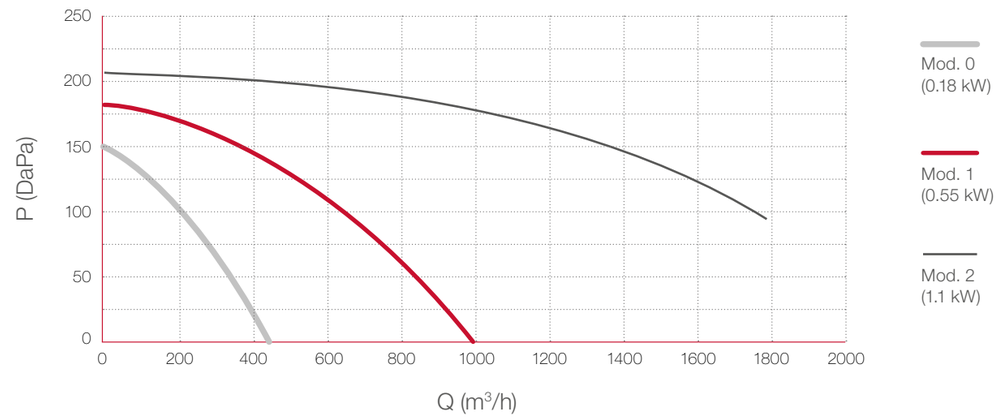


Model
AIVY MiniPulse™ 4.4

Fan

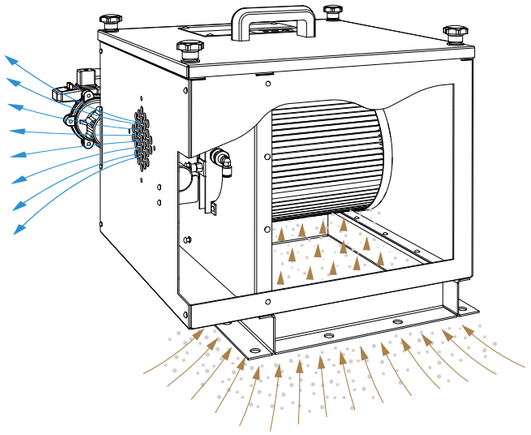
	AIVY MiniPulse 2.2	AIVY MiniPulse 4.4	
	Mod. 0	Mod. 1	Mod. 2
Speed	2760 rpm	2710 rpm	2830 rpm
Intensity	1.21-0.70 A / 230 V-400 V	2.57-1.49 A / 230 V-400 V	4.03-2.34 A / 230 V-400 V
Power	0.18 kW	0.55 kW	1.10 kW
Flow	440 m^3/h	1000 m^3/h	1790 m^3/h
Sound pressure level	70 dB(A)	80 dB(A)	84 dB(A)

