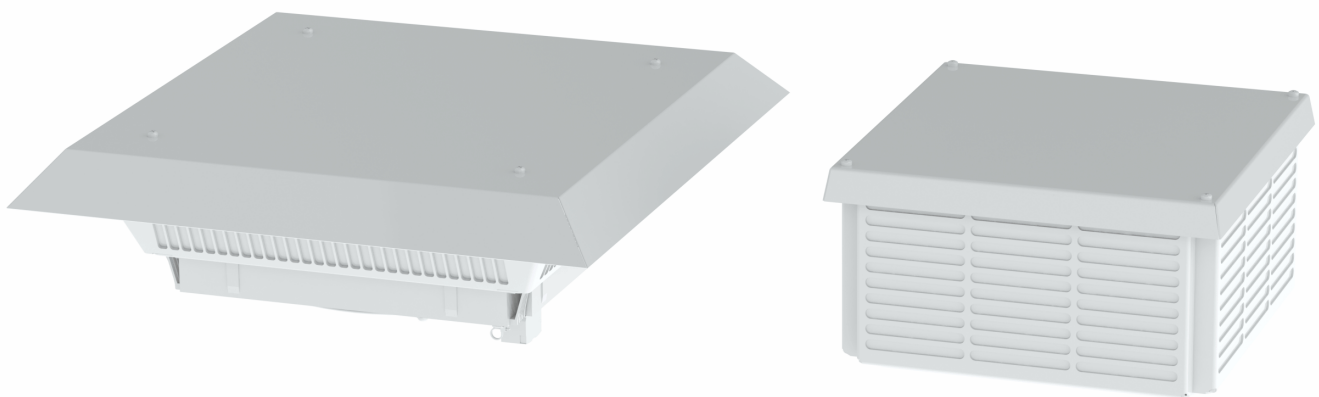


Operating Manual

Top Filterfans / Top Exhaust Filter PTF / PTFA series 230 / 115 V

Original instruction manual – Version 2.1, November 2023



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1 About this manual

1.1 Use and safekeeping

NOTE

Read the manual before starting any work on the unit/plant.

Observe the following points:

- The manual is part of the unit and must always be available on the product and accessible to the operator. The manual must be kept complete, close to the machine and accessible to the respective authorized persons.
- The unit can only be commissioned, operated and serviced properly with the help of this manual.
- This manual refers only to the product specified on the title page.
- This manual is subject to change in the course of technical progress.
- This manual is part of the scope of delivery.
- This manual is valid from transport until final disposal and must be observed.
- Always keep the manual in a legible condition.
- Leave the manual with the unit in the event of a resale.
- The unit can present unavoidable residual hazards for persons and property. Therefore, personnel must read, understand and observe the manual before beginning any work. In addition, every person who works on and with the unit in any way must be instructed and aware of the possible dangers.
- This manual is aimed only at instructed and authorized specialist personnel.
- The owner must ensure that all persons concerned have read and understood the manual before starting work.
- Illustrations in this manual serve for general understanding and can differ from the actual version.

1.2 Exclusion of liability

Pfannenberg is not liable for any errors in this documentation. Liability for indirect and direct damages that occur in connection with the delivery or use of this documentation is excluded insofar as this is legally permitted.

Pfannenberg reserves the right to change this document, including the exclusion of liability, at any time without notice and is not liable for any consequences of this change.

1.3 Target group

The different activities for handling the unit must be allocated to the target groups.

The necessary personnel qualifications are subject to different legal requirements according to the application site. The owner must ensure that the applicable laws are observed. The admissible personnel and their minimum qualification are defined below insofar as this is not regulated by law.

Observe the following points:

- Work on or with the unit/system may only be performed by suitable specialists.
- The personnel must be familiar with the pertinent standards, regulations, rules for the prevention of accidents and operating conditions.
- The personnel must be instructed and trained for the work to be performed.
- The personnel must be capable of recognizing and avoiding hazards.

Person	Activity	Qualification	Life phase
Specialized personnel (mechanics)	Mechanical work for: Commissioning, troubleshooting, maintenance and decommissioning	Training as industrial mechanics or an equivalent professional qualification	Commissioning, maintenance, troubleshooting, decommissioning, disassembly
Specialized personnel (electrician)	Electrical work	Professional training in electrical engineering or an equivalent professional qualification	Commissioning, maintenance, troubleshooting, decommissioning, disassembly
Operators and users	Operation of the system	By the owner based on the instruction of an instructed person	Commissioning, operation, maintenance, troubleshooting
Specialized personnel (disposal agent)	Proper disposal of the system	Knowledge of the disposal regulations applicable at the application site	Decommissioning, disassembly, disposal

Tab. 1: Target groups and required personnel qualification

1.4 Explanation of the notes

The warnings are indicated by signal words which express the degree of danger.
The warnings must be heeded to avoid accidents, injuries and property damages.

Explanation of the warnings in this manual:

DANGER

Brief description of the danger

The signal word **DANGER** indicates an imminent danger.
Failure to heed this warning will lead to severe injury or death.

WARNING

Brief description of the danger

The signal word **WARNING** indicates a possible danger.
Failure to heed this warning can lead to severe injury or death.

