

FANS FOR USE IN POTENTIALLY EXPLOSIVE ATMOSPHERES

Zone 21 / 22 – Zone 1 / 2
Category 2G / 2D - 3G / 3D



“ATEX”
n.2014/34/UE and DPR126/98

Annex to the assembly, use and maintenance manual



**This supplementary manual, must be used together with the original instruction
manual for the installed fan**

“ATEX”



Summary

UE conformity declaration	4
Important notes.....	6
1 General information.....	6
1.1 Purpose of this annex.....	6
1.2 User's responsibilities	7
Reference standards for implementing Directive 99/92/EC and Section XI of Leg. Decree 81/2008.....	7
1.3 Product conformity	8
2 SAFETY INFORMATION	9
2.1 Seals.....	9
2.2 Protection	9
2.3 Working conditions	9
2.4 Vibrations	9
2.5 Corrosion	10
3 TRANSPORT AND INSTALLATION	10
3.1 Transport and storage.....	10
3.2 Installation in potentially explosive environments	10
3.3 Temperatures	11
Gas.....	11
Check the ID plate data on the fan and motor	12
Check the project data	12
Check rotating parts.....	12
Check the distances between the fixed and rotary parts.....	12
Check all the nuts and bolts are tight	12
Check the bearings are correctly lubricated.....	12
Check the drive components	12
Check all the guards are installed	12
Check the choice of external components	12
Check the minimum access spaces	12
Check the assembly position.....	12
Check the earthing point.....	12
4 COMMISSIONING	13
4.1 Electric wiring.....	13
4.2 Controls after commissioning	14
5 MAINTENANCE.....	15
5.1 Scheduled maintenance.....	15
6 ATEX marking	17
7 Using and preserving the manual	18
a. Addressees.....	18
b. Purpose	18
8 Alterations and repairs.....	18

UE CONFORMITY DECLARATION

The manufacturer Euroventilatori International S.r.l. hereby declares that the industrial fan:

CODE:

YEAR OF PRODUCTION:

SERIAL NO.:

TYPE:

MARKING:

Ex H2G Ex h IIB T4 Gb

II 2D Ex b III B T135°C Db

fulfils all the relevant provisions of the Directives:

2014/34/EU OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 26 February 2014
on the harmonisation of the laws of the Member States relating to equipment and protective systems
intended for use in potentially explosive atmospheres (recast)

2006/42/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 May 2006 on machinery, and amending Directive 95/16/EC

and furthermore declares that the following harmonised standards has been applied:

IEC 60079-0: 2011 Explosive atmospheres - Part 0: Equipment - General requirements

UNI EN 1127-1: 2011 Prevenzione dell'esplosione e protezione dall'esplosione: concetti fondamentali e metodologia - Parte 1

UNI CEI EN ISO 80079-36: 2016 Atmosfere esplosive - Parte 36: Apparecchi non elettrici destinati alle atmosfere esplosive - Metodo e requisiti di base

UNI CEI EN ISO 80079-37: 2016 Atmosfere esplosive - Parte 37: Apparecchi non elettrici destinati alle atmosfere esplosive - Tipo di protezione non elettrica per sicurezza costruttiva "c", per controllo della sorgente di accensione "b", per immersione in liquido "k"

UNI EN 14986: 2017 Progettazione di ventilatori che operano in atmosfere potenzialmente esplosive

UNI EN ISO 12100: 2010 Sicurezza del macchinario: Concetti fondamentali, principi generali di progettazione - Parte 1: Terminologia di base, metodologia

UN EN ISO 13857: 2008 Sicurezza del macchinario: Distanze di sicurezza per impedire il raggiungimento di zone pericolose con gli arti superiori e inferiori

and the following standards:

UNI EN ISO 13349:2011 Ventilatori - Vocabolario e definizioni delle categorie

UNI EN ISO 12499:2000 Ventilatori industriali - Sicurezza meccanica dei ventilatori - Ripari