Fan characteristic curves

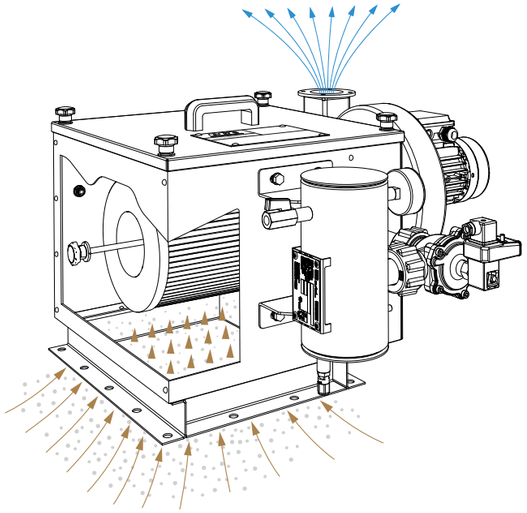


Principle of operation

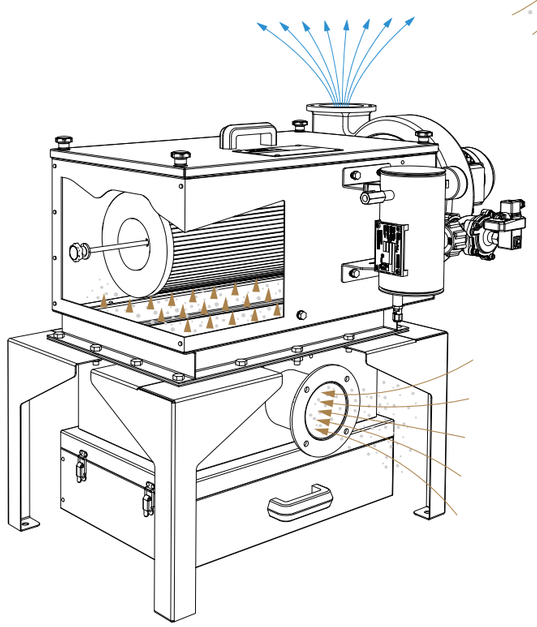
Dirty air enters AIVY MiniPulse™, passes through the cartridge and exits as clean air through the output flange. Cleaning of the cartridge is managed by a pulse controller connected to the cleaning solenoid valve.



AIVY MiniPulse™ V



AIVY MiniPulse™ M



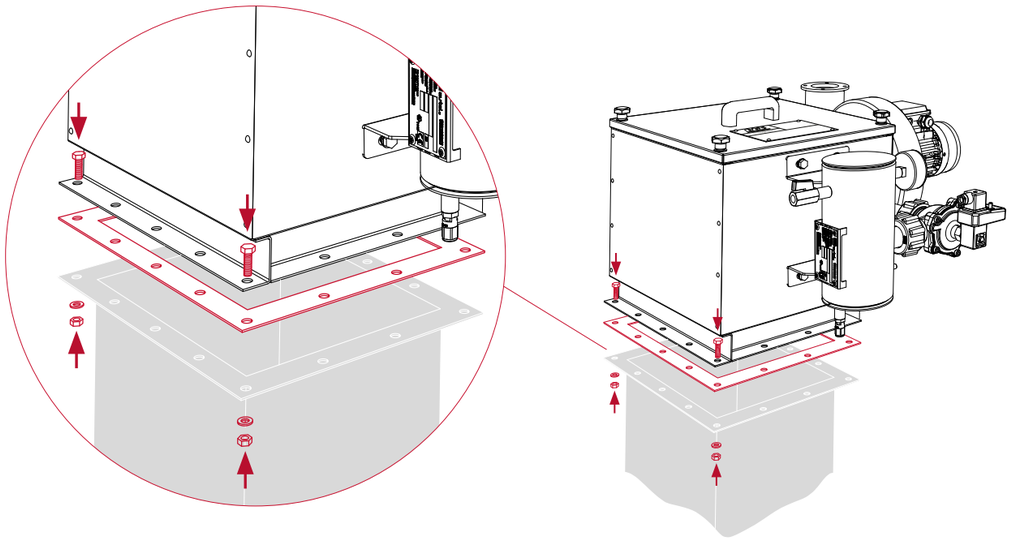
AIVY MiniPulse™ M - Dischargeable

Installation and assembling

All AIVY MiniPulse™ equipment is assembled in factory, including the filter module. It only requires:

Solenoid valve connection	Permissible tension 24 VDC	
Connection to the compressed air supply	Quick connection Ø3/8”	
Connection to the point of suction through the main flange of the collector	14 M10 bolts	
Fan wiring *	Options:	0.18 kW – 230/400 V
		0.55 kW – 230/400 V
		1.1 kW – 230/400 V

* *Only in version M*



For M versions, use appropriate hoisting equipment. The weight of the equipment may exceed 40 kg.

Bolts and sealing gasket are not included in the equipment delivery.

Compressed air consumption

Size	Air consumption
AIVY MiniPulse™ 2.2	1,5 Nm³/h (during cleaning)
AIVY MiniPulse™ 4.4	1,5 Nm³/h (during cleaning)

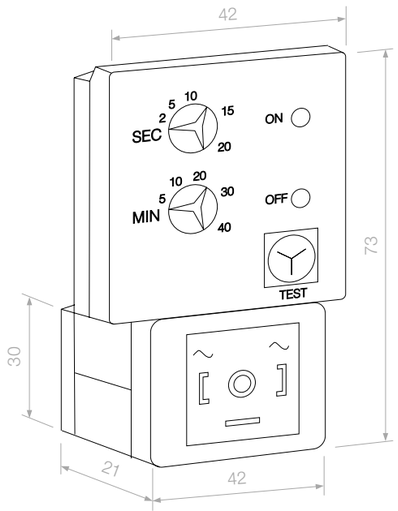
The cleaning pressure of the cartridges will be 3.5-4 bar (maximum of 5 bar) for those cartridges that do not have an outer protective metallic mesh.

