Operation and Maintenance Manual

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SOKÓŁ

Smoke and heat exhaust fans

SMAY Sp. z o.o. / ul. Ciepłownicza 29 / 31-587 Kraków
tel. +48 12 680 20 80 / e-mail: info@smay.eu
www.smay.eu

OPERATIONS AND MAINTENANCE MANUAL
SMOKE AND HEAT EXHAUST FAN ”SOKÓŁ”

DO NOT INSTALL THE FAN BEFORE READING THIS INSTRUCTIONS. KEEP THEM FOR FUTURE APPARATUS MAINTENANCE OR MANIPULATION.

Subject:

- Direct motor axial fans SEFS-SEFSX, SEFL-SEFLX range (inside hazadrous area) category F400˚C/2h, F300˚C/1h.

Manufacturing features:

- Long (SEFL-SEFLX) or short (SEFS-SEFSX) cased axial fans with reinforced body;
- Modular motor-impeller assembly. Cast aluminium impeller with variable pitch angle;
- Epoxy powder finishing coat;
- Housing with motor access door.
- Standard asynchronous squirrel-cage motor with IP-55 protection and Class H insulation, CERTIFIED 400ºC/2H. Manufactured with standard voltages: 230/400V 50Hz in three phase motors, up to 5,5HP and 400/690V 50Hz for higher powers.

F400 and F300:

All F400 and F300 category fans manufactured by the Manuafacturer and described in this manual are in compliance with EN 12101-3. The selected model can either be installed inside the hazarodus zone (Fans with F400 and F300 motors intended to use inside hazardous area) or be used to transport high temperaturę gases (installation outside hazardous area). The exterior models are equipped with normal-serial motors and other components not suitable to be installed inside hazardous area.

F400 AND F300 FAN OPERATION MUST ALWAYS BE VERIFIED IN THE FAN LABEL F400-IMMERSED//F400-ETERIOR OR F300-IMMERSED//F300-EXTERIOR DUTY. ALL F400 AND F300 FANS ARE INTENDED FOR DUAL PURPOSE OPERATION.

F400/F300+ATEX CATEGORY 3

ATEX fans manufactured by the Manufacturer are designed to be used in explosion hazard zones according to the corresponding official standards. These fans are only manaufactured on special request. The Manufacturer can supply the most suitable fan model for each risk zone, gas ord ust group: GROUP II G CATEGORY 3 and GROUP II D CATEGORY 3. These fans under any circumstances cannot be used in atmospheres with presence of gases from GROUP II C (such as hydrogen). These fans cannot be used in IIG and IID category 2 applications.

GROUP, CATEGORY AND TEMPERATURE MUST ALWAYS BE SPECIFIED IN THE FAN LABEL.

THIS FAN HAS BEEN SPECIALLY MANUFACTURED TO COMPLY WITH THE F400/F300 OR F400/F300 ATEX CATEGORY 3 SECURITY DEMANDS. DO NOT REPLACE OR MODIFY ANY OF ITS COMPONENTS WITHOUT MANUFACTURER’S PREVIOUS AUTHORIZATION.

SAFETY STANDARDS

The safety general standards must be respected meticulously during all the phases of operation and maintenance of the fan. The not observance of such standards could make the systems and the safety prescriptions inefficient anticipated in phase of planning and construction of the roof fan. The Manufacturer declines every responsibility for damages or consequential lesions from the non-observance of the safety standards written here under.

- The fan must be installed by authorized personnel only.
- The fan’s user must be sure that all the operator’s manual instructions are observed. Please, read general instructions included to the fan.
- All actions carried out in a negligent and reckless manner may cause danger for the user;
- The maintenance and repair processes must be carried out by trained personnel.

- Turn off the fan before carrying out maintenance and repair processes;
- All modifications must be carried out only by the supplier's authorized personnel.
- Do not exhibit the roof fan at bolts of water.

CONFORMITY WITH EU DIRECTIVES

All fans manufactured and supplied by SMAY have been manufactured in accordance with the 2006/42/CE (MACHINES) safety standard and according to the low voltage durective 2014/35/UE.

The electric components and different types of motors used in the ATEX models comply with the safety requirements. Additional structural modifications have been made in order to avoid the sparkling, which may occur as a result of friction between static and mobile components or the electrostatic discharges. Do not manipulate or modify any of components.

All the fan applications, where an electronic velocity regulation system is needed, should previously be consulted and authorized by the Manufacturer, and comply with 2014/30/UE directive on electromagnetic compatibility. The use of any unauthorized type of electronic controller with the fan may by very dangerous and make the safety devices not be in compliance with F400/F300 or F400/F300 ATEX CATEGORY 3.