The technical dossier no. and the related attachments have been provided to Notified Body with acknowledge receipt no. of

The person authorised to compile the technical file (in compliance with the 2006/42/EC Directive) is:

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San Pietro Mussolino, on

Signature
Technical Manager
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UE2017EXEN.00



Fig. 1 Example of Declaration of conformity

EUROVENTILATORI INTERNATIONAL S.r.l. certification

ATEX 2014/34/EU Directive

Direct driven fans arr. 4-5-8 Belt driven fans arr. 9-12

SERIE	TIPO	ANNO 	SERIE	TIPO	ANNO 
APE	351.....901	2010	APEC	351.....1001	2010
APF	502.....901	2010	APFC	502.....1001	2010
APG	502.....901	2010	APGC	501.....1121	2010
APRF	631.....1121	2010	APRFC	631.....1801	2010
APRG	501.....1121	2010	APRGC	501.....1801	2010
APRH	561.....1001	2010	APRHC	561.....1801	2010
APRI	632.....1001	2010	APRIC	631.....1801	2010
APRL	633.....801	2010	APRLC	631.....1801	2010
APRED	631.....1122	2010	EUC	221.....2001	2010
APRFD	631.....1122	2010	EUMC	311.....2001	2010
APRGD	902.....1001	2010	MPRC	351.....561	2010
APRF./N8	1121.....1801	2010	TRC	401.....2001	2010
APRG./N8	1121.....1801	2010	BPC	201.....1001	2010
APRH./N8	1121.....1801	2010	BPRC	401.....2001	2010
APRI./N8	1121.....1801	2010	TPAC	221.....451	2010
APRL./N8	1002.....1801	2010	TFC	501.....1001	2010
EU	221.....1121	2010	TGC	401.....1121	2010
EUM	311.....1401	2010	THC	401.....1121	2010
MPR	352.....561	2010	TTRC	561.....1601	2010
TR	401.....1401	2010	AP..DC	631.....1001	2010
BP	161.....501	2010	BPRDC	501.....1401	2010
BPR	352.....1401	2010			
BT	352.....632	2010			
TPA	221.....451	2010			
TQ	631.....902	2010			
TF	501.....1001	2010			
TG	401.....1121	2010			
TH	402.....1121	2010			

Axial fans

SERIE	TIPO	ANNO 	SERIE	TIPO	ANNO 
EVF	315.....1401	2010	EVT	560.....1000	2010
EVP	315.....500	2010	EVC	400.....1400	2010
EVL	315.....1401	2010			



Important notes

Follow the instructions given in this manual carefully, as they are addressed to guaranteeing correct and safe installation, operations and maintenance of the fan.

All operators involved with installation, use and maintenance of the fan must read and understand these instructions beforehand.

Failure to comply with the instructions could jeopardise the safety of the fan, given the risk of potential explosion.

NOTE! Fans and their drive units for installation in dangerous areas are specifically designed to satisfy the requirements of the harmonised standards regarding explosive environments.

If these products are used incorrectly, are incorrectly wired or altered, even slightly, their safety and reliability levels could be seriously jeopardised.

The regulations regarding the connections and use of equipment in dangerous zones must be scrupulously observed.

Only expert and fully trained personnel in these regulations are allowed to operate this sort of equipment.

Extract from Legislative Decree 81/2008 of 09/04/2008 – Chapter XI – ANNEX L

1. Organisational measures.

1.1. Professional training for workers.

The Employer will provide sufficient and suitable training into the protection of workers who are exposed to explosive environments.

1.2. Written instructions and authorisations for work.

Where the document regarding protection from explosion provides:

a) Work in dangerous areas must be conducted according to the employer's written instructions.

b) A work permit system is applied for dangerous activities, and activities which could be dangerous if they interfere with other work being carried out.

Work permits must be issued by an authorised person before the work is started.

This manual is an integral part of the fan, and must be conserved for future reference until the fan is decommissioned.