CAUTION

Brief description of the danger

The signal word **CAUTION** indicates a possible danger.
Failure to heed this warning can lead to minor to moderate injuries.

ATTENTION

Brief description

The signal word **ATTENTION** indicates possible property damages.
Failure to heed the warning can lead to damages to the unit or plant.

NOTE

The signal word **NOTE** indicates further information about the unit or its use.

1.5 Marking of contents

1.5.1 Handling instructions

Handling instructions are indicated in this manual as follows:

Requirements

Requirements and additional warnings

Required tools and materials

Tools and materials required for handling

Procedure

1. <Handling steps>
 2. ...
 - <Intermediate result / Further instructions>
 3. ...
- ⇒ <Final result>

1.5.2 Links and cross references

Links and cross references are indicated in this manual as follows:

- If this document is available in digital form, the links are interactive. A CLICK will bring you to the desired target.
 - The button combination <ALT> + <Cursor left> always returns you to the starting point.
- The table of contents is also interactive.

Cross references (example)

For further information, see section "Links and cross references", page 7.

2 Safety

2.1 Intended use

The Pfannenberg top filterfans and top exhaust filters of the PTF and PTFA series are stationary filterfans for ventilation and heat dissipation from switch cabinets and electronics housings. This is done by feeding in ambient air with a temperature below the permitted switch cabinet interior temperature.

Any other use will be considered improper use. The manufacturer will not be liable for any damages resulting from this or from improper assembly, installation or application. The user will bear the sole risk.

Proper use also includes observing all applicable documents as well as compliance with inspection and maintenance conditions.

WARNING

Risk of injury due to impermissible use of the units.

Improper use of units can lead to serious accidents.

- Only use units in stationary operation.
- Observe the permitted installation attitude of the units.
- Observe the permitted IP protection category of the units.

The top filterfans and top exhaust filters are only approved for stationary operation.

The top filterfans of IP protection category IP54 (according to DIN EN 60529) are largely dust-protected.

Limitation: Nevertheless, a tolerable amount of dust can penetrate under permanent exposure.

The top filterfans and top exhaust filters are resistant to splash water but not to a constant water jet.

The top filterfans are available in different IP protection categories and air flow rates. See the chapter "Technical data", Page 16 for exact performance data.

All Pfannenberg top filterfans and top exhaust filters are ROHS-conform and free from:

- Silicone compounds
- PCT, asbestos, formaldehyde, cadmium
- Substances that cause wetting defects

2.1.1 Permissible usage conditions

The permissible usage conditions (ambient conditions, protection category, power supply, etc.) described in chapter "Technical data", Page 16 must be observed.

2.2 Foreseeable misuse

The following points describe a foreseeable misuse of the unit:

- Use of the unit as a storage place, work platform.
- Use of the unit as a climbing aid.
- Attachment of transport aids.
- Installation in unsuitable locations.
- Operation outside of the permissible technical data. See section "Technical data".
- Operation without or with damaged sub-assemblies which serve for the safety of persons and the unit/plant.
- Blocking of the ambient air inlets and outlets by set down objects for example.
- Separation of the electrical connection during operation.

2.3 Obligations of the owner

- The owner must ensure that the units are only used as intended and all kinds of danger for the life and health of users or third parties are avoided. The accident prevention guidelines and safety regulations must also be observed.
- Unit faults must be responded to immediately.
- The owner must ensure that all users have read and understood this operating manual.

Non-compliance with this operating manual will void the warranty. The same applies if improper work has been carried out on the unit by the customer and/or third parties without the consent of the manufacturer.

2.4 Terms of warranty

ATTENTION

Loss of warranty!

Loss of warranty due to spare parts from other manufacturers.

- Only original parts are subject to quality control by the manufacturer.
- The use of spare parts from other manufacturers will lead to loss of warranty.
- Only use original manufacturer parts to ensure safe and reliable operation.

The warranty does not apply or shall expire in the following cases:

- Improper use of the unit.
- Non-compliance with the operating conditions or non-observance of the operating manual.
- Failure to perform regular maintenance of the units.
- Damage due to failure to observe the maintenance recommendations.
- Damage to units caused by dirty or blocked filters.
- Modifications made to the unit or any change in the serial number.
- Transport damage or other accidents.
- Replacement of parts by unauthorized personnel.

2.4.1 Returning units

The following must be observed to assert warranty claims and to return the unit:

- Enclose a detailed description of the defect and the SRO (RMA) number assigned by Pfannenberg.
- Enclose proof of purchase (copy of delivery note or invoice).
- Send the unit with all supplied accessories, in original box or equivalent packaging, free of transport charges and insured.