In order to provide safety during fan maintenance, the Manufacturer recommends the installation of a STOP/START safety switch with manual disconnection, appropriate to operate in explosion hazard zones and in compliance with the ATEX 2014/34/CE directive. These devices must also meet the requirements of F400 or F300 class.

PRIOR THE INSTALLATION PLEASE VERIFY THAT THE CHARACTERISTICS SPECIFIED IN THE APPARATUS COMPLY WITH THE APPLICATION REQUIREMENTS. VERIFY THAT THE GROUP, CATEGORY, AND TEMPERATURE CLASS SPECIFIED AT THE DEVICE PLATE ARE COMPATIBLE WITH THE PARAMETERS REQUIRED FOR THE INSTALLATION.

APPLICATIONS

The requirements and characteristics of each fan model are always conditioned by the general and local standards and regulations. Thus in some cases the selected standard units may not be adequate for certain applications and should be additionally equipped with special characteristics. For example, units intended for the installation in explosion or fire hazard zone should comply with 2014/34/UE directive and therefore equipped with some protection systems. Units intended for installation in ventilation systems for emergency services shall be in compliance with EN 12101-3 standard and with the Regulation of the European Parliament and of the Council (EU) No 305/2011. Other characteristics such as increased operation temperaturę or operation in corrosive environments may require special models to guarantee proper oparation.

THE FAN LABEL INDICATES THE FAN COMPLIANCE WITH APROPRIATE STANDARDS. IN CASE OF ANY DOUBT PLEASE CONTACT THE MANUFACTURER

The selected fan model should neither be used for transporting gases with composition or temperaturę different than specified by the Manufacturer nor operate in external conditions other than specified.

IN THE ATEX RANGE OF FANS, THE TEMPERATIRE REACHED BY EACH SURFACE OF THE FAN HAS BEEN CALCULATED IN A WAY THAT THE PRESENCE OF SPECIFIED GASES CANNOT CAUSE A RISK OF IGNITION. ANY UNSUITABLE USE OR OVERLOAD OF THE FAN CAN CARRY A SECURITY RISK.

RECEPRION AND CHECKING

Prior to the dispatch, fans are properly packed. It is recommended to thoroughly check the device for the damage in transport. Every claim should be immediately reported to the transport company.

TRANSPORTATION AND STORAGE

Transport companies and all intermediaries involved in the transportation and storage of fans, up to the place of their final destination, are responsible for damage to the equipment resulting from improper transport or storage.

Any impact may cause damage to more sensitive fan components such as rolling bearings or motor (components that can jam or distort and therefore lose balance).

While storing the device, until installation, protection must be guaranteed against external factors such as dust, rain, ultraviolet radiation (direct exposure to the sun), high humidity and rapid temperature changes.

Careful and proper transport of the fan is recommended in accordance with detailed graphic indications of directions. Each fan, depending on its weight and design features, will be delivered in a single cartoon box or on a pallet. It can also be equipped with handles arranged for transport using a crane.

QUALITY CONTROL

OPERATION: Prior to the delivery, all fans are subjected to electrical, safety and operational tests. The device will work properly if it has not been damaged during transport and has been correctly installed (as indicated in this manual).

BALANCING: It is recommended to verify the fan befor the installation. The impeller should be manually put in motion and checked whether it does not put up any resistance, etc. due to possible damage during transportation.

DO NOT INSTAL OR TURN ON THE FAN IF ANY DAMAGE HAS BEEN NOTICED; IN THAT CASE IMMEDIATELY CONTACT THE MANUFACTURER.

GUARANTEE FOR PRODUCTS

The Manufacturer will always provide the desired fan in accordance with the requirements for installation and service. All components used in the selected model will be suitable only for the flow and working conditions indicated by the customer.

THE MANUFACTURER SHALL NOT BE RESPONSIBLE FOR ACCIDENTS CAUSED BY INCORRECT MOVEMENT OF THE FAN AND FAILURE OF ANY OF THE RECOMMENDATIONS AND SAFETY STANDARDS REFERRED TO IN THIS MANUAL.

WARRANTY PERIOD: The fans have a one-year warranty period from the date of the order (the invoice for the device should always be kept). This warranty period will expire after one year, even if the fan has not been installed or used immediately after its purchase from the Manufacturer. This warranty excludes any defects, damage or breakdowns caused by incorrect or excessive use of the device, normal wear, overloading or maintenance by persons who are not the Manufacturer's employees or its technical service. The obligation under this warranty is limited to replacing parts deemed defective after being tested by our specialists.

Maintenance, possible adjusting and fan repairs should be carried out by suitably trained specialists. During the warranty period, repairs may be carried out only by authorized personnel and with the prior consent of the Manufacturer. The Manufacturer reserves the right to make decisions where, under the warranty, repairs will be carried out and which transport companies will be used for transport.

