



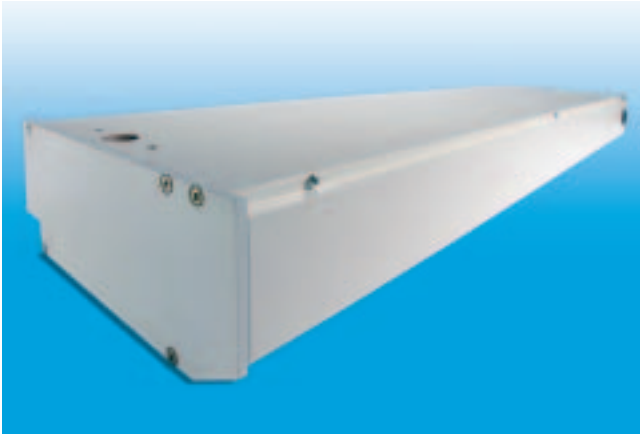
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FassadenSystemLüftung

FSL

A TROX GROUP Company

Installation, operation and maintenance
 instructions for decentralised window and
 façade ventilators Type FSL-B-100
 MW/FSL/7/EN/2



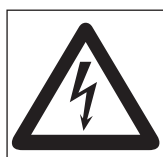
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1 General

1.1 Symbols used

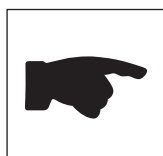
This manual contains safety information that could result in safety hazards if ignored. The safety information has been marked with the following symbols:



DANGER!
Dangerous voltage levels!
Failure to comply can result in death, serious injury or property damage.



CAUTION!
Situation possibly hazardous for product and environment.



NOTE!
Application recommendations

1.2 CE marking



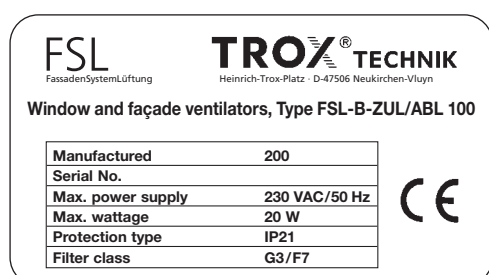
With CE marking it is documented that the equipment complies with the basic requirements of the following directives:

Electromagnetic compatibility directive
(Directive 89/336/EEC of the Council)

Low Voltage Directive
(Directive 73/23/EEC of the Council)

1.3 Product label

The product label is located on the front side of the unit.



2 Use

2.1 Application area

Type 100 façade ventilation units with noise control are decentralised units that provide function of supply or exhaust air in rooms.

The units can be installed under a sill or as the sill itself, at high level, or as part of a window head detail, vertically at the side of a window or integrated into the curtain walling. Six different casing configurations and flexibility in depth and width provide the ability to optimise the construction to suit a particular type of installation.

The modular casing construction allows the installation of the unit's external casing at an early phase in the construction process.

After the function of a room has been defined, the external casing can be individually equipped with supply air, exhaust air or blank modular inserts. The modular approach not only prevents contamination and/or damage to the modular units but also allows the flexibility to change the functional configurations after completion of the building.

2.2 Correct use based on specification

TROX façade ventilation units have been constructed according to the state of the art and the recognised requirements of safety engineering. Nevertheless, improper use can result in danger to life and limb of the users or third parties or damage to the units or other property.

The type 100 decentralised window and façade ventilator was designed to provide supply or exhaust air ventilation to individual rooms.

Any use varying from or extending beyond that described here is not considered to be the intended use.

The manufacturer/vendor does not bear any responsibility for any damage resulting from such usage. The risk is borne solely by the operator.

Particular attention must be paid to the following points during design and execution phases:

- The units will not serve as a replacement for a complete air conditioning system containing the ability to heat or cool the supply air.
- The units have been designed as façade ventilators and can only be used as such at that location. No transport medium other than air is permissible.
- Supply media other than those described in this Installation, operation and maintenance manual are not allowed.
- These units cannot be installed in areas at risk for explosions.
- These units must be accessible for maintenance purposes.
- Do not cover the suction inlet while the unit is in operation. This could result in the destruction of the unit.
- Do not use the units in the outdoors.

Proper use also includes compliance with the operating and installation instructions and fulfilling the maintenance conditions.

3 Safety

This operating manual contains fundamental instructions that must be followed during installation commissioning, operation and maintenance. It is therefore essential that these instructions be read by the installation and operating technicians prior to installation and operation and always be kept on hand at the installation site.

Follow not only the general safety information listed in this Safety section but also the specific safety information in the other sections of the manual.

3.1 Dangers if safety information is ignored

Failure to comply with safety information can endanger people, the environment and the unit. Failure to comply with safety information can render any damage claims null and void.