The manual must be kept in a safe, dry place and be available for consultation by the user and the operators who are authorised to work the fan.

The manufacturer declines all responsibility for damage to people, animals and property that is caused by failure to observe the regulations and the warnings given in this manual.



1 General information

1.1 Purpose of this annex

The purpose of this annex is to complete the standard manual that is supplied together with the fan.

The instructions that are given herein are an integration to the standard fan manuals.

For the electric motor (Ex d, Ex e, Ex de, Ex nA, DIP) refer to the specific instructions given in the manual supplied by the motor manufacturer.

1.2 User's responsibilities

The user is fully responsible for the installation of the fan in a potentially explosive environment.

In applying the reference standards, before installing the fan the user must:

- Assess the risks in the environment where the equipped is to be installed.
- Establish the type of explosive atmosphere (Gas or dust).
- Mark off the area.
- Establish the product category.
- Ensure that the fan technical specification plate complies with the ordered specifications.

In particular, the user must apply the terms of articles 290 ÷ 294 of Legislative Decree n. 81/2008.

The fans are constructed in compliance with Italian and European Legislation and standards.

The reference regulations and directives are listed below:

 **LEGISLATIVE DECREE 9 April 2008, n. 81 – Implementing Article 1 of Law n. 123 of 3 August 2007, regarding protecting health and safety in the workplace – Chapter XI.**

Decreets repealed by Leg. Decree 81/2008 and incorporated into the same.

- DPR n. 547 of 27/4/1955 – Regulations to prevent accidents in the workplace
- DPR n. 303 of 27/04/1956 – General regulations for hygiene in the workplace.
- Leg. Decree n. 626/94 of 19/9/1994 – Implementing Directives 89/391/EEC, 89/654/EEC, 89/655/EEC, 89/656/EEC, 90/269/EEC, 90/270/EEC, 90/394/EEC, 90/679/EEC, 93/88/EEC, 95/63/EC, 97/42/EC, 98/24/EC, 99/38/EC, 99/92/EC, 2001/45/EC, 2003/10/EC and 2003/18/EC regarding the improvement to the safety and health of workers in the workplace.

 **European Machinery Directive n. 2006/42/EC.**

 **DPR n. 85 of 19 May 2016 – Implementing Directive 2014/34/EC concerning the harmonization of the laws of the Member States relating to equipment and protective systems intended for use in potentially explosive atmospheres.**

To complete the dispositions given in this manual, the user (Employer) is obliged to adapt the installed plant to the following legal prescriptions:

 **European Directive 99/92/EC**

“Minimum prescriptions to improve health and safety protection for workers who may be exposed to the risk of explosive atmospheres”

 **Legislative Decree n. 233/03 of 12/06/2003**

With Leg. Decree n. 233/03 Section XI was added to Leg. Decree n. 81/2008 entitled: “Protection from explosive atmospheres”, which became Section XI of Leg. Decree 81/2008 which came into force on 15 May 2008.

Reference standards for implementing Directive 99/92/EC and Section XI of Leg. Decree 81/2008

IEC 61241-10 – Classifying areas containing dust

EN 60079-10 – Classifying areas containing gas

IEC 60079-14 – General installation regulations

IEC 61241-17 – Maintenance and Inspection regulations in areas containing dust

IEC 61241-19 – Regulations for servicing and repairing safety equipment.

Before commissioning electric equipment and non-electric equipment which are ATEX classified, the user must prepare the "Document on protection from explosions".

For convenience we quote the text of Art. 294 of Leg. Decree n. 81/2008:

Document on Protection from Explosions

1. In fulfilling the obligations established in article 290, the Employer draws up and maintains updated a document entitled: «Document on protection from explosions».

2. In particular, the aforesaid document must expressly state:

- a) That the explosion risks have been identified and assessed.
- b) That suitable measures will be taken to achieve the objectives of this section;
- c) Which areas have been classified within the zones as given in Annex XLIX
- d) Which are the areas where the minimum prescriptions are applied as given in Annex L.
- e) That the areas and work equipment, including the alarms, have been designed, and are used and maintained in perfect working order fully considering the safety aspects.
- f) That, pursuant to Section III, all the necessary mechanisms have been adopted for the safe use of the work equipment.