The adverse conditions of the system may require reducing the time interval, which will increase the compressed air consumption.

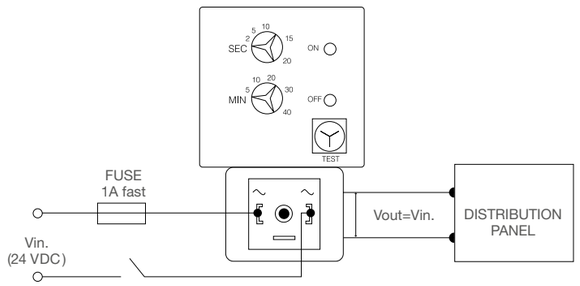
Controller

Pulse controller for non-*ATEX* equipment

The application of the timer is to control the open (pulse) and closed (pause) cycles of solenoid valves. Cycles range options are: milli-seconds, seconds, minutes and hours. Adjustable cycle potentiometers offering on and off cycle options, bright yellow LED's indicate in which cycle the timer is operating.



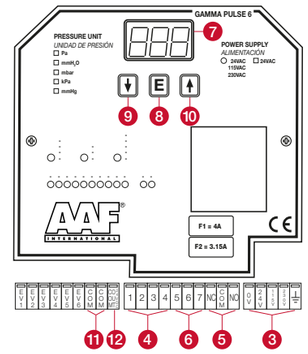
The load must have a supply voltage equal to the input voltage.



Power supply	24 - 240 V AC/DC
Maximum current	4mA max
Interval Time (OFF)	0.5 - 45 min.
Interval Time (ON)	0.5 - 10 sec.
Box	ABS plastic FR grade
Protection rating	IP65
Connections	DIN 43650 A - ISO 4400 connector
Protection	One 1A fast fuse recommended
Certificactions	CE, UL, RoHs, IP65

Pulse controller for *ATEX* equipment: REDClean® GammaPulse 6

Power supply	24 VAC	115 VAC	230 VAC
(option)	24 VDC		
Fuses	F2 general fuse 2A 5x20		
	F4 solenoid power supply fuses 1.6A 5x20 delayed		
Operating temperature	-10 / +50 ºC		
Connections	Terminals with screw. Use *ATEX* packing glands for the cable outlets in order to ensure the certification remains current		
Maximum absorbed power	100 VA		
Inputs	no.3 opto-isolated inputs		
Relay inputs	No.1 relay 2A resistive load 115 VAC		
Solenoid valve output	Triac outputs with ON/Off steel/crossing. 24, 115 or 230 VAC and 24 VDC with max. current of 2A		



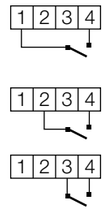
1 F2, Power supply protection fuse.

2 F4, Solenoid valves protection fuse.

3 Power supply terminals.

4 Input terminals:

Terminals 1, 4	No.1 input contact
	Open Contact: non-active input Closed contact: active input
Terminals 2, 4	**No.2 input contact**
	Open contact: non-active input Closed contact: active input
Terminals 3, 4	**No.3 input contact**
	Open Contact: non-active input Closed contact: active input

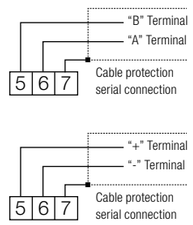


5 Relay output terminals

NC, COM, NO terminals	Contact with relay 1 (K1)
NCterminal	NCcontact
COM terminal	Common
NO terminal	NOcontact

6 Auxiliary output terminals (RS4856 optional):

Terminals 5, 6, 7	
With RS 485 serial output	
Terminal 5	Terminal B RS 485 serial card
Terminal 6	Terminal A RS 485 serial card
Terminal 7	RS 485 serial cable protection (optional, but recommended)
With analogue output	
Terminal 5	Analogue output positive terminal
Terminal 6	Analogue output negative terminal
Terminal 7	Analogue cable protection (optional, but recommended)