For example, noncompliance can result in the following hazards:

- Failure of important unit functions
- Failure of specified methods for maintenance and repair
- Electrical and mechanical safety hazards for people

3.2 Working safely

Follow the safety information in this operating manual, the existing national regulations on accident prevention and any company work, operation and safety regulations.

3.3 Safety information for operators/users

Do not remove contact protection from moving parts (such as the fan) while a unit is in operation.

Make sure there are no electrical power hazards. For more information, see e.g. the regulations published by VDE, national regulations in force in the country where the unit is to be installed and local electrical power authorities.

3.4 Safety information for installation, inspection and maintenance work

Operators must ensure that all maintenance, inspection and installation work is carried out by authorised and qualified specialist personnel that have been adequately informed by an in-depth study of this operating manual.

Basically, this unit can only be worked on when it is not in operation. The procedures described in this manual for shutting down the unit must be complied with. Immediately after work is concluded, all the safety and protective guards must be put back into place and/or started up.

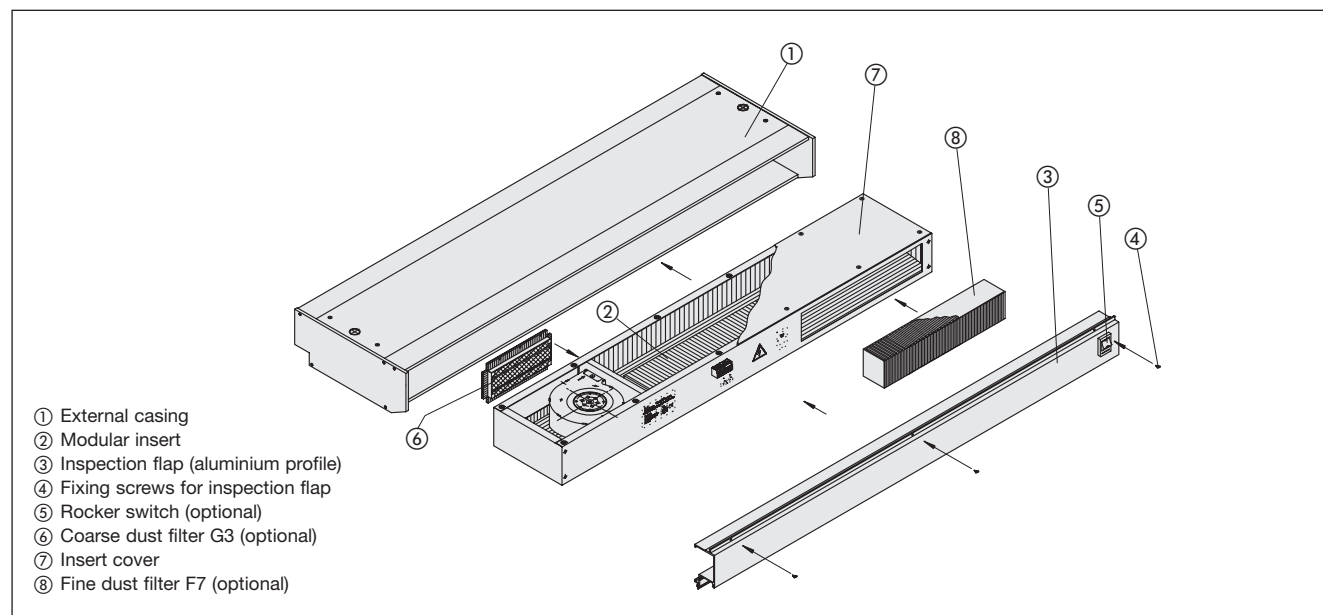
Original replacement parts and accessories authorised by the manufacturer are in the interest of safety. Alterations or modifications to the unit are only permissible after consultation with the manufacturer.

The ventilation unit uses the shortest route to transport outside air into the room. This is why the units are mounted directly below, above or to the side of windows. When installing as a sill unit it is recommended that the air discharged into the room passes through a heater during the winter period.

The external casing can as an option be fitted with control elements including a rocker switch and /or manual shut off device. Use of components from other sources and the results thereof are not the responsibility of FSL.

4 Equipment configuration

4.1 Description of functions



The ventilator consists of an external casing ① and a modular insert ②. The housing creates the thermal separation.

The external casing between the integral extrusion and the internal inspection flap ③ is a flame resistant plastic. This ensures adequate unit stability whilst providing a thermal break in the construction between front and rear.