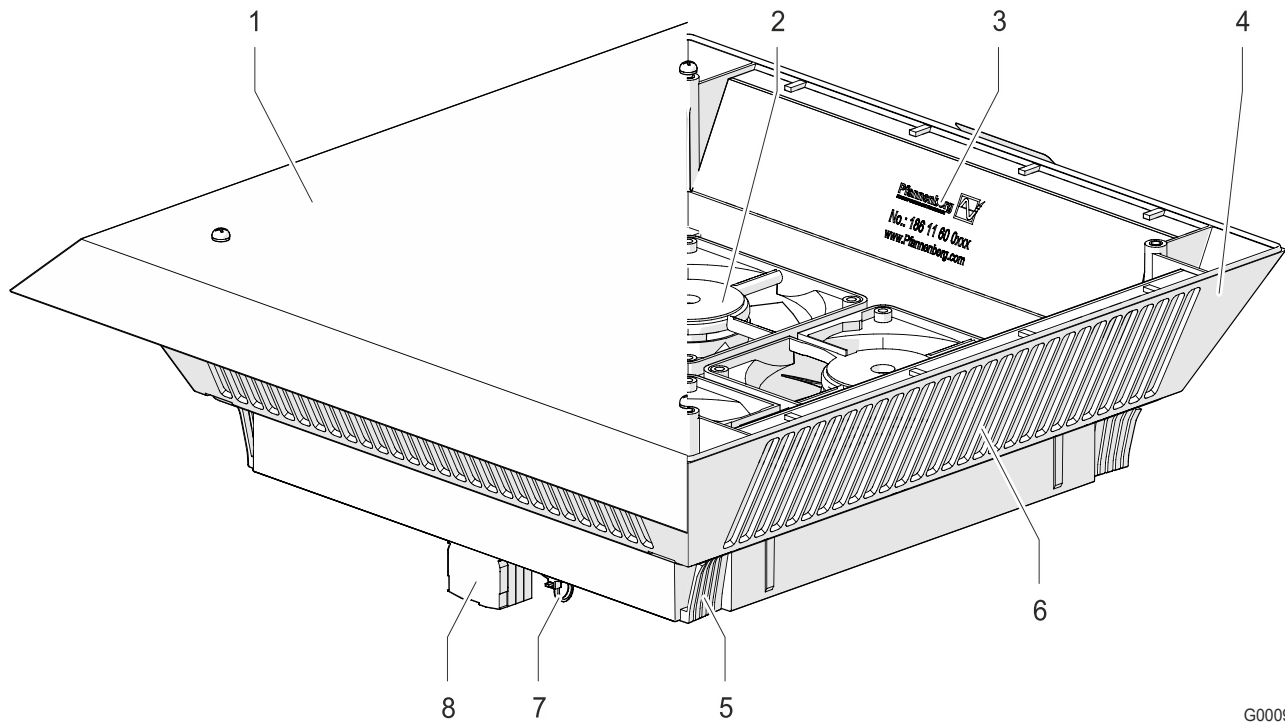
3 Unit description

3.1 Unit structure

The Pfannenberg top filterfans and top exhaust filters of the PTF and PTFA series are designed for dissipating heat from switch cabinets.

- Efficient heat transport by optimum air guidance.
- Tool-less assembly, quick fastening system (not for PTF1200).

PTF 6x.xxx / PTFA 60.000



G00099

Fig. 1: Unit structure PTF 6x.xxx / PTFA 60.000

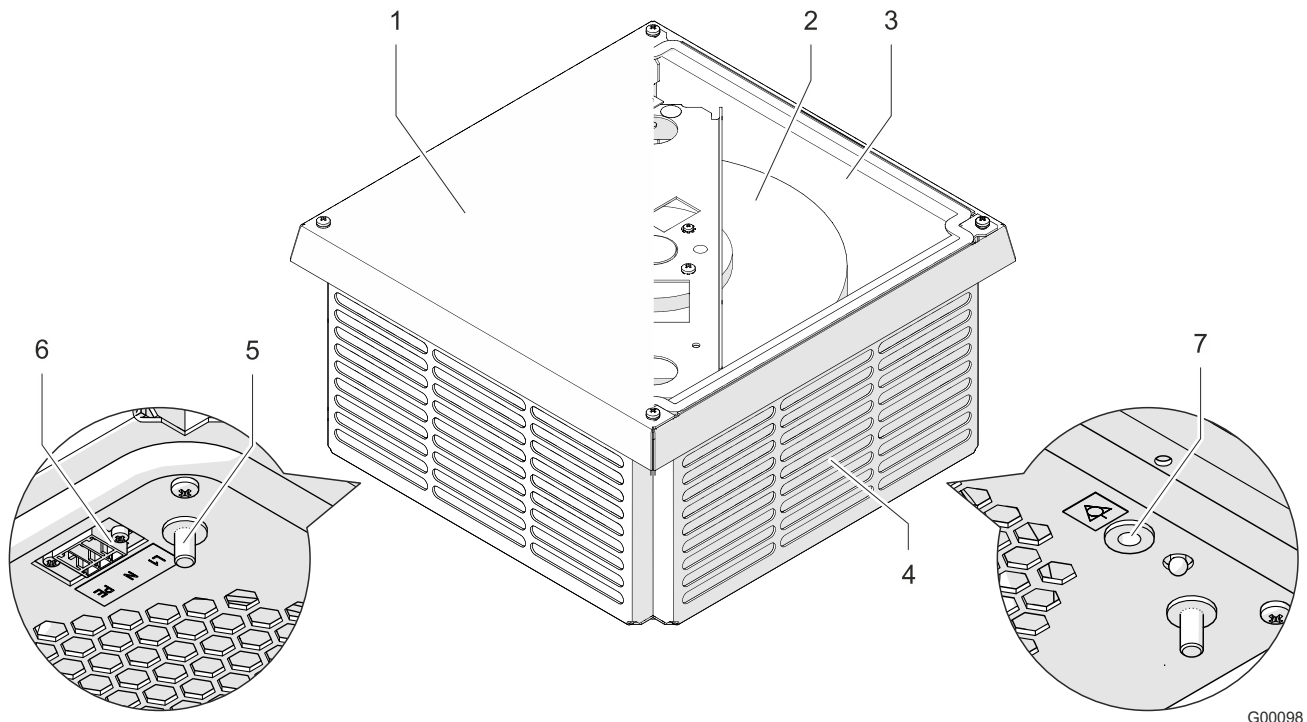
1	Unit cover	5	Quick fastening system (4x)
2	Fan motor/motor assembly (only for PTF)	6	Air outlet
3	Filter mats	7	Cable strain relief (only for PTF)
4	Housing	8	Electrical connections (only for PTF)