7 Display at 7 segments and 3 digits.

8 Enter key (E)

9 Down Key (↓)

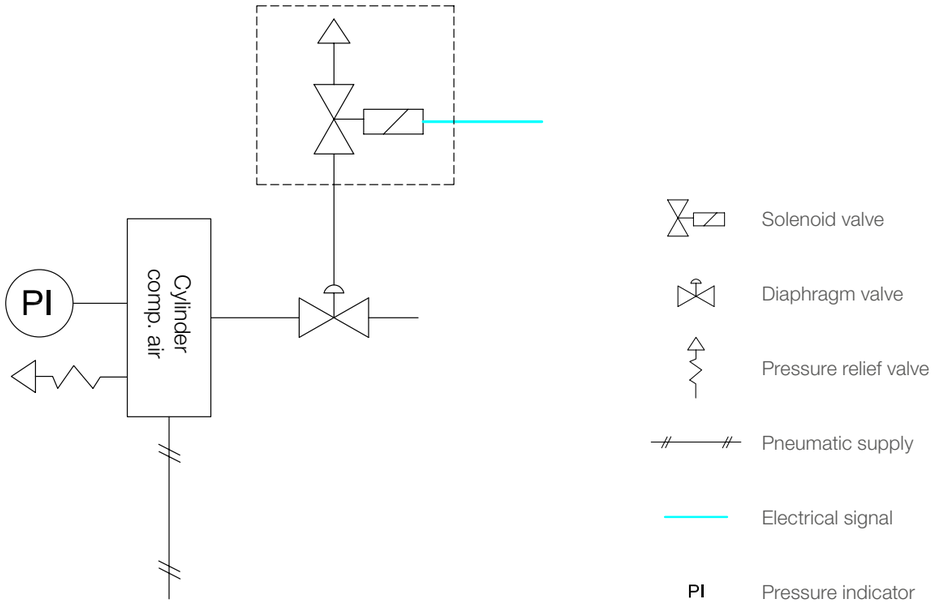
10 Up Key (↑)

11 Common ground terminals with clean contact for Solenoid valves

12 + 24 VDC common ground terminal for + 24 VDC Solenoid valves

The analogue output is the ACTIVE type.

Pneumatic diagram



Design parameters

Temperature <65 ºC	Pressure: +300/-300 dPa

Noise level

The maximum noise level (sound intensity) of the installation has been measured at a horizontal distance of 1 m and a vertical distance of 1 m from the ground along the entire perimeter of the machine.

The manufacturer shall not be held responsible for any possible increase in these values caused by conditions external to the installation such as the building, devices, etc.

Use prescribed hearing protection when coming in contact with the machine. Remember that in accordance with the law, for noise levels between 80 and 85 dB(A), hearing protection is optional; and for values greater than 85 dB(A), hearing protection is mandatory.

Sound pressure (dBA)

	Mod. 0 - 0.18 kW	Mod. 1 - 0.55 kW	Mod. 2 - 1.1 kW
Non *ATEX*	56	73	86
ATEX	63	73	86

Maintenance

Periodic inspections

AAF International recommends conducting periodic inspections of the units as a measure to guarantee the optimum operation of the units as well as to extend their useful service life. This practice will contribute to minimising lost time resulting from failures or improper operation of the equipment, which is considered especially critical in filters that are operating 24/7 to prevent the production from being affected.

The filtering cartridges must operate under a proper cleaning air pressure. Excessive pressure may cause irreparable damage to the filter units; also, insufficient pressure may result in inefficient cleaning and cause an improper operation of the filter.

It is essential that personnel are properly trained and are qualified to conduct maintenance on the equipment. This is the only way we can guarantee that proper maintenance is carried out as well as an optimum operation of the system. AAF International has a high quality maintenance service available for its clients, which is led by technicians with a vast experience carrying out corrective, predictive and preventive maintenance. Consult the terms with AAF International.

Daily or weekly – We recommend recording the differential pressure of the filter during the first 30 days of operation. AAF International recommends monitoring the vacuum that exists between the inlet and outlet of the cartridges daily. After starting up the unit, the pressure drop will be gradually increased until reaching a normal operating level between 50 and 80 daPa. We recommend the static pressure connections be connected to the cleaning control system.