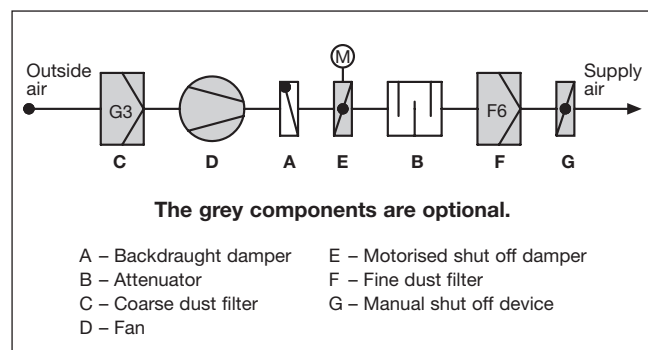
The exterior aluminium profile provides weather protection if necessary and includes an insect screen. On the room side, the inside profile can be easily opened and removed for inspection after loosening a few screws.

The modular inserts are made of galvanised sheet metal and are lined with mineral wool covered with a fibreglass mesh for noise control and thermal insulation.

To prevent reverse air flow, all units have been equipped with a standard automatic backdraught damper (A). Inflow or outflow units require a pressure differential between the outside and the inside to create throughflow. In mechanical supply or exhaust air units, a radial fan (D) pulls in outside air or discharges exhaust air to the outside.

A motorised shut off damper (E) can also be integrated into the modular insert. The units come with an optional coarse dust filter (C) and/or fine dust filter (F).

4.2 Ventilation schematic

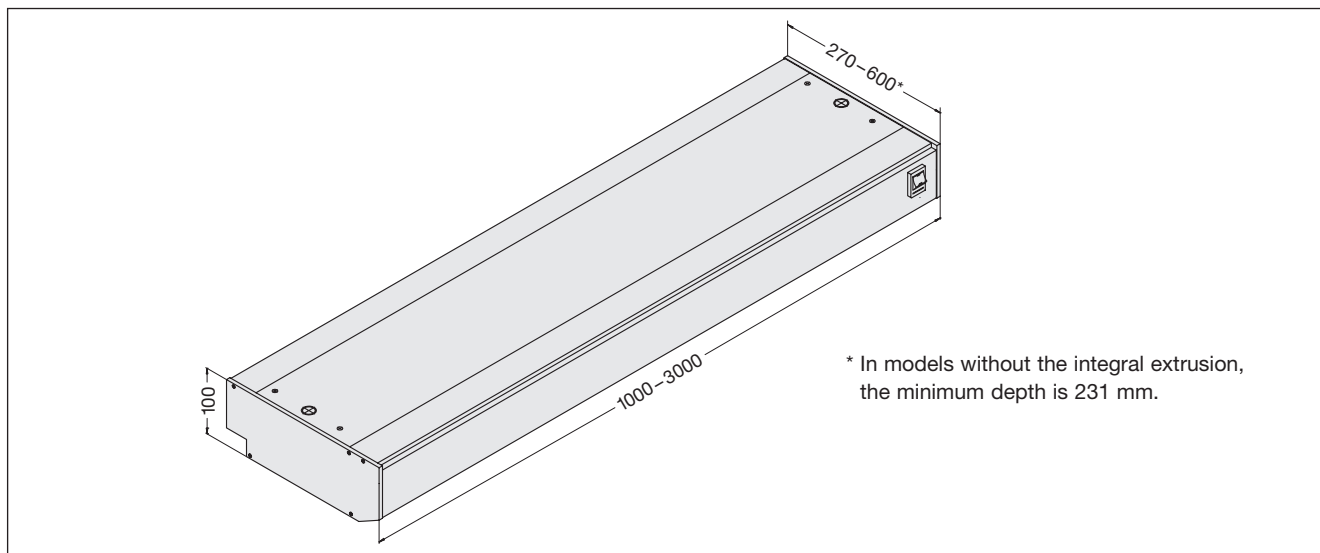


4.3 Technical data

H	100 mm
T	231 – 600 mm
B	1000 – 3000 mm
\dot{V}_{mG}	30 / 40 / 50 / 60 / 80 m ³ /h
\dot{V}_{oG} (for $\Delta p = 20$ Pa)	approx. 30 m ³ /h
P_{el} (for 230 V / 50 Hz)	18 watts
$D_{n,e,w (a)}$ (for T = 270 mm)	57 dB
$D_{n,e,w (b)}$ (for T = 270 mm)	55 dB
L_p (for $\dot{V}_{mG} = 30$ m ³ /h)	25 dB(A)
L_p (for $\dot{V}_{mG} = 50$ m ³ /h)	31 dB(A)
L_p (for $\dot{V}_{mG} = 80$ m ³ /h)	38 dB(A)