3. The aforesaid document **must be completed before beginning the work**, and it must be reviewed each time the workplace, equipment or work organisation undergo significant changes, extensions or transformations.

4. The aforesaid document is an integral part of the Risk Assessment Document, as given in article 17(1) of Legislative Decree n. 81/2008.

1.3 Product conformity

"Euroventilatori International" fans in the ATEX range conform to the essential requirements established by European Directive 2014/34/EU and local laws within the European Community.

The fans have been constructed in conformity with the following harmonised standards:

Standard	Title
EN 14986:2017	Designing fans to work in potentially explosive atmospheres
UNI CEI EN ISO 80079-36:2016	Non-electrical equipment for explosive atmospheres - Basic method and requirements.
UNI CEI EN ISO 80079-37:2016	Non-electrical equipment for explosive atmospheres - Non-electrical type of protection constructional safety "c", control of ignition source "b", liquid immersion "k".

Our fans in the ATEX range (valid for group II) may be installed in areas that correspond to the following classification:

Explosive atmosphere	Zone	Risk occurrence	Category	
			Fan	Motor
Gas	1	Occasionally	Cat. 2G	Cat. 2G (Ex d, Ex e, Ex de)
	2	Short period only	Cat. 3G	Cat. 3G (Ex nA)
Dust	21	Occasionally	Cat. 2D	Cat. 2D * (DIP - IP55/IP65)
	22	Short period only	Cat. 3D	Cat. 3D * (DIP - IP55/IP65)

*) In presence of conductive dust, an IP6X product is required.

2 SAFETY INFORMATION

2.1 Seals

The fans and elastic joints on the intake and force lines may not be gas-tight; likewise the connected pipes may not be perfectly sealed. The risk in the atmosphere may depend on any leaks that occur from the fan outwards, and by infiltrations from the outside into the fan.



The user must bear these aspects in mind when choosing the motor (if it is not supplied with the fan) and/or the equipment and machinery positioned on the outside of the fan.

2.2 Protection



The ATEX range of fans is supplied ready for connecting to "Type D" piping (intake and delivery lines connected to pipes).



The installer must provide adequate protection against any foreign bodies and particles entering the fan.



Should "Type A", "Type B" or "Type C" connections be used, the installer must provide the necessary fixed guards on the intake and/or force lines, with a protection level suitable to prevent the ingress of unintended particles, it is suggested to use a level protection IP20.

2.3 Working conditions

The ATEX range of fans is designed for use in environments where the absolute pressures vary between 0.8 and 1.1 bar.

The limits given on the ID plate must be respected – especially the ambient temperature, the conveyed fluid temperature, the rotation speed, the air flow – to guarantee the required overheating margins on the surface of the fan.



Tests have shown that when the temperature of a gas is higher than 60°C, the risk of ignition increases considerably.

2.4 Vibrations

The ATEX range of fans complies with the quality specifications for balance and vibration levels established in the ISO 14694 standard for the BV-3 category.

According to the specific use, application and assembly, it could be necessary to implement a continuous monitoring system of the vibrations (**integrated with the fan control system**), even setting the "Alarm" and the "Stop" level as below specified:

Installation category	Recommended level	Rigidly mounting* r.m.s. [mm/s]	Flexible mounting* r.m.s. [mm/s]
BV-3	Alarm	7.1	11,8
	Stop	9.0	12,5

 EUVENTILATORI THE AIR TAKES SHAPE	Euroventilatori International S.r.l. Via Risorgimento, 90 36070 S. Pietro Mussolino - VI tel.0444-472472 r.a. fax. uff.tecnico 0444-472418	ATEX supplement to the instruction Manual SAXMI017
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*Flexible mounting is considered a fan with anti-vibration pads, rigidly mounting is considered when the fan is rigidly connected to the floor.