The top exhaust filters of the PTFA series consist of the unit cover, the plastic housing and the filter mats.

The top filterfans PTF 60.500, PTF 60.700 and PTF 61.000 have one or more top exhaust filters or several fan motors or motor assemblies as well as electrical connections in addition to the top exhaust filters.

They are assembled without tools by means of the quick fastening system.

PTF 1200



G00098

Fig. 2: Unit structure PTF 1200

1	Unit cover	5	Fastening screws (4x)
2	Fan motor/motor assembly	6	Electrical connection
3	Filter mats	7	Equipotential bonding connection
4	Housing		

The top filterfans PTF 1200 consist of the unit cover, the steel housing, the motor assembly and the filter mats. They are assembled by screwing to the switch cabinet.

3.2 Scope of delivery

The scope of delivery consists of:

- PTF top filterfan/PTFA top exhaust filter
- 4 filter mats (for IP54 and higher)
- Short manual
- Only for PTF 1200: Accessory kit with fastening material and electric connector
- Special accessories if necessary

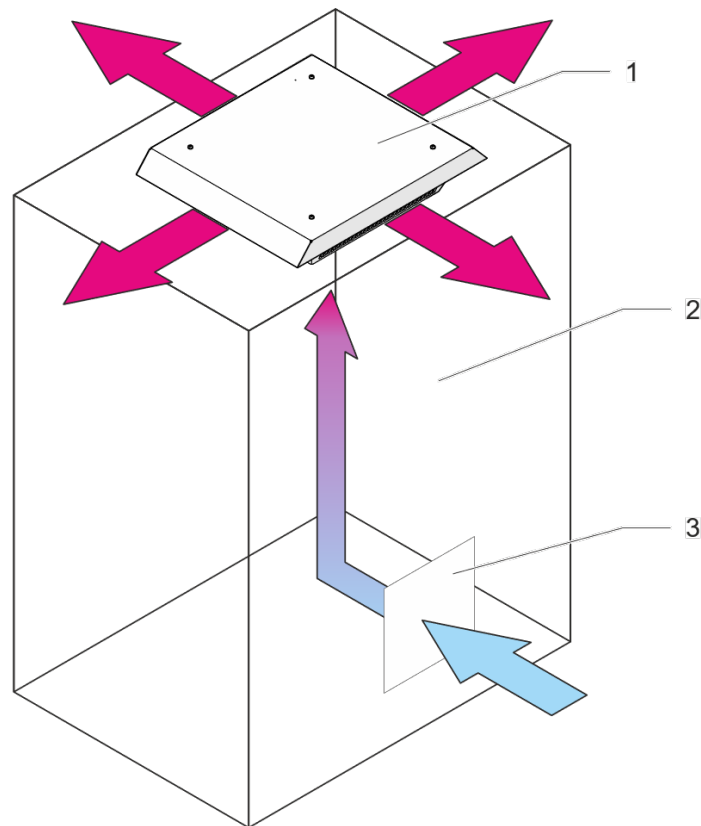
3.3 Filter mats

The top filterfan/top exhaust filter is delivered in the IP54 version with four installed class G4 filter mats. The filters must be checked regularly depending on the volume of dust and area of application and replaced if necessary.

See the chapter "Cleaning/replacing filter mats", Page 32 for how to change the filter.

3.4 Functional description

3.4.1 Top filterfan PTF



G00100

Fig. 3: Functional description of the PTF top filterfan (example)

1	PTF top filterfan	3	Air inlet (e.g. Pfannenberg PFA top exhaust filter)
2	Switch cabinet		

The PTF top filterfan serves for ventilation and heat dissipation from switch cabinets and electronic housings by sucking the hot air out of the switch cabinet.