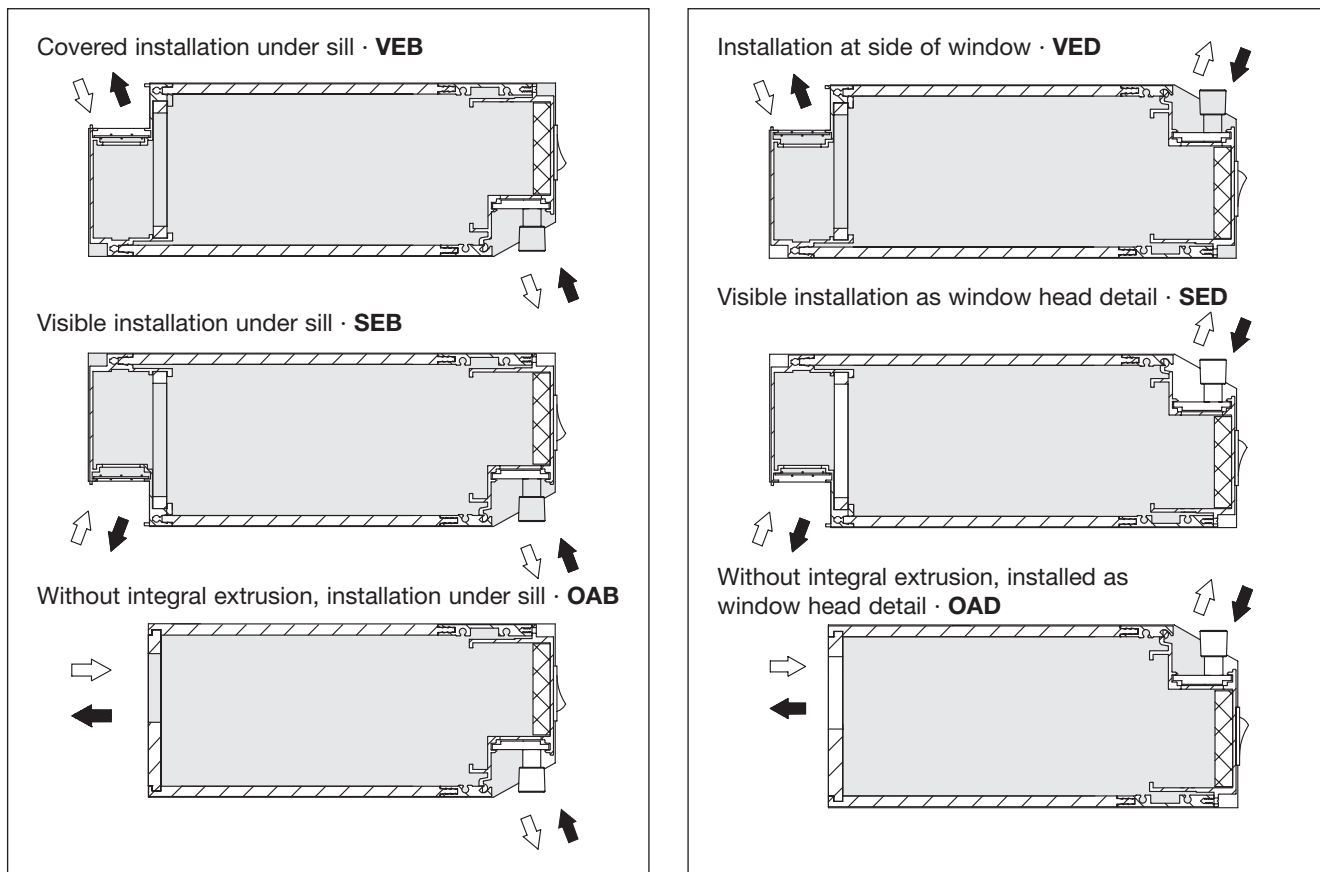
For more information and explanations of the technical data, see also Document FSL/7/D/...

4.4 Main dimensions



4.5 External casing constructions

Six different casing configurations are available. Three of the configurations are typically used for sill installation. The other three configurations are installed under the ceiling in the window head or vertically at the side of a window.



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4.6 Non-permissible modes of operation

The operating safety of the unit supplied is only guaranteed with correct use in accordance with the "General" section of this operating manual.

5 Installation

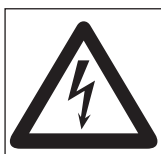
5.1 General safety information

The following instructions ensure both the personal safety of the operating personnel and the safety of the products described and the safety of any equipment connected to them.

- Disconnect the power supply prior to any installation or dismantling work.
- Check to make sure the unit's voltage matches the local power supply.
- Electrical connections must be covered.
- Check the earthed leads after installation to make sure they are functioning properly.

Follow the health and safety regulations related to the tasks being undertaken.