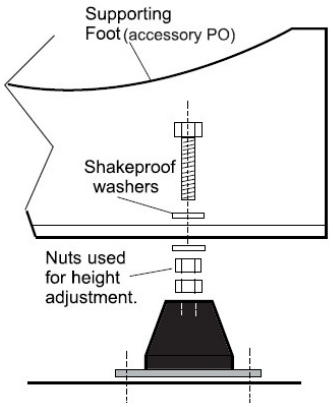
INSTALLATION AND OPERATION

PLEASE CHECK: Ensure proper horizontal and vertical leveling of the fan, even for devices that are to be installed directly on the wall or on the roof, also when using a support system or additional construction. The horizontal supports must be sufficiently smooth and leveled and properly installed in the case of concrete base. It is also necessary to provide brackets with adequate strength and stiffness to support the weight of the fan; and its inertia in the initial phase. In the case of fans mounted on the roof, particular attention should be paid to the appropriate reinforcement of the fan load point and to ensure that any vibrations of the device do not affect the tightness of the roof. Normal vibration of the device during its operation depends mainly on the rigidity of the structural element on which the fan will be mounted.

The use of rubber shock absorbers for internal fans is not recommended. If shock absorbers are necessary to avoid vibrations and the propagation of noise, only metal shock absorbers should be used. Flexible couplings approved for F400 / F300 - F400 / F300 ATEX Category 3 should be used both at the inlet and outlet of the fan, in order to effectively isolate the device from the ductwork. The used insulation elements should not change the safety requirements for the installation. In rigid installations on cement bases or walls that are not properly aligned, do not tighten the screws completely. Before installation, fill free spaces with small strips of panels, washers or quick-drying cement in a way that ensures proper support of the fan.

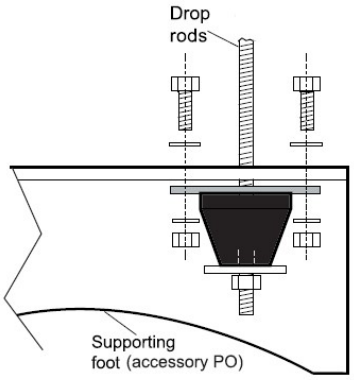
HORIZONTAL INSTALLATION (FLOOR OR SUPPORTED FROM A WALL)

At this stage, attach the elastic fasteners to the unit's mounting brackets. If the device is supported from the wall, support brackets should be used. It is necessary to set and level the device with respect to the duct in both the vertical and horizontal planes, and if necessary, adjust the height of the mounting feet. Suitable silencers and any additional accessories should be fitted to the fan before installation. Suitable flanges are mounted to the duct ended with rivets.



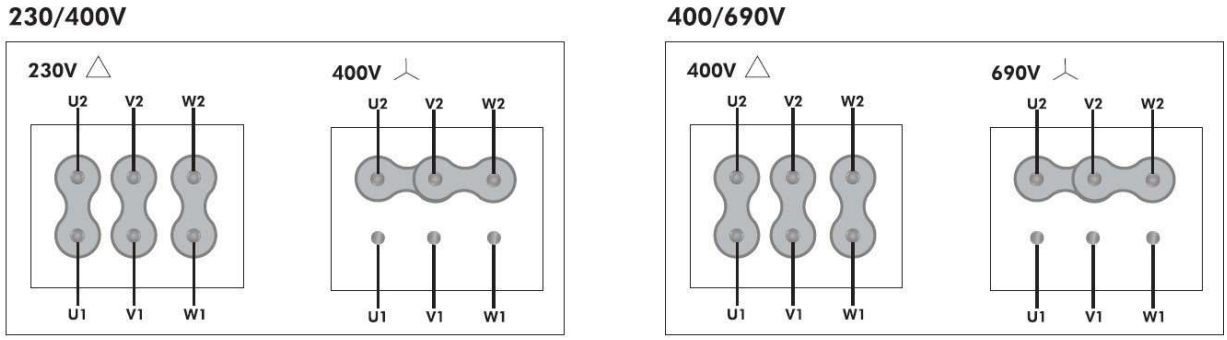
SUSPENDED INSTALLATION (HORIZONTAL OR VERTICAL)

Anti-vibration springs and screws should be provided by the installer. Anti-vibration springs must be placed in such a way that they are used only in compression. Place large metal washers under the spacers.