A visible emission of dust may be caused by a poor condition of the cartridges or by an improper seal.

Weekly – A high differential pressure may be lowered by reducing the cleaning intervals or by increasing the duration of the injection or the compressed air pressure (up to 5 bar). Therefore a weekly monitoring of the loss of charge is recommended.

Monthly – The access doors must be open to conduct an internal inspection every 30 days. Check that the ends of the cartridges are tight and check for excessive wear or deterioration of the cartridges.

We recommend purging the cylinder to remove any condensation and check that the compressed air supply maintains the recommended quality.

AAF International recommends conducting a monthly inspection of the hopper discharge elements to verify their operation and sealing.

Additionally we recommend conducting a general visual inspection of the filter once a month.

Bi-annually – The collector inlet and outlet ducts must be inspected for possible obstructions at least once every six months. The following inspections shall also be carried out:

- ☐ Inspect the filtering cartridges.
- ☐ Inspect the seals for air or dust leaks.
- ☐ Check for condensation or dust inside the collector.
- ☐ Check that all the electrical components are operating properly.

- [ ] Check that the solenoid valves as well as the diaphragm valves are operating when they are turned on by the cleaning control system.
- [ ] We recommends inspecting the general condition of the fan and periodically check its consumption.
- [ ] Check the air discharge conditions and for signs of dust emission.

Annually - We recommend conducting a general inspection of the filter and its components.

- [ ] Check the general condition of the unit's body, chassis and supports.
- [ ] Check the condition of all the cover seals and soundproof cabins.
- [ ] Check the general condition of the cartridges and the cages, ensuring that they are properly fitted to their installation location.
- [ ] Check the general condition of the blow tubes and ensure the blow holes are clean and in good material condition.
- [ ] Inspect the condition of the cartridge access covers and verity they fit properly.
- [ ] Inspect the general condition of the compressed air cylinder and verify that no leaks are detected and that all the installed components are also in good material condition and are not leaking.
- [ ] Inspect all the pneumatic connections.
- [ ] Check that humidity is not present inside the compressed air circuit.
- [ ] If the unit has a fan, check its general condition and operation. Check the consumptions, temperatures and vibration level.
- [ ] Inspect the electrical connections.

Weekly	Differential pressure
Monthly	Access doors
Monthly	Wear of the cartridges
Monthly	Purging of the cylinder
Monthly	Discharge elements
Quarterly	Inlet and outlet ducts
Annually	General inspection of the condition of the filter and its components

Prior to conducting any maintenance we recommend disconnecting the main electrical power supply and check that the unit is properly isolated pneumatically and depressurised.

If the unit is located inside an explosive atmosphere, we must follow all the safety measures that are recommended in these cases.

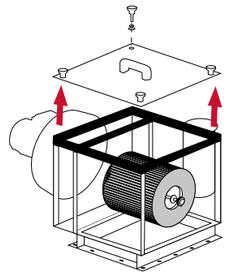
To guarantee an optimum operation of the equipment, AAF International recommends only using parts that are recommended by the manufacturer. Refer to the spare parts information that is provided.

Cartridge replacement

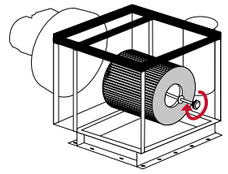
AIVY MiniPulse™ is designed to simplify and minimize the need for maintenance. The automatic cleaning system using compressed air pulses enhances the durability of the filter unit.

Changing the cartridge is quick and easy, and does not require the use of any special tools.

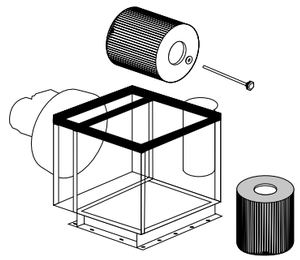
The cartridge is secured to the module with a threaded rod made of galvanised steel.



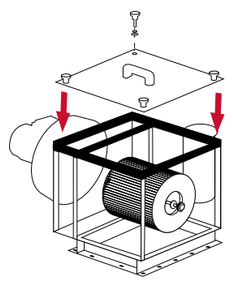
1 | Open the upper cover of the module.