ATTENTION:

- With 2D category fans, as any dust could unbalance the impeller, **the vibrations monitoring is mandatory.**
- The alarm and arrest limits must comply with ISO 14694 specifications.

2.5 Corrosion

Corrosion to the fan components can create an explosion risk in many circumstances.

Consequently the fan must be protected from the weather and other chemical corrosive substances, and the conveyed fluid must be suitable for the prescribed use.

The abrasion risk must also be considered should there be dust in the atmosphere.

ATTENTION:

- When deciding the maintenance and inspection frequency, the user must consider the risks caused by corrosion and abrasion.

3 TRANSPORT AND INSTALLATION

3.1 Transport and storage

- Avoid any knocks or excessive jolts, which could damage the fan structure.
- Protect the fan from the weather both during transport and storage.

In particular, cover the intake and delivery openings, bearings, shafts and any parts that are not painted.

- Frequently inspect (at least every two months) the fan and turn the rotor by hand.
- Do not store the fan near any machinery that produces vibrations.
- Avoid environments with extreme temperature jumps.

3.2 Installation in potentially explosive environments

- Installation must be carried out in accordance with the provisions of applicable regulations that are in force.
- Only expert personnel with full knowledge of these regulations are allowed to operate these fans.

The installation of the fan in a potentially explosive atmosphere **is the strict responsibility of the user**, (unless specified otherwise in the technical-commercial documentation).

“ATEX” dangerous zones 

To guarantee the safety of the installed plant, the entire classified zone around the fan for a radius of 2 meters in the three orthogonal directions must be considered as the higher risk zone as identified for the fan, unless specified otherwise.

No Smoking

Smoking and the use of open flames is strictly forbidden in the operating range of the ATEX fan.



Fig. 2 – No smoking sign

Earthing connection

To guarantee safety against triggering an explosion, the fan structure should be connected to an efficient earthing system, with an automatic differential switch upstream from the motor to turn off the fan.



Fig. 3 – Earthing symbol

Zones containing potentially explosive atmosphere must be marked with the following sign:



Fig. 4 – Sign indicating ATEX zones (Annex LI, with Leg. Decree 81/2008)

3.3 Temperatures

The normal working temperature is in the range between 15 and 80°C, and does not require special marking.

Special marking is required in the case of higher temperatures.

The minimum and maximum temperatures are given below for the intake fluid, to ensure the fan remains within the defined temperature class.

Gas

Temperature class	Fluid temperature	
	Minimum (°C)	Maximum (°C)
T1 (450°C)	15	355
T2 (300°C)		200
T3 (200°C)		145
T4 (135°C)		90
T5 (100°C)		60
T6 (85°C)		45

Dust

Temperature class	Fluid temperature	
	Minimum (°C)	Maximum (°C)
T200 (200°C)	15	150
T155 (155°C)		110
T135 (135°C)		90
T125 (125°C)		85
....		

 EUVEUROVENTILATORI THE AIR TAKES SHAPE	Euroventilatori International S.r.l. Via Risorgimento, 90 36070 S. Pietro Mussolino - VI tel.0444-472472 r.a. fax. uff.tecnico 0444-472418	ATEX supplement to the instruction Manual SAXMI017
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- For min. and max. fluid temperatures different from those above, consult the fan manufacturer.
- As the motor and other electric components have been designed for a max. temperature of 40°C, the installation situation must be carefully analysed.