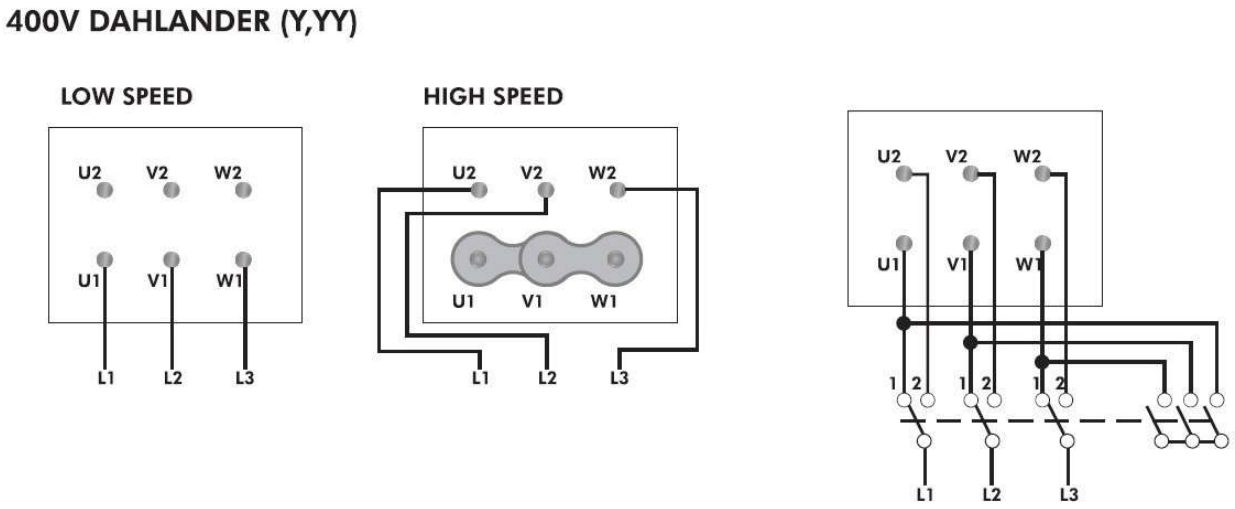


ELECTRICAL CONNECTION AND INSTALLATION:

CONNECTION DIAGRAM. A SINGLE-SPEED SYSTEM



CONNECTION DIAGRAM. A DUAL-SPEED SYSTEM



CONNECTION DIAGRAMS OF EACH FAN AVAILABLE INSIDE THE MOTOR CONNECTING BOX.

ATEX CATEGORY 3 MODEL SHOULD BE CONNECTED FROM THE INSIDE THE MOTOR CONNECTING BOX. FOR INTERMEDIATE CONNECTIONS, USE THE APPROPRIATE CONNECTION BOXES MEETING ATEX CATEGORY 3 REQUIREMENTS FOR HAZARD ZONES. PLEASE READ THESE INSTRUCTIONS CAREFULLY FOR CLASS F400 / F300 OR F400 / F300 ATEX CATEGORIES 3. IT IS IMPORTANT THAT SUPPLY CABLES AND OTHER ITEMS USED IN THE INSTALLATION MEET THE REQUIREMENTS OF ATEX CATEGORY 3, AS WELL AS WITH REGULATIONS ON INDUSTRIAL INSTALLATIONS ("low-voltage directive"), and therefore suitable voltage-sensitive protective systems (motor protection system, differential protection, line limiter and earthing) should be used. For motors exceeding 7.5CV (5.5 kW), temporary or electrically controlled startsups are recommended in order to avoid excessive charging points and to obtain more smooth startsups. The internal fan must be connected directly to the motor connection box, avoiding gaps that do not guarantee durability and reliability when operating at 400 °C for 2 hours. The cable or wires used should be adequately protected to avoid damage to the fan components, etc., and must comply with the requirements of the appropriate F400 or F300 standard.

FOR INDIRECT CONNECTIONS, USE BOXES WHICH MEET THE REQUIREMENTS F400/F300 OR F400 ATEX CATEGORY 3 (READ CAREFULLY THE INSTRUCTIONS FOR F400/F300 OR F400/F300 ATEX CATEGORY 3). WIRES KNOWN AS "FLAME RETARDANT" WHICH DO NOT GUARANTEE THE PROPER OPERATION IN THE F400 CLASS ARE NOT SUITABLE FOR THIS FUNCTION. THE MANUFACTURER RECOMMENDS THE VS OMERIN WIRES, THAT WERE PROPERLY TESTED WITH OUR FANS.

In the indicated models, the connection should be made using the thermal protection included in the motor (SEE: CHAPTER FAN MAINTENANCE).

EACH ELEMENT OF THE WIRING SHOULD BE PROPERLY INSTALLED AND SELECTED IN ACCORDANCE WITH CLASS F400/F300 OR F400/F300 ATEX CATEGORY 3 STANDARD. PAY SPECIAL ATTENTION TO ALL METAL PARTS OF CONSTRUCTION TO BE PROPERLY EARTHED TO PREVENT ANY ELECTROSTATIC DISCHARGE.