2 | Loosen and remove the threaded rod that holds the cartridge.



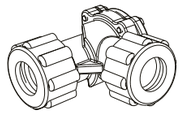
3 | Replace the cartridge and return the rod to its original position.



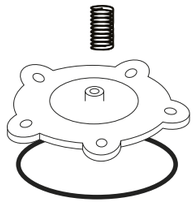
4 | Position and then close the module cover.

AIVY MiniPulse™ Spare Parts

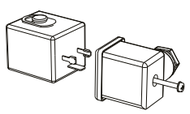
Cleaning valve assembly



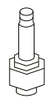
5 Blowing valve 1”



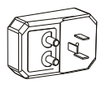
6 Kit membrane valve 1”



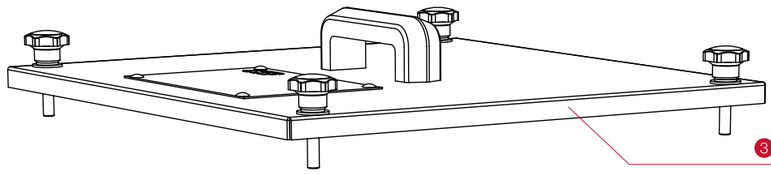
7 Coil 24 VDC + Connector



8 Pilot system 10 + pin

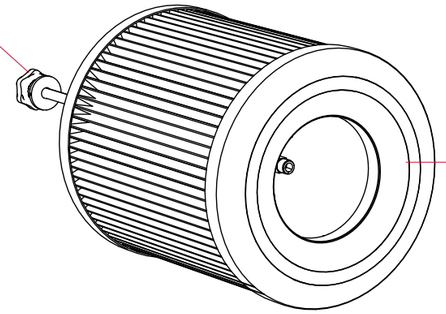


9 Pulse controller



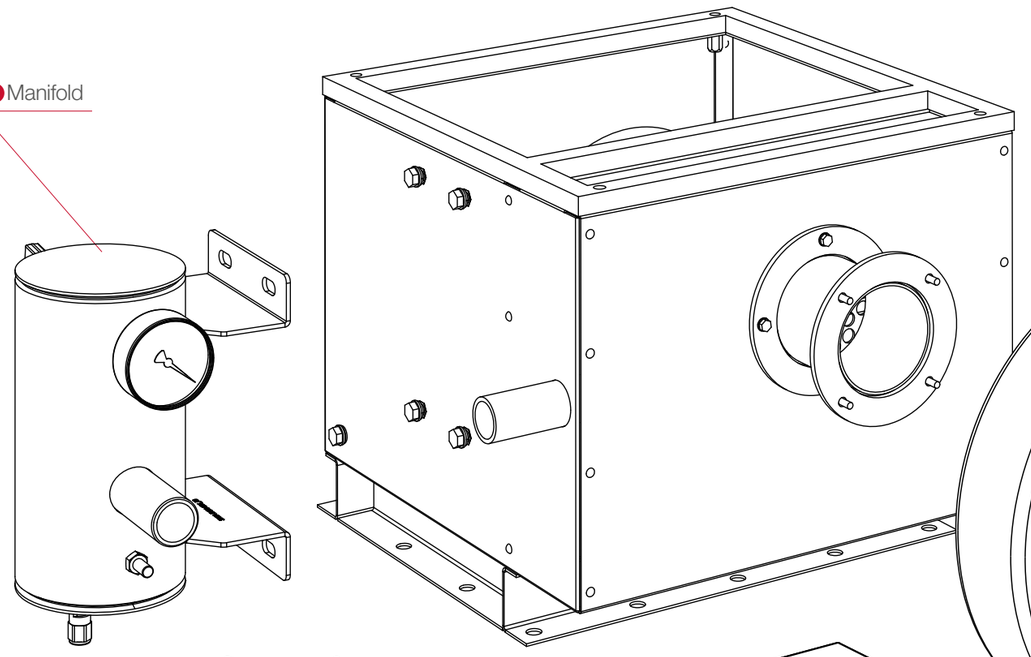
3 Access door

2 Cartridge holder

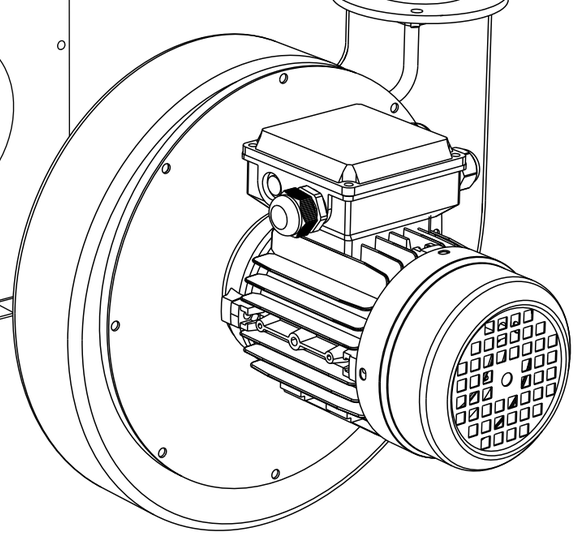


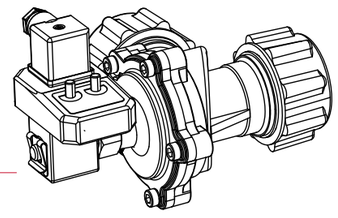
1 Cartridge

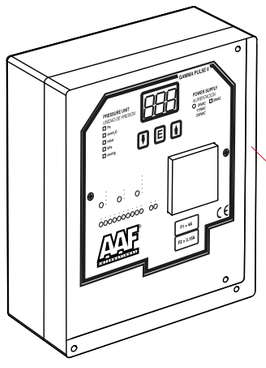
4 Manifold

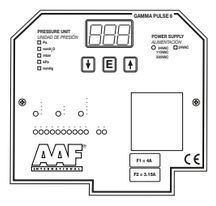


11 Fan









10 REDClean® GammaPulse

AIVY MiniPulse™ spare parts

	1 Cartridge	
	REDClean® NFR-E 2.2	CC4016PFAH70000
	REDClean® NFR-E 4.4	CC4016RFAH70000
	REDClean® SA 2.2	TA3101700012
	REDClean® SA 4.4	TA3101700015

	2 Cartridge holder	
	Cartridge holder 2.2 S235	TP3101700035
	Cartridge holder 4.4 S235	TP3101700036