3.4 Controls

The controls are listed below that must be conducted in the various phases:

Preliminary controls		
3.4.1	Check the ID plate data on the fan and motor	Check the product category is suitable for the zones where they are to be installed (see paragraph 1.3).
		Check the temperature class is suitable for the gas and/or dust present in the zone.
		In the case of gas, check the gas group (IIA, IIB or IIC) is suitable for the type of gas present in the zone
3.4.2	Check the project data	Check the fan is suitable for the type of use concerned
3.4.3	Check rotating parts	Rotate these parts by hand to ensure they turn freely
3.4.4	Check the distances between the fixed and rotary parts	They must be within the limits given in paragraph 5.2
3.4.5	Check all the nuts and bolts are tight	
3.4.6	Check the bearings are correctly lubricated	
3.4.7	Check the drive components	These components must correspond to the data given in the attached technical chart
3.4.8	Check all the guards are installed	According to the installation method, assess whether any fixed guards are needed on the delivery and/or force lines (see paragraph 2.2)
		Even when the fan is connected to piping on both intake and delivery, any foreign bodies and particles must be prevented from entering.
3.4.9	Check the choice of external components	Check the risk of any leaks when choosing components and/or equipment to be installed on the outside of the fan
Positioning		
3.4.10	Check the minimum access spaces	Before installation, check the minimum access spaces that are required for maintenance purposes
3.4.11	Check the assembly position	The assembly position must guarantee adequate cooling for the motor, and the ventilation openings must not be obstructed
3.4.12	Check the earthing point	Check the correct connection to earthing point of the fan and the electric motor

4 COMMISSIONING

ATTENTION:

- The fan must not be started until it has been correctly connected to the intake plant.
- Commissioning the fan is subject to the machine or plant where it is installed being declared in conformity with Directive 2006/42/EC and applicable standards and legislation.
- Consecutive motor starts must be avoided. After each start, the motor must be left to cool down in compliance with the manufacturer's instructions.



Before starting the fan, check the free distances between the fixed and rotary parts (see paragraph 5.2).

4.1 **Electric wiring**

- Authorized personnel only, qualified according to the above mentioned standards, can operate on these equipments
- Check the motor ID plate data: they must be compatible with the electric circuit being connected and suitable for the type of start-up.
- Connect the earth wiring to the earthing lugs on the fan structure, on the motor frame and in the junction box
- Connect the motor according to the Manufacturer's instructions.
- The motor must be wired according to the prescriptions of current standards and legislation.

ATTENTION:

- If any thermal circuit breakers are installed to prevent exceeding the maximum surface temperature on the motor, follow the manufacturer's instructions for connecting these to the control circuit.
- The client is responsible for the correct dimension of the safety devices and electric wires, according to the installed motor and electric power line.

4.2 Controls after commissioning

Controls after commissioning		
4.2.1	Check the rotation direction	It must be the same direction as that shown by the arrow
4.2.2	Check the intake current	It must not exceed the rated current level given on the motor ID plate.
		Measure the intake current on one of the three line leads (L1, L2, L3).
		In Y/D connections, the measurement must be taken upstream from the switch: if that cannot be done, measure the phase current on any of the 6 leads to the terminal block and multiply the reading by 1.73 (√3).
4.2.3	Check there are no dangerous vibrations	The vibration level must be within the limits established in ISO 14694 standards for BV-3 category
		In the case of excessive vibrations, immediately stop the fan
4.2.4	Check the bearings temperature	A short increase in temperature followed by a decrease is normal, the normal running temperature is the one that counts, when there is no further tendency to increase
4.2.5	Check the distances between the fixed and rotary parts	They must be within the limits given in paragraph 5.2.
4.2.6	Check the nuts and bolts are tight	After a few hours working, check the nuts and bolts are still tight
4.2.7	Check the transmission	After a few hours working, check the pulley is tight and the right tension in the belts; correct if necessary.
4.2.8	Check the motor ventilation	Check the motor has sufficient ventilation
4.2.9	Check the working conditions	Check the ambient temperature
		Check the conveyed fluid temperature
		Check total delivery and pressure
		Check the rotation speed (especially the variable speed fans) The values as given above must be within the limits given on the technical specification plate.
4.2.10	Check the monitoring devices	Check the monitoring devices are in perfect working order
4.2.11	Check the earthing points	Check the fan and motor earthing connections are correct

5 MAINTENANCE

Correct and regular maintenance guarantees long term fan efficiency and safety. The maintenance intervals must be defined according to the environmental conditions and the type of application.