5.2 Preparing for installation



Switch off the fan power supply before installing the unit!

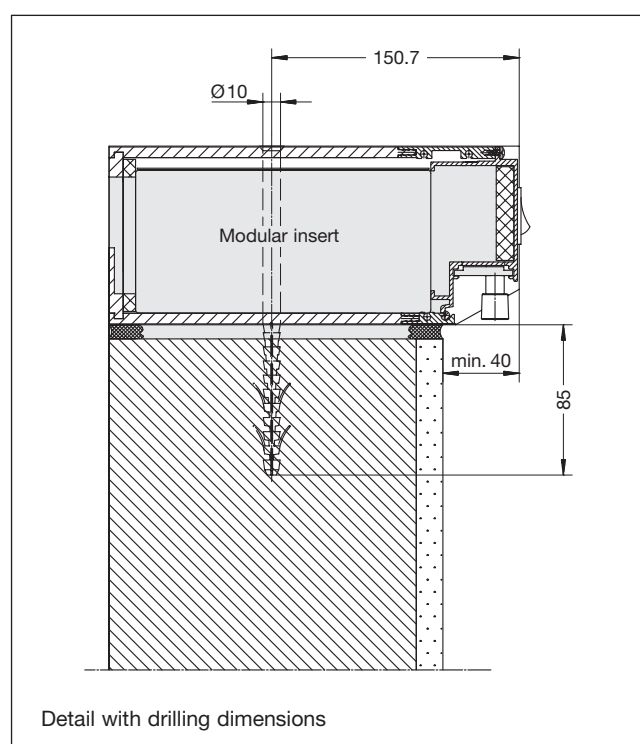
Risk of injury from rotating impeller and electrical power!

Risk of injury on edges and burrs.

Always wear gloves during handling and installation.

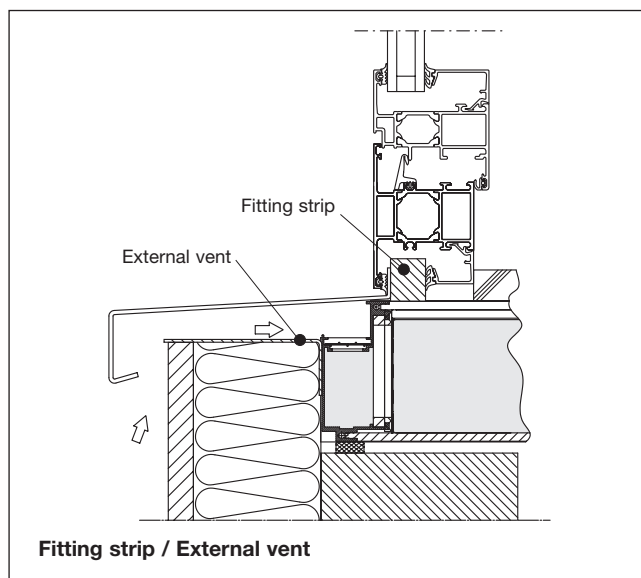
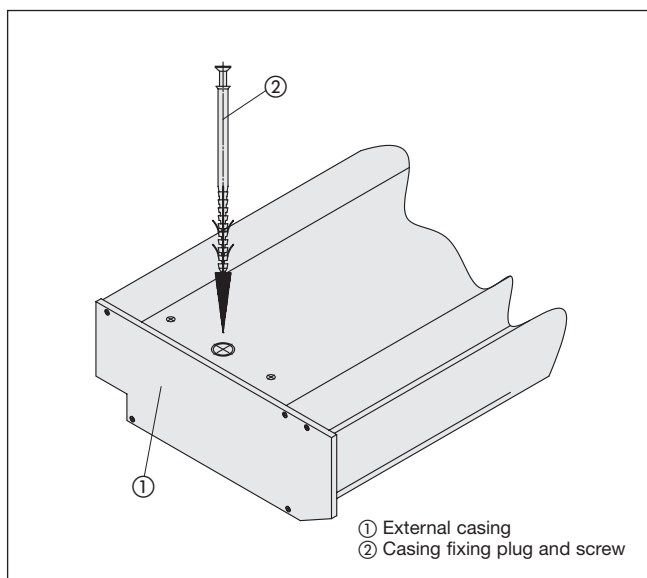
- Do not remove the unit's packaging until immediately before installation at the installation location.
- Immediately check unit for transport damage.
- Install the units correctly.
- The fixing points should only carry the weight of the unit.
- Provide separate support for adjacent components.
- Windows of up to 600 kg/m can be mounted on the unit after discussion with the manufacturer, depending on the installation situation.
- Prior to startup, check the filters for dirt caused by the installation work etc. and clean or replace them if necessary.
- Prior to startup, clean any dust and dirt from the interior of the unit.
- Check the size of outside air/exhaust air and supply air/exhaust air openings to make sure they provide the correct function.