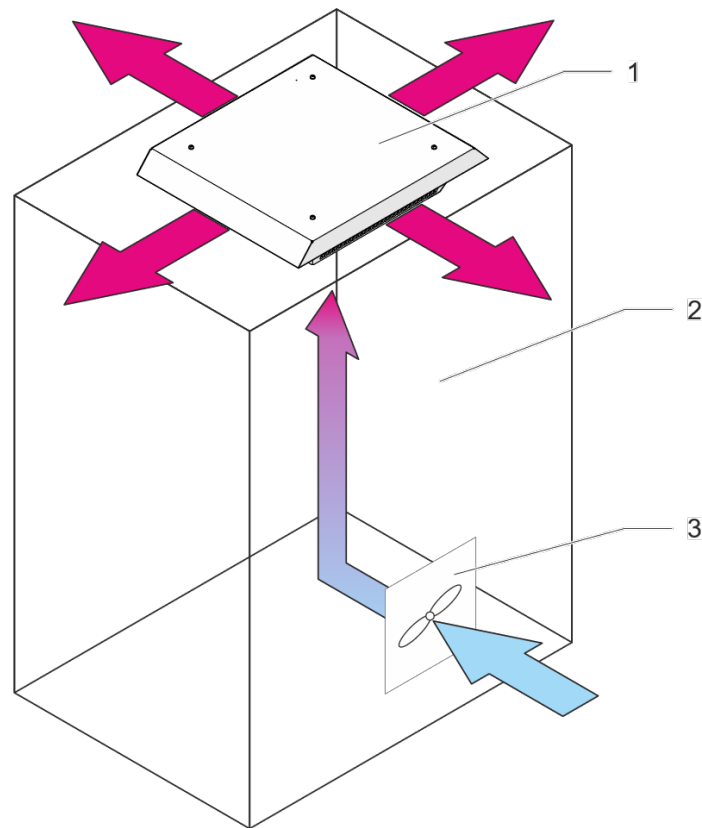
Climatization is achieved by feeding in ambient air with a temperature below the permitted switch cabinet interior temperature.

The PTF should be operated together with an opening to the air inlet which lets through sufficient air for the application and should be located in the lower third of the the switch cabinet or electronic housing to be ventilated. One or more suitable Pfannenberg outlet filters (PFA) are typically used for this.

NOTE

- The air inlet must have a sufficient air throughput rate.
- **In top filterfan PTF1200:** To ensure IP54 protection category for the entire system, several outlet filters of the PFA 60.000 IP55 series must be used. The exact number must be adapted to the system pressure loss.
- For UL:
PTF 1200 (air outlet) shall be combined with 2 filter kits model PFA 60.000 (air inlet) rated Type 12, or with Pfannenberg filter fan kits PFA or DPFA rated Type 12 having an area equal to or larger than the 2 filter kits model PFA 60.000.

3.4.2 PTFA top exhaust filter



G00110

Fig. 4: Functional description of the PTFA top exhaust filter (example)

1	PTFA top exhaust filter	3	Air inlet (e.g. Pfannenberg PF filterfan)
2	Switch cabinet		

The Pfannenberg PTFA top exhaust filter serves for ventilation and heat dissipation from switch cabinets and electronic housings.

Climatization is achieved by feeding in ambient air with a temperature below the permitted switch cabinet interior temperature.

The PTFA should be operated together with an opening to the air inlet which lets through sufficient air for the application and should be located in the lower third of the the switch cabinet or electronic housing to be ventilated. Pfannenberg filterfans (PF) for actively sucking in the air are typically used for this. The heated air is conducted out of the switch cabinet through the top exhaust filter.

3.4.3 Safety information

⚠ CAUTION

Danger of irritation to the eyes

Irritation of the eyes and muscles is possible after long exposure to the air stream.

- Avoid standing in the air stream for long periods of time.

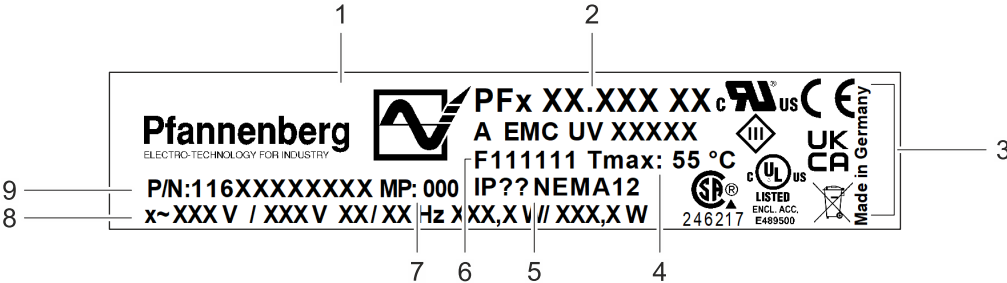
3.4.3.1 Safety devices

The fan motor is equipped with a thermal or electronic winding protection device for protection against overloading.

3.5 Type plate

NOTE

- The type plate is on the bottom of the unit.
- The figure shows the standard design adopted by EU member states. The type plate design may differ in other countries.