Before working on the fan, disconnect the motor and take any measures to prevent other people entering the area



Ensure no explosive gas or dust is present while the maintenance work is being carried out.

ATTENTION:

- The maintenance work must be carried out in accordance with current applicable standards that are in force.
- Only expert personnel who have full knowledge of these standards are authorised to carry out work on this equipment.

5.1 Scheduled maintenance

Pos.	Assembly	Work
All the fans		
5.1.1	General	Check all the nuts and bolts are tight Check there are no dangerous vibrations. The vibration level must be within the limits established in ISO 14694 standards for BV-3 category. In the case of excessive vibrations, immediately stop the fan. NOTE: For 2D category fans, the presence of dust could unbalance the rotor, and therefore the vibration controls are compulsory. The alarm and arrest limits must comply with the ISO 14694 standard specifications. Check there are no abnormal noises Check the level of general cleaning Check the distances between the fixed and rotary parts Check the wiring is correctly connected to the ground points Check the state of the plant the fan is wired to (follow the manufacturer's instructions).
5.1.2	Rotor	Check the level of cleanliness, inspecting the rotor through the flaps on the side of the casing. Remove any encrusted dirt or material deposits. NOTE: Certain small models or which have a very small casing may not have these side flaps! Provide the necessary space and technical devices so that it is easy to dismantle the casing during the scheduled inspections. Check the state of the welding Check for signs of corrosion and/or wear, especially on fans that are used to extract dust.
5.1.3	Drum Casing Nozzle	Check the level of cleanliness. Remove any encrusted dirt, material deposits or foreign bodies. Check the state of the welding Check for signs of corrosion and/or wear, especially on fans that are used to extract dust. Check the state of the gaskets
5.1.4	Protection devices	Check the state of any gaskets that are fitted Check for signs of corrosion and/or wear.

5.1.5	Accessories	Check the state of any gaskets that are fitted
		Check for signs of corrosion and/or wear
5.1.6	Monitoring devices	Check the level of cleanliness
		Check they are working efficiently.
		Follow the manufacturer's maintenance instructions
5.1.7	Working conditions	Check the ambient temperature
		Check the conveyed fluid temperature
		Check overall delivery and pressure
		Check the rotation speed (especially on variable speed fans).
		The levels must be kept within the limits given on the ID plate
5.1.8	Motor	Check it is correctly wired to the ground points.
		Follow the manufacturer's maintenance instructions
Indirect belt-driven fans		
5.1.9	Pulleys	Check the races are clean; clean with a dry cloth
		Check the alignment
5.1.10	Belts	Check the belts are clean; clean with a dry cloth
		Check the correct tension
		Check for signs of wear
5.1.11	Support	Check the bearings are correctly lubricated
		Check the temperature of the bearings.
		NOTE: Fans that are subject to heavy duty work should be constantly monitored using a specific sensor
Direct elastic-joint drive fans		
5.1.12	Joint	Check the alignment and centring
5.1.13	Support	Check the bearings are correctly lubricated.
		Check the temperature of the bearings.
		NOTE: Fans that are subject to heavy duty work should be constantly monitored using a specific sensor
5.2	Distances between fixed and rotary parts	
	Axial fans	The minimum distance between the rotor and drum should be equal to at least 1% of the contact diameter; it must not be less than 2 mm or more than 20 mm.
	Centrifugal fans	The minimum distance between the rotor and casing must be within the limits given in the reference standards. The distance between the contact diameters must not be less than 2 mm or more than 20 mm, according to the size of the fan
	Shaft passage	The minimum distance between the rotor hub and the fan structure must not be less than 2 mm or more than 13 mm

ATTENTION: The distance between the fixed and rotary parts may change depending on the temperature and vibrations. For indirect belt-driven fans, the distance between the fixed and rotary parts must be checked each time the belt is tensioned.