For supply air units, the air discharges into the room downwards. Ideally onto a customer-installed heater. Make sure the unit extends at least 40 mm out from the sill (see drawing).



The optimum situation is with the inside side of the profile centred over the heater. For exhaust air units, the suction opening must not be blocked. The area of open suction vent must not be less than 100 cm².

5.3 Unit installation



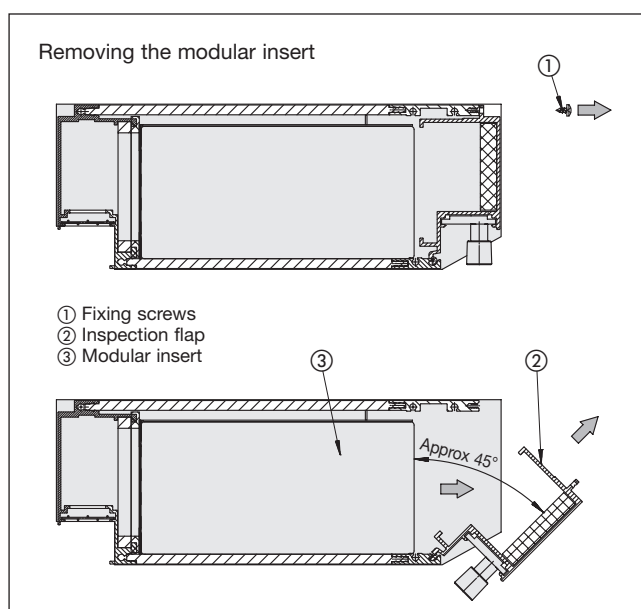
- Level any uneven areas on the sill or window head.
- Drill the holes for the plugs in the sill (diameter: 10 mm; hole depth at least 85 mm). No matter what the unit's depth is, the drilling for the plug must be located at a distance of 140 mm from the front edge of the inspection flap.
- Place the external casing in its installation location.
- Insert the screws and plugs included with delivery through the countersunk holes in the unit.
- Tighten the screws to fix the unit into place.

After the external casing is installed, customer supplied components such as windows, window sills etc. can be installed. If it is proposed to attach anything to the unit external casing the manufacturers permission must be obtained.

To simplify installation, also provided is an individually pre-installed fitting strip for fixing the window to the unit. In this case, the window is placed on the fitting strip and directly attached to it.

Another option that can be pre-installed on the casing is the external vent. This ensures that the supply air comes directly from the outside into the unit rather than from the façade or its insulation.

When installing the external vent make sure it is placed directly onto the building's exterior wall, insulation, etc., and sealed into position.



To make the electrical connections for the fan or to install the modular insert (when the exterior casing and the modular insert are delivered separately), the inspection flap's fixing screws ① must be loosened. The inspection flap can then be pulled forward by approx. 45° after which it can be removed by pulling upwards.

After sliding in the insert and making the electrical connections (see next section), the unit can be closed by proceeding in reverse order.

5.5 Commissioning

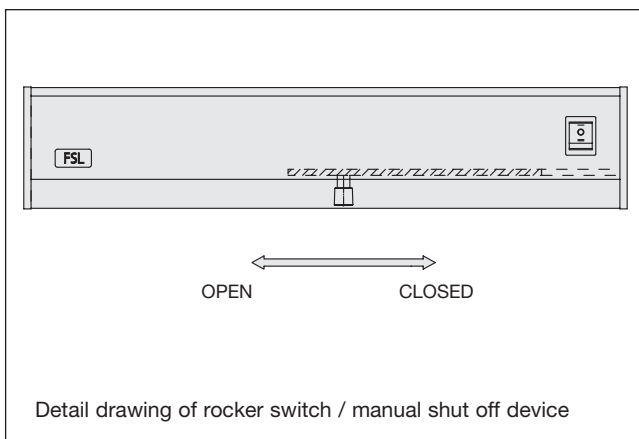
- Before startup, check the filters, if present, and replace them as necessary.
- Check the unit for dirt and clean it if necessary.
- After the unit has been successfully wired, re-install the inspection flap and use the screws (at least 3 pcs.) to fix it.
- Connect fan to the power supply and turn it on.

6 Operation

6.1 General instructions

Units with fans are operated either directly using the two-stage switch on the unit or, alternatively, via a customer-installed switch. A maximum of two volume flows can be ordered.

The following are possible: 30, 40, 50, 60 or 80 m³/h.