G00101

Fig. 5: Type plate (example)

1	Manufacturer logo	6	Production order number
2	Unit type	7	Motor protection
3	Markings/approvals (model-dependent)	8	Power supply, frequency, power consumption
4	Maximum operating temperature	9	Part number
5	Housing protection type/NEMA/UL protection classification		

3.6 Technical data

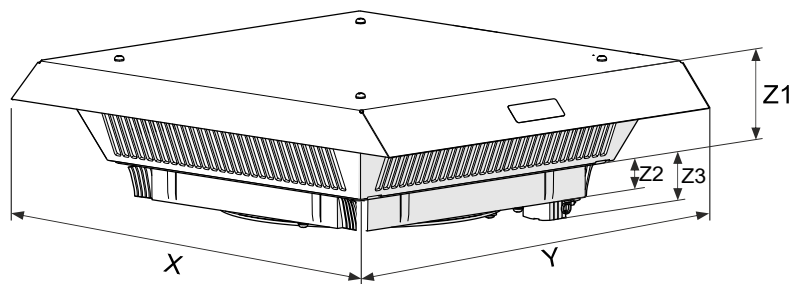
3.6.1 PTF 6x.xxx / PTFA 60.000

Designation		Unit	PTF 60.500		PTF 60.700		PTF 61.000		PTF 61.000S	
Type		—	Top filterfan							
Rated voltage (±10 %)	50/60 Hz	V	230	115	230	115	230	115	230	
Power consumption	50/60 Hz	W	4× 28/29	4× 29/24	80/100	75/100	120/160	110/160	120/160	
Current consumption	50/60 Hz	A	4×0.2	4×0.3	0.35/0.45	0.66/0.8	0.53/0.72	0.96/1.4	0.53/0.72	
Protection (external)		A	6							
Connection type		—	Terminal strip							
Air delivery volume free- blowing	IP54	m³/h	350		550		750		750	
	IP33	m³/h	500		700		1000		—	
Air delivery volume with outlet filter	IP54	m³/h	242		370		500		500	
	IP33	m³/h	268		427		582		—	
Noise level according to DIN ISO 3741		dB (A)	67		69		77		77	
Weight		kg	4.8		4.1		4.3		4.15	
Protection category		—	IP33 / IP54							IP54
Bearing type		—	Ball bearing							
Life expectancy L ₁₀ (+40 °C)		h	approx. 50,000		approx. 40,000					
Operating temperature range		°C	−15 ... +55							
		°F	+5 ... +131							
Storage temperature range		°C	-40 ... +75							
		°F	-40 ... +167							
Design			Steel sheet, powder-coated cover Snap-in injection molded thermoplastic housing (ABS-FR), self-extinguishing, UL 94 VO							
Color			RAL 7035, other colors on request							
Average filtration efficiency	IP54	%	81							
	IP33	%	0 (no filter mat)							
Quality class of the filter mat	IP54		G4							
	IP33		No filter mat							

Tab. 2: Technical data

Designation		Unit	PTFA 60.000	PTFA 60.000L
Type		—	Top exhaust filter	
Weight		kg	2.5	3.2
Protection category		—	IP33 / IP54	
Operating temperature range	°C		-40 ... +70	
	°F		-40 ... +158	
Storage temperature range	°C		-40 ... +75	
	°F		-40 ... +167	
Design			Steel sheet, powder-coated cover Snap-in injection molded thermoplastic housing (ABS-FR), self-extinguishing, UL 94 VO	
Color			RAL 7035, other colors on request	
Average filtration efficiency	IP54	%	81	
	IP33	%	0 (no filter mat)	
Quality class of the filter mat	IP54		G4	
	IP33		No filter mat	

Tab. 3: Technical data



G00102

Fig. 6: Dimensions

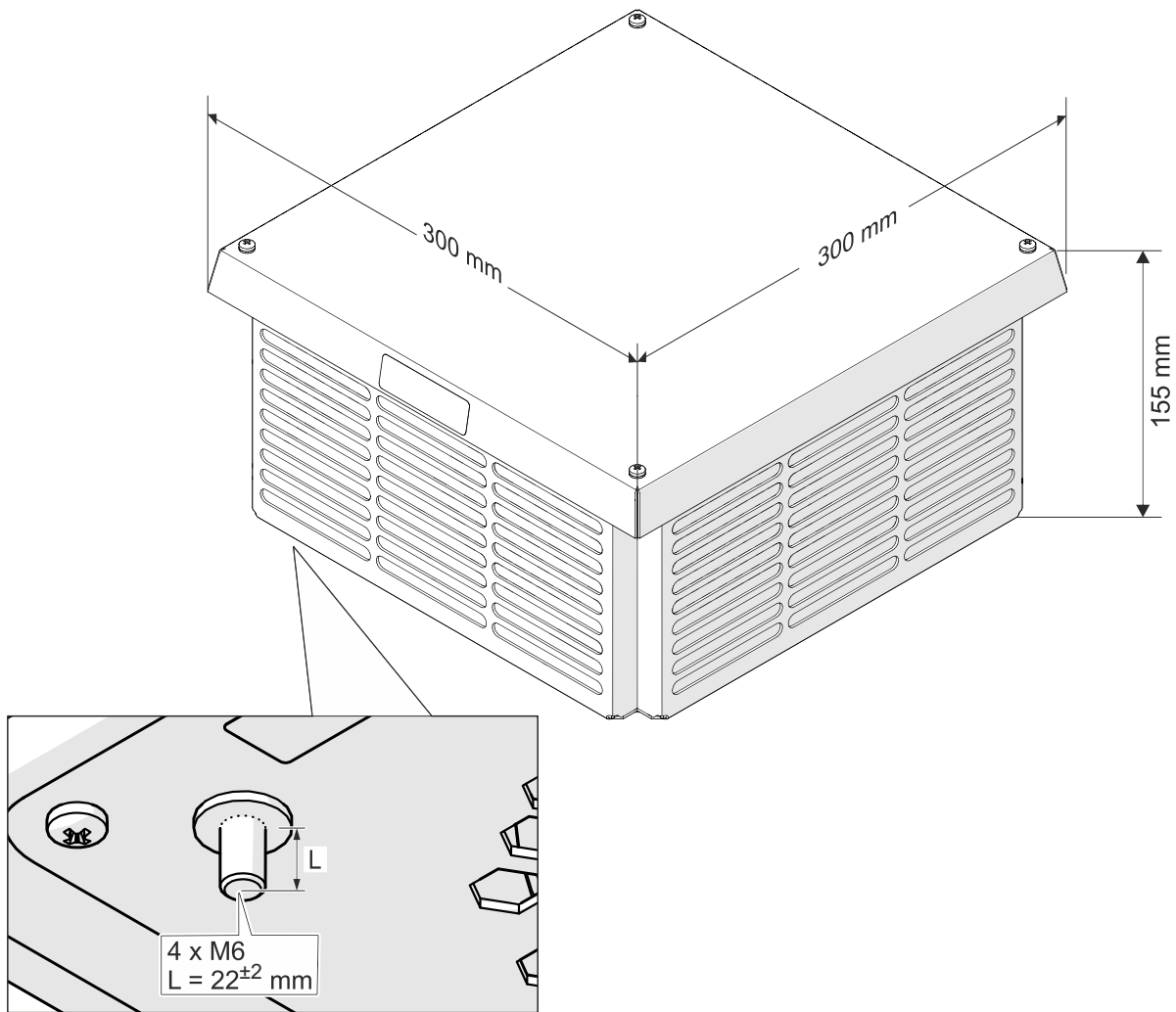
Dimensi on	Unit	PTF 60.500	PTF 60.700	PTF 61.000	PTF 61.000S	PTFA 60.000	PTFA 60.000L
X	mm	436	470	470	470	436	470
Y	mm	436	470	470	400	436	470
Z1	mm	72	95	95	95	72	95
Z2	mm	34	34	34	34	34	34
Z3	mm	57	57	57	57	—	—