VOLTAGE AND FREQUENCY: Read the manual of the F400/F300 or F400/F300 ATEX category 3 motor. The motor power supply should be compatible with the voltage and frequency specified on the fan label. Fluctuations of ± 5% in the electrical network in relation to the indicated nominal voltage are allowed. If the connection used cannot support this level, there is a risk of the motor being burned. It must be ensured with use of testing device that the selected Y-available of the motor corresponds to the voltage and frequency of the electrical network.

POWER CONSUMTION: When the fan is installed in the expected operating conditions, not exceeding the ones indicated on the label, it is necessary to check the consumption in point (A). The efficiency of the fan and the load on the installation must be properly adjusted (SEE CHAPTER OPERATION). In the event of non-compliance, please contact the Manufacturer.

EARTHING: As the fan is a class I device in accordance with the current standard, it is mandatory to properly connect the earthing through the sockets that can be found in the motor or in the fan casing. When the connection has been made, it is recommended that the resistance between the cable and the outer casing of the fan is not higher than 0.1.

ENVIRONMENTAL CONDITIONS: Very important: for normal working conditions (non-hazard conditions), for continuous operation, gas temperature specified for each model should not be exceeded. This is especially important for ATEX CATEGORY 3 models. The temperature of the gas mixture should not exceed 60°C. In high-pressure fans it is also necessary to take into account the heating of the gas mixture inside the fan due to compression. This should be checked with use of calculations. Firstly, make sure that the fan is marked with the correct temperature class. "T1 to T6". In addition, check whether the same or higher temperatures are indicated on the motor label. For internal fans, class F400 or F300 motor is usually H-CLASS. However, there may be exceptions. In external and internal models (during normal dual use operation), regardless of the thermal class of the motor, it is recommended not to exceed 40°C of air temperature and to maintain humidity lower than 60% in the cooling environment of the motor, so as to ensure proper cooling of the motor and extend its durability. Maximum temperature of transported air in continuous operation is from 40°C to 55°C in models with the motor inside the air stream and approx. 110°C in models with the motor located outside the air stream (these models are equipped with a cooling head tread in the axes of the motor; may work at higher temperatures). In ATEX applications it is recommended to check the temperature limit of transported gases in order to avoid the risk of ignition. In any case, it is recommended to read the information in the technical catalog, where the features of each range and model of the fan are presented in detail. For non-standard applications, other special features may apply. Always check the data sheet of each specific fan. Please contact the Manufacturer for more information.

DIRECTION OF IMPELLER ROTATION: Corresponding to the indicator located on the fan casing. To reverse the rotation of a three-phase motor with one or two speeds, two phases must be interchanged. In single-phase motors, this can only be changed for some models. In any case, check the diagram.

NOISE LEVEL: Depending on the fan model, its supply voltage, size and speed, the noise level may vary between 37 and 100 dB (A). The noise level corresponding to each specific model is specified in the data sheet. If the required fan exceeds the permitted local maximum noise limits, the use of silencers, barriers or acoustic enclosures should be considered to lower it.

CONNECTION TO DUCTWORK: When the fan is connected to air distribution ductwork, the supply and exhaust ducts should be connected to the appropriate fan nozzle, using the connection flanges recommended by the Manufacturer. Wherever possible, elastic gaskets should be used with the flanges (both accessories should be ordered separately from the fan, they should also meet the requirements of F400 or F300 and comply with the ATEX specification). Under no circumstances should the weight of the duct system be loaded on the fan. It should have its own support system. It is also recommended to leave the ductwork element removable on both sides of the fan in order to ensure access to the nozzles, so that after removing the connection flanges, it is easy to get inside the device. Axial fans should not use duct reduction (the diameter of the duct should be at least the same as the nominal diameter of the fan).

PROTECTION AGAINST ACCIDENTS: Each SMAY fan model has a rotor body protection (impeller) in accordance with PN-EN ISO 13857: 2010. The necessary protective elements must be installed to protect access to the inside of the fan, which remains open and accessible, because the fan is not connected to the duct.

THE IMPELLER OF THE FAN MAY BE UNVISIBLE DURING THE OPERATION WHEN LIGHTING IS INSUFFICIENT.

IP20 PROTECTION FOR OUTLETS AND INLETS OF THE FAN: IP20 protection is required for ATEX applications. In ductwork systems, the installer is responsible for providing such protection. During the normal inlet or outlet installation, the end user must ensure the installation of an appropriate safety guard (accessory) for the fan.

START-UP: The start of the fan start-up is possible when all previous checks have been carried out.