An optional manual shut off device on the underside of the inspection flap profile will allow stepless opening and closing of the air intake/exhaust opening, e.g. to prevent unpleasant draught conditions for inflow or outflow units during high winds.

Please remember that the manual shut off device must always be completely open (see drawing) when the unit is in operation.

If the unit contains a motorised shut off device, it will not have to be switched or controlled separately. It will open whenever the fan is switched on and will close automatically via a spring return actuator when the fan is switched off or the unit loses power (e.g. during a power outage).

6.2 Adjusting the volume flow

There are two openings located in the modular insert below the two plug connectors. Behind them are two potentiometers. They permit subsequent adjustments to the volume flow after the unit has been installed (see Connection plan 2).



Caution:

The potentiometers can only be adjusted by trained specialist personnel using nonconducting tools.

If, for example because of change of use, it becomes necessary to provide a volume flow different from the original volume flow, this will still be possible, even after installation.

7 Maintenance and repair

7.1 Cleaning



**Modular construction consisting of
External casing – Modular insert – Inspection flap**

The unit should be opened and checked for dirt at regular intervals of not more than one year.

Cleaning products are not required. The microbial inertness of the materials used prevents growth of microbes and bacteria.

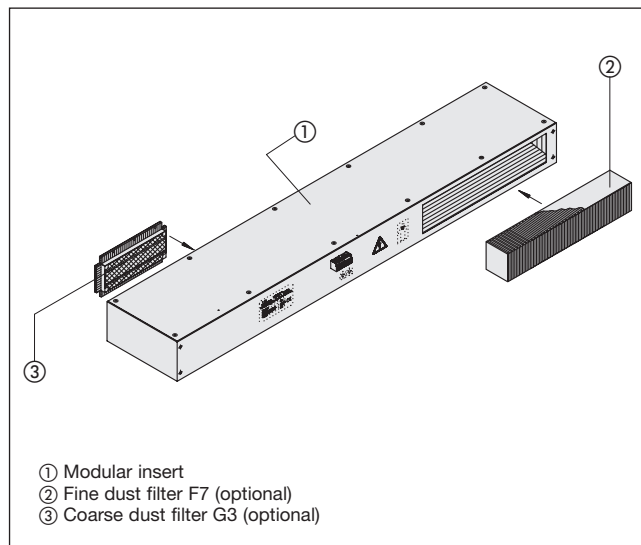
- Remove modular insert and unscrew insert cover.
- Use a moist cloth to wipe down the areas containing mineral wool covered with fibreglass mesh.
- Remove the modular insert and use either a pressurized air or a vacuum cleaner to clean the coarse insect screen on the exterior side.
- Check visually to see if there is damage to the fan or the shut off device and whether the shut off device closes tightly (if present).

The time between filter replacements will very much depend on the amount of dirt that accumulates from the outside air being pulled in and on the number of hours the unit is in operation each year. But the filters should be replaced at least once annually. We recommend random sampling of the filters every three months over the course of the first year to find the optimum replacement interval.

7.2 Filter changes

Units with G3 filter ③

Please follow the safety information cited previously!



- ① Modular insert
- ② Fine dust filter F7 (optional)
- ③ Coarse dust filter G3 (optional)

The G3 filter is positioned on the rear side of the modular insert in the fan's suction area.

- Open inspection flap as described above.
- Remove modular insert.
- Pull sheet metal frame containing the filter mat out of the insert.
- Pull the soiled mat out of the frame and replace it with a new one.
- Re-install in reverse order.

Units with F7 filters ②

The modular insert does not need to be removed to replace an F7 filter.

- Loosen attachment fixings.
- Pull the filter insert out into the room side and replace it.
- Re-install in reverse order.

Make sure the filter fits tightly!

7.3 Replacing components

All technical components can be easily replaced if a defect occurs.