	Cartridge holder 2.2 AISI 304	TP3583129113
	Cartridge holder 4.4 AISI 304	TP3583129114

	3 Access door	
	AIVY MiniPulse™ 2.2 maintenance lid assembly S235 RAL 7035	TV3101700030
	AIVY MiniPulse™ 4.4 maintenance lid assembly S235 RAL 7035	TV3101700031
	AIVY MiniPulse™ 2.2 maintenance lid assembly AISI 304	TP3583129107
	AIVY MiniPulse™ 4.4 maintenance lid assembly AISI 304	TP3583129112

	4 Manifold	
	Manifold 4" with drain valve, pressure indicator & safety valve assembled	TV3101700040
	Pressure reducer + filter	TA3144000002

	Cleaning valve asssembly	
5	Blowing valve 1”	TA3182452825
6	Kit membrane valve 1”	TA3181030401
7	Coil 24 VDC + connector	TA3182450031
8	Pilot system 10 + pin	TA3182450032
9	Pulse controller	TA3101600014

	10 **REDClean® GammaPulse** (in case of *ATEX* equipment)	
	REDClean® GammaPulse 6-VAC	TA3101600013
	REDClean® GammaPulse 6-VDC24	TA3101600016

	11 Fan	
	Fan 0.18 kW LG0 *Non ATEX*	TA3101700020
	Fan 0.55 kW LG0 *Non ATEX*	TA3101700023
	Fan 1.1 kW LG0 *Non ATEX*	A004579
	Fan 0.18 kW LG0 *ATEX*	TA3101700022
	Fan 0.55 kW LG0 *ATEX*	TA3101700021
	Fan 1.1 kW LG0 *ATEX*	A004580

	Gaskets	
	AIVY MiniPulse™ 2.2 casing gasket	TV3130015020
	AIVY MiniPulse™ 4.4 casing gasket	TV3130015021

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