Before the first start-up, it is recommended to check again, directly or by checking the device inspection registers, that there is no friction of the rotating elements as a result of damage to the installation or deformation of the fan. Also check that no foreign objects are in the duct. The first start-up should be short-term and only serve to check whether the direction of rotation is consistent with the indicated one and whether there are any suspicious sounds from the inside of the fan.

THE INSTALLER IS REQUESTED TO CHECK THE VIBRATION LEVEL IN THE DEVICE. IF, AFTER VISUAL, AUDITORY AND TACTILE EVALUATION OF THE DEVICE REGARDING THE GROWTH OF VIBRATION, NOISE OR OCCURANCE OF OTHER SUSPICIOUS NOISES, THERE IS CONCERN TO THE CORRECTNESS OF THE DEVICE, FOLLOW THE PROCEDURE VIBRATION MEASUREMENT IN ACCORDANCE WITH ISO 14694 THE DEVICE MAY CAUSE LOUD SOUNDS AND VIBRATION.

In the case of incorrect rotation, the connections should be changed in accordance with previous indications. During the second start-up, the fan should be able to reach the full rated speed. When regulating dampers are used, they should be open so that the fan adapts itself to the required installation conditions.

W TYM MOMENCIE NALEŻY PRZEPROWADZIĆ DOKŁADNĄ KONTROLĘ RZECZYWISTEGO ZUŻYCIA ENERGII URZĄDZENIA ZA POMOCĄ ZACISKU AMPEROMETRYCZNEGO I UPEWNIĆ SIĘ, ŻE NOMINALNE ZUŻYCIE ENERGII „IN" NIE PRZEKRACZA ZUŻYCIA PODANEGO NA TABLICZCE NAPIĘCIA ZASILANIA. W PRZYPADKU PRZEKROCZENIA TEGO ZUŻYCIA, NALEŻY NATYCHMIAST ZATRZYMAĆ URZĄDZENIE.

Excessive energy consumption can be caused by motor damage, some component friction or electrical faults, but in most cases this is caused by incorrect installation adjustment, with too much or too little load. In axial fans, it is very likely that there is an element mounted that excessively hinders air flow.

DO NOT INSTALL ANY ELEMENTS DIRECTLY ON THE FAN. IT MAY CHANGE THE FEATURES OF THE FAN. WHEN INSTALLATION IS CORRECTED, MAKE SURE THE ENERGY CONSUMPTION IS RELEVANT. WHEN THE PROBLEMS ARE TERMINATED, THE FAN SHOULD OPERATE CORRECTLY.

FAN MAINTENANCE. GENERAL CARE

It is recommended to perform a full review of the fan installation after the first 24 hours of its operation. To prevent possible accident, disconnect the fan from the mains.

IT IS RECOMMENDED TO USE F400 / F300 OR F400 / F300 + ATEX CATEGORY SAFETY SWITCHES.

Make sure that no fan elements have loosened. Check the condition of the motor bearings by manually rotating the impeller. If any irregularity or suspicious sound is noticed, the Manufacturer should be consulted immediately.

Systems where the fan is usually turned off, should be inspected at least every 6 months. The inspection of the contitions fan components will maintain the correct initial state, as long as there are no signs of bearing sticking or noise. It is recommended to make a complete start, allowing the fan to work for one hour.

DO NOT USE BEARINGS WITH TOLERANCE FOR RADIAL RUN-OUTS AND CONVENTIONAL GREASES NOT RECOMMENDED BY THE MOTOR MANUFACTURER.

MOTORS F400/F300 OR F400/F300 CATEGORY ATEX CATEGORIES 3 USED AS SUBSTITUTES IN APPROVED FANS, MUST BE AUTHORIZED BY THE MANUFACTURER. EVEN WHEN THE REPLACEMENT MOTOR HAS ITS OWN APPROVAL, IT MAY NOT BE COMPLIANT WITH THE APPROVAL OF THIS SPECIFIC FAN. FANS FOR EMERGENCY USE CANNOT BE REPAIRED. THEY MUST BE REPLACED WITH A NEW UNIT WITH THE SAME CHARACTERISTICS AND APPROVAL OF CLASS F400 OR F400 ATEX CATEGORY 3.

PROCEDURES DURING THE MAINTENANCE:

Follow points below during the maintenance to ensure proper fan operation:

1.- The tested fan during operation should not generate any disturbing noises.

2.- Energy consumption in amperes "Ia (A)" measured by an ammeter or multimeter shall not exceed the nominal consumption "in (A)" given on the motor label.

3.- It is necessary to check that all components connected with screws are well tightened.