Tab. 4: Dimensions

3.6.2 PTF 1200

Designation		Unit	PTF 1200	
Type		—	Top filterfan	
Rated voltage ($\pm 10\%$)	50/60 Hz	V	230	115
Power consumption	50/60 Hz	W	170	
Current consumption	50/60 Hz	A	1.40	2.20
Protection (external)		A	6	
Connection type		—	X-COM plug	
Air delivery volume free-blowing	IP54	m³/h	1000	
Air delivery volume with 2 outlet filters IP55	IP54	m³/h	870	
Noise level according to DIN ISO 13347		dB (A)	74	
Weight		kg	6.55	
Protection category		—	IP54	
Bearing type		—	Ball bearing	
Life expectancy L ₁₀ (+40 °C)		h	approx. 70,000	
Operating temperature range		°C	-25 ... +60	-25 ... +50
		°F	-13 ... +140	-13 ... +122
Storage temperature range		°C	-40 ... +80	
		°F	-40 ... +176	
Design			Powder-coated, steel sheet housing	
Assembly			Screwed onto the switch cabinet	
Color			RAL 7035, other colors on request	
Average filtration efficiency	IP54	%	81	
Quality class of the filter mat	IP54		G4	

Tab. 5: Technical data



G00108-01

Fig. 7: Dimensions

4 Assembly and initial commissioning

4.1 Safety information

DANGER

Danger of fatal injury due to electric shock!

Parts may be under voltage when the unit is opened and can cause an electric shock if touched.

Observe the following points when working on the open unit:

- Work on the electrical system may only be carried out by authorized electricians.
- Before commencing work on the electrical system, switch off the power supply, check that no voltage is applied and secure against being switched back on.
- Cordon off the working area and post a warning sign.
- The electrical connection must be made according to nationally valid regulations.

CAUTION

Danger of crushing!

Danger of crushing between the switch cabinet and the unit housing during assembly of the unit.

- Do not get parts of the body between the housing and the housing cut-out.
- Work carefully and wear cut-proof gloves.

ATTENTION

Damage to the switch cabinet equipment by metal chips

Metal chips can get into the switch cabinet when fitting the assembly cut-outs.

- Protect the switch cabinet from contamination during assembly and use protective covers.

4.2 Transport

Observe the following to avoid personal injury and property damage:

- Work may only be performed by qualified specialists.
- Observe the safety information.

Transport the unit in the original packing in operating position whenever possible. Observe the weight data in chapter "Technical data", Page 16.

NOTE

Transport of the top filterfan/top exhaust filter PTF/PTFA 6x.xxx

Use the transport lock when transporting in vertical installation attitude (see chapter "Spare parts and accessories", Page 38).

4.3 Storage

ATTENTION

Loss of warranty!

Failure to observe the storage conditions will lead to loss of warranty.

Note the following points for storage of the unit:

- Maintain the permitted storage temperature range according to chapter "Technical data", Page 16.
- Always store the unit in its operating position.

4.4 Unpacking

⚠ CAUTION

Risk of cutting and injury!

Risk of cutting and injury due to production-related, sharp sheet metal edges on the unit.