6 ATEX marking

An ATEX classified fan is shown by the marking on the main specification plate.

The specification plate gives:

- The manufacturer's details.
- The **CE** mark.
- The logo  that identifies ATEX products.
- The fan type/code.
- The year of manufacturing.
- The serial number.
- The group (**II** = surface industries)
- The product category (**2** or **3**)
- The type of atmosphere (**G**= gas; **D**= dust)
- Symbol **Ex h** which means Atex non -electrical equipment
- The group of gases (**IIA, IIB** o **IIB+H₂**) and/or of dusts (**IIIA, IIIB, IIIC**)
- The protection level of the equipment (**Ga, Gb, Gc** for gases and/or **Da, Db, Dc** for dusts)
- The temperature class (**T1 ÷ T6** or **Tmax**).
- Motor data ... output, poles and frequency.
- Admissible fluid temperature and ambient temperature
- Fan range, delivery and total pressure.
- Fan rotational speed.
- Reference to the technical dossier R 307867 rev. 01-2017.
- The symbol  if the equipment has been altered and brought into conformity to standards and the conformity certificate (IEC 79-19 and corresponding national standards).

EUV euroventilatori		CE	
Euroventilatori International Srl via Risorgimento 90 - S. Pietro Mussolino 36070 Vicenza - Italy / +39 0444 472472			
Industrial Fan Type			
Constr. Year		Serial No.	
CE 	II	Ex h	
CE 	II	Ex h	
Motor Type		Poles	kW Hz
Fluid temp.	°C	Amb. temp.	°C
Flow rate	m³/s		
Tot. Pressure	Pa		
Fan Speed	r/min	Ref. Tech. File	
www.euroventilatori.com		TA2017EX.00	

Fig. 5 – Example of an ATEX specification plate

The safety marking, as given in European Directive 2014/34/EU and relative harmonised standards, must clearly specify the product category for the respective reference zone.

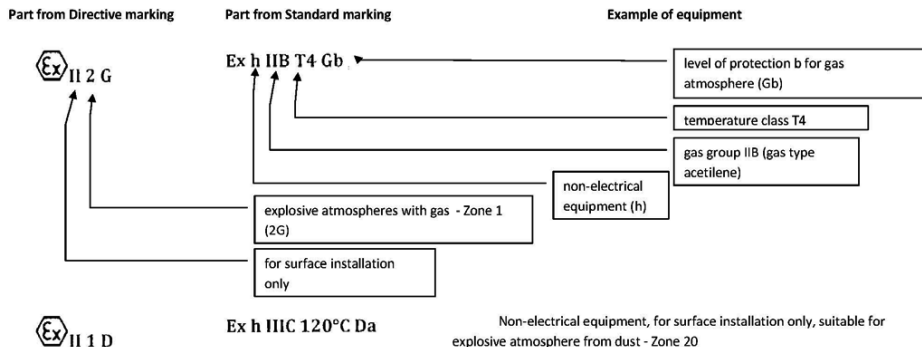


Fig. 6 – Examples of ATEX marking for a non-electrical equipment

7 Using and preserving the manual

a. Addressees

A copy of this manual is delivered together with the fan and it is addressed to the person responsible for the machine the fan is mounted on, and to all those who may have to use or operate the fan.

b. Purpose

Euroventilatori International urges the maintenance manager to carefully read this manual before beginning any work on the fan, and to ensure the fan operators or whoever has to work on the machine the fan is mounted on are fully informed of the contents of the manual.

8 Alterations and repairs

Any alterations and repairs to ATEX classified equipment must be carried out by the manufacturer or a workshop authorised by the same, and they must be fully trained in the explosion risks.

Only original spare parts must be used that are certified and supplied by the manufacturer.

All the repairs must be recorded by:

- The manufacturer
- The repairer
- The client – user

Any alterations or repairs that are not carried out in compliance with the above will automatically render the fan's safety guarantee certificate null and the user will be fully responsible for all consequences.





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