4.- In applications where the fans are used for the transporting of gases with a high content of dust or grease, those substances can stick to the screws leading to imbalance of the impeller and, as a consequence, deterioration of the bearings. AVOID THE DUST ACCUMULATION ON THE SURFACE OF MOTOR TO AVOID MALFUNCTION OF COOLING. Therefore, it is necessary to carry out cyclic cleaning of the rotating elements whenever there are interruptions in the operation of the installation and when the fan shows signs of slight vibrations and irregularities in operation. Never leave dust inside the fan.

5.- In other applications where there is an accumulation of dust with abrasive properties there may be a risk of impeller wear.

6.- For fans that have been turned off or stored for two or more years, full inspection of the bearings is recommended. Before the fan startup, replace the bearings if you notice that the they are rusted or grease has dried out.

CLEANING: Maintenance and proper cleaning of all components of this installation will be carried out cyclically by the employees responsible for the installation. If possible, avoid accumulation of dirt, dust, grease etc. as this is the main cause of fires and spread of fire.

SMAROWANIE: Należy wyraźnie wyróżnić instrukcje odnośnie smarowania dotyczące różnych elementów wentylatora:

GREASING: The greasing instructions for the various components of the fan should be clearly distinguished:

1.- Generally, the bearings of the electric motor are maintenance-free; However, it is recommended not to exceed the number of hours specified and given in the motor manufacturer's instructions (15,000 to 20,000h depending on the motor's brand, in this case the bearings should be replaced).

2.- The ranges of axial fans do not require greasing, but they should be replaced every 10,000 15.000h depending on the temperature range and moisture conditions of the transported air.

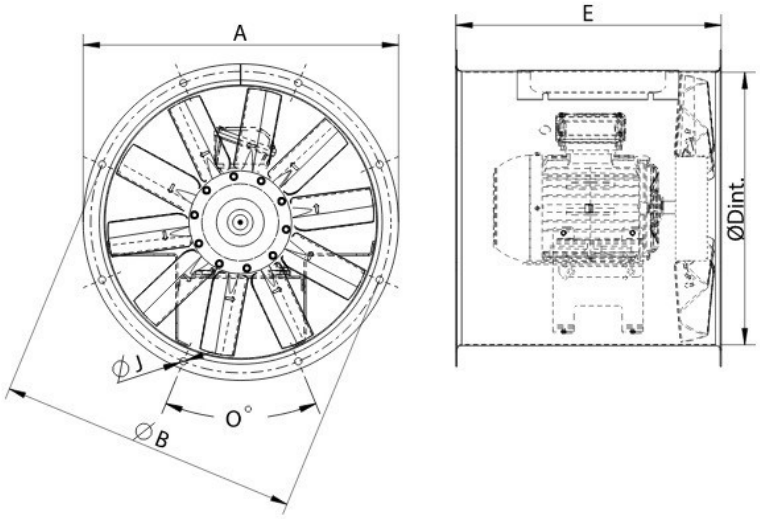
3.- The swinging brackets of bearings type NP, especially in more reinforced models, have external greasers or are adapted for their assembly. In these cases, the bearings are maintenance-free because they are sealed bearings. However, if the working conditions are extreme, their lifespan can be extended by greasing them every 500 to 1000h

of work. It is very important not to mix greases of different viscosity and chemical composition.

TECHNICAL DATA

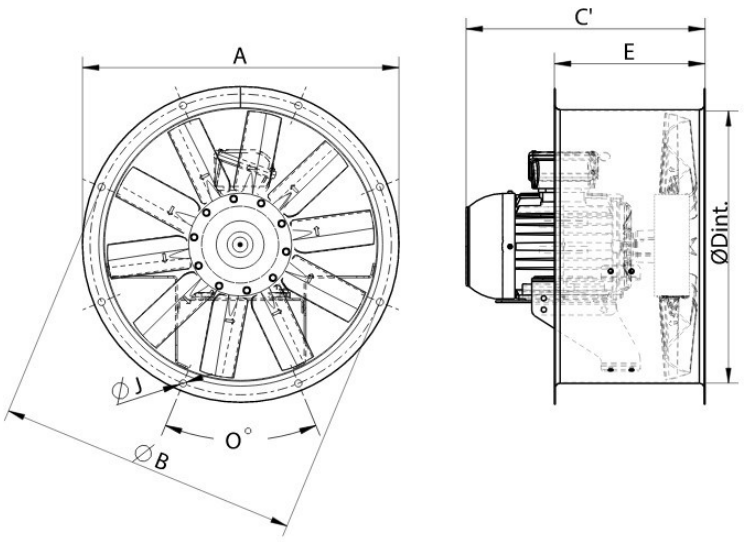
The fan specification containing all necessary technical data can be found in the model selection data sheet.