7.3.1 Dismantling the motorised actuator (A)

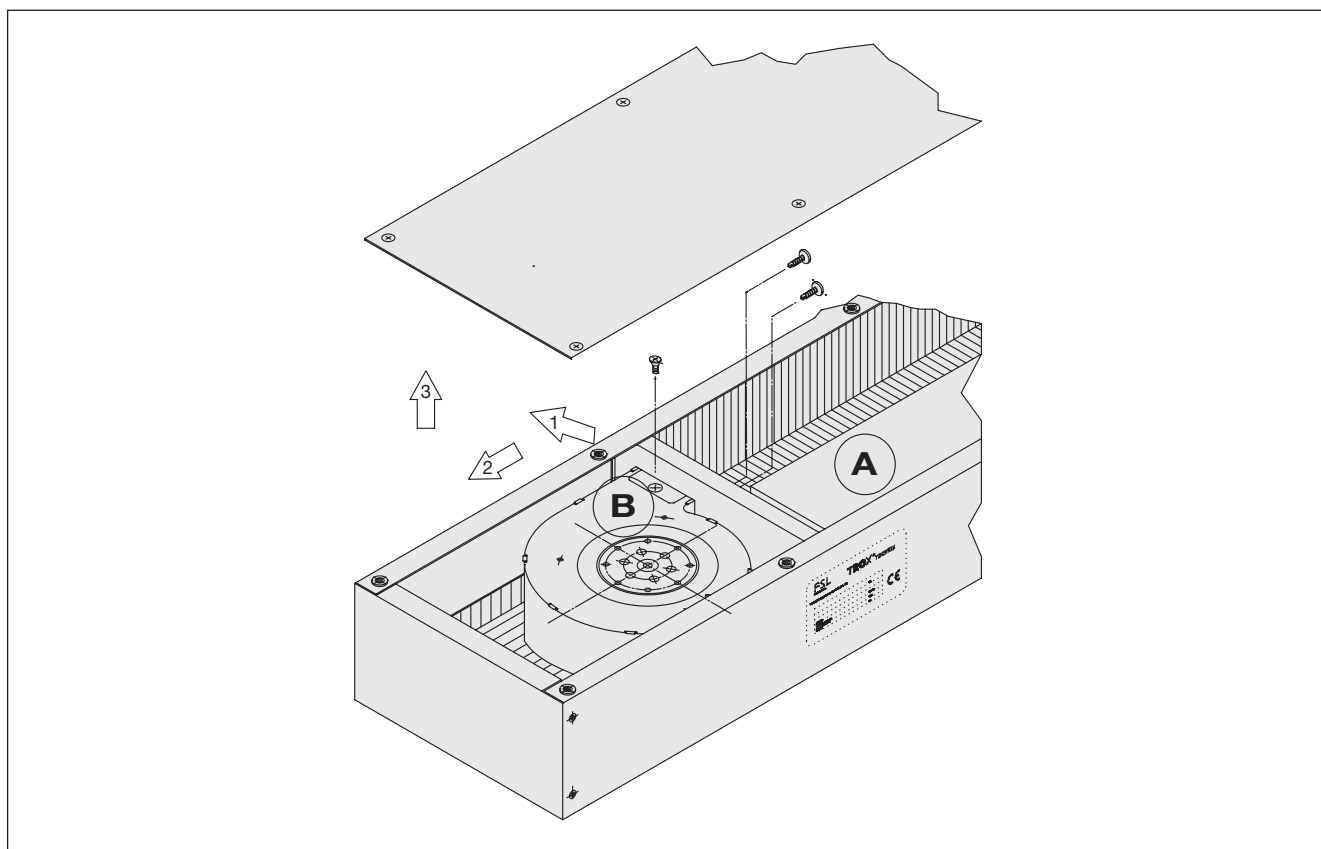
- Separate the cable connector from the plug connection directly at the motor.
- Loosen attachment screws and replace the entire actuator.
- Make sure the blade closes tightly and the cables are properly fixed!

7.3.2 Replacing the fan (B)

- Separate plug connector between the circuit board and the fan.
- Remove screw located near the fan opening and remove the fan in accordance with the drawing.
- Make sure the fit of the fan discharge is tight and solid.



The connector cable must not get caught in the impeller!



Installation is in reverse order.

If a defect occurs in the circuit board, we recommend replacement by our Service department.

8 Commissioning and maintenance protocols

The following maintenance and repair measures were done in accordance with FSL installation, maintenance and operating instructions MW/FSL/7/D/1:	Filter replacement	Inspection Modular insert	Cleaning Insect screen	Unit cleaning	Repair type	Error message type	Next scheduled maintenance	Signature of maintenance personnel
Commissioning	Yes	Yes	Yes	Yes				
	No	No	No	No				
1. Maintenance	Yes	Yes	Yes	Yes				
	No	No	No	No				
2. Maintenance	Yes	Yes	Yes	Yes				
	No	No	No	No				
3. Maintenance	Yes	Yes	Yes	Yes				
	No	No	No	No				
4. Maintenance	Yes	Yes	Yes	Yes				
	No	No	No	No				
5. Maintenance	Yes	Yes	Yes	Yes				
	No	No	No	No				
6. Maintenance	Yes	Yes	Yes	Yes				
	No	No	No	No				
7. Maintenance	Yes	Yes	Yes	Yes				
	No	No	No	No				
8. Maintenance	Yes	Yes	Yes	Yes				
	No	No	No	No				
9. Maintenance	Yes	Yes	Yes	Yes				
	No	No	No	No				
10. Maintenance	Yes	Yes	Yes	Yes				
	No	No	No	No				