DIMENSIONS (mm) OF SEFL SERIES OF TYPES



MODEL	ØA	ØB	ØD	E	ØI	O
SEFL 30S2-B2	374	355	305	350	10	8x45˚
SEFL 35	434	395	365	350	10	8x45˚
SEFL 35S2-B2	434	395	365	395	10	8x45˚
SEFL 40	472	450	403	440	10	8x45˚
SEFL 45	525	500	452	455	12	8x45˚
SEFL 50	600	560	504	440	12	12x30˚
SEFL 50S2-B2	600	560	504	540	12	12x30˚
SEFL 56	646	620	559	560	12	12x30˚
SEFL 63	725	690	633	550	12	12x30˚
SEFL 63S2-B2	725	690	633	770	12	12x30˚
SEFL 71	802	770	715	600	12	16x22,5˚
SEFL 71S2-B2	802	770	715	770	12	16x22,5˚
SEFL 80	892	860	801	600	12	16x22,5˚
SEFL 90	1000	970	903,5	820	12	16x22,5˚
SEFL 100	1115	1070	1013	820	12	16x22,5˚
SEFL 112	1234	1190	1132	1000	12	16x22,5˚
SEFL 125	1365	1320	1263	1000	15	20x18˚

DIMENSIONS (mm) OF SEFS SERIES OF TYPES



MODEL	ØA	ØB	ØD	E	ØI	O
SEFS 35	434	395	365	250	10	8x45°
SEFS 40	472	450	403	250	10	8x45°
SEFS 45	525	500	452	250	12	8x45°
SEFS 50	600	560	504	250	12	12x30°
SEFS 56	646	620	559	250	12	12x30°
SEFS 63	725	690	633	250	12	12x30°
SEFS 71	802	770	715	350	12	16x22,5°
SEFS 80	892	860	801	350	12	16x22,5°
SEFS 90	1000	970	903,5	425	12	16x22,5°
SEFS 100	1115	1070	1013	425	12	16x22,5°
SEFS 112	1234	1190	1132	500	12	16x22,5°
SEFS 125	1365	1320	1263	500	15	20x18°

Fan start-up protocol

Project name:		**Project number:**	
Address:		**Date:**	

Name	Type	Number:
Fan		

Connection according to the fan label: yes / no*
Is there a fan earthing in the electrical cabinet yes / no*
Is there any motor protection in the electrical cabinet yes / no*
How many speeds does the fan have 1speed/2speed*
Is the fan reversible yes / no*
Does the fan operate for comfort purpose yes / no*
Is the fan equipped with thermistors yes / no*
Does the fan have connected thermistors yes / no / not applicable*
Type of motor protection (if adujustable please indicate the settings) 1speed:……A / 2speed……A*

Start-up method:
direct,start-up delay time…….s*
Y/Δ, connection time……..s, start-up delay time……* Dahlander (low and high speed, Y/2Y) *
Frequency inverter/Softstart*
Other……
……* **Operation:**
Directly
* Y/Δ, *
Dahlander (low and high speed, Y/2Y) *
Frequency Inverter/Softstart *
Is there any protection / indicator against the phase loss yes / no*
Protection test/phase loss index yes / no / not applicable*
Is there a service switch installed (please specify) yes…… / nie*

NOTE: If there is no motor protection, the Manufacturer does not grant warranty for electrical devices

Nominal data	Speed 1	Speed 2
Nominal Power:	**……..kW**	**……..kW**
Nominal current supply:	**…….A**	**…….A**
Nominal voltage:	**…….V / 50 Hz / 3 fazy**	**…….V / 50 Hz / 3 fazy**
Measured data	**Speed 1**	**Speed 2**
Motor rotation direction:	**Zgodny / niezgodny***	**Zgodny / niezgodny***
Motor L1 power consumption:	**……A**	**……A**
Motor L2 power consumption :	**……A**	**……A**
Motor L3 power consumption:	**……A**	**……A**
Network voltage:	**……..V / ……..Hz**	**……..V / ……..Hz**

Description – details of the work carried out:

Inspection: Damage / Closure / Corrosion / Contamination / Foreign object: yes / no*
Location:……..Fault has been corrected: yes / no*
Silencers comply yes / no*
Fan test start-up: yes / no* Time
Tests……min. Permission for turning on the fan by representative of installation company: yes / no*
Control: vibrations check: yes / no*
Measurement after chcecking the direction of rotation: power consumption, voltage, frequency
Device ready for operation yes / no*

Name of the installation company:	Telephone number:	Approval numer of the installation company:

Remarks of the installation company:	User's remarks:

The warranty is valid if the fan start-up report has been properly completed and written. A copy of the report should be sent back to the supplier, otherwise the warranty will be invalid.

Signature of representative of the installation company:	User's signature:

* please mark correct answer