- Use personal protective equipment (cut-proof gloves).
 - Handle with care.
-

Unpacking the unit

1. Check the packing for transport damages.
2. Remove all transport and packing material.
3. Check the unit for transport damages or other damages after unpacking.
4. If no damage is found, dispose of the packing material in an environmentally friendly way.

If damages occur during transport, observe the following points:

- Notify the transport company and the manufacturer in writing.
Always state the type designation and production order number additionally.
- Keep the packing material.
- Make a note of external and internal damages.
- Document damage (e.g. by photos).
- The "General Conditions for Deliveries and Services" of the ZVEI (Central Association for the German Electrotechnical Industry) shall apply in the latest version.

NOTE

The unit should only be sent back in the original packing to avoid transport damages during return transport.

4.5 Assembly

4.5.1 General

CAUTION

Risk of cutting and injury!

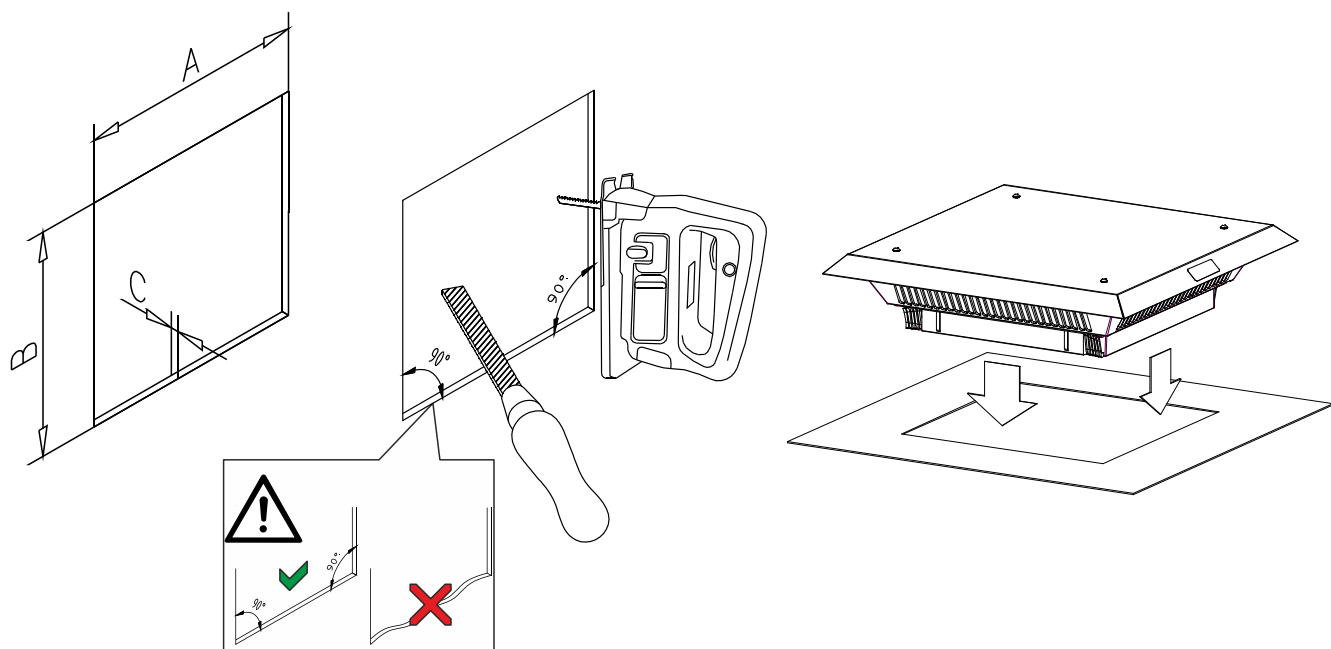
Risk of cutting and injury due to production-related, sharp sheet metal edges on the unit.

- Use personal protective equipment (cut-proof gloves).
- Handle with care.

The following general requirements must be ensured for safe and reliable operation of the top filterfan:

- Choose a switch cabinet installation site that provides for adequate ventilation of the system.
- The top filterfan must always be assembled in a horizontal installation attitude.
- Protect the assembly site against heavy contamination.
- The ambient temperature must be below the permitted switch cabinet interior temperature.
- Make sure that the seal is not damaged because otherwise the IP protection can no longer be guaranteed.
- Keep the minimum distance between parts that form light arcs and the unit: 30.5 cm (12") (UL508A sec. 22).
- Installations in the switch cabinet must not obstruct air circulation.

4.5.2 PTF / PTFA 6x.xxx



G00103

Fig. 8: Assembly cut-out/assembly

Dimension	Material thickness switch cabinet $C \geq 1.5 \dots \leq 2 \text{ mm}$	Material thickness switch cabinet $C \geq 2 \dots \leq 3 \text{ mm}$
A	291 mm, tolerance: +1 mm, -0 mm	291 mm, tolerance: +2 ... +1 mm
B	291 mm, tolerance: +1 mm, -0 mm	291 mm, tolerance: +2 ... +1 mm

Tab. 6: Dimensions of assembly cut-out

Prerequisites

⚠ DANGER – Danger to life due to electric shock. Make sure that the unit is voltage-free.

- All general requirements are met, see "General", Page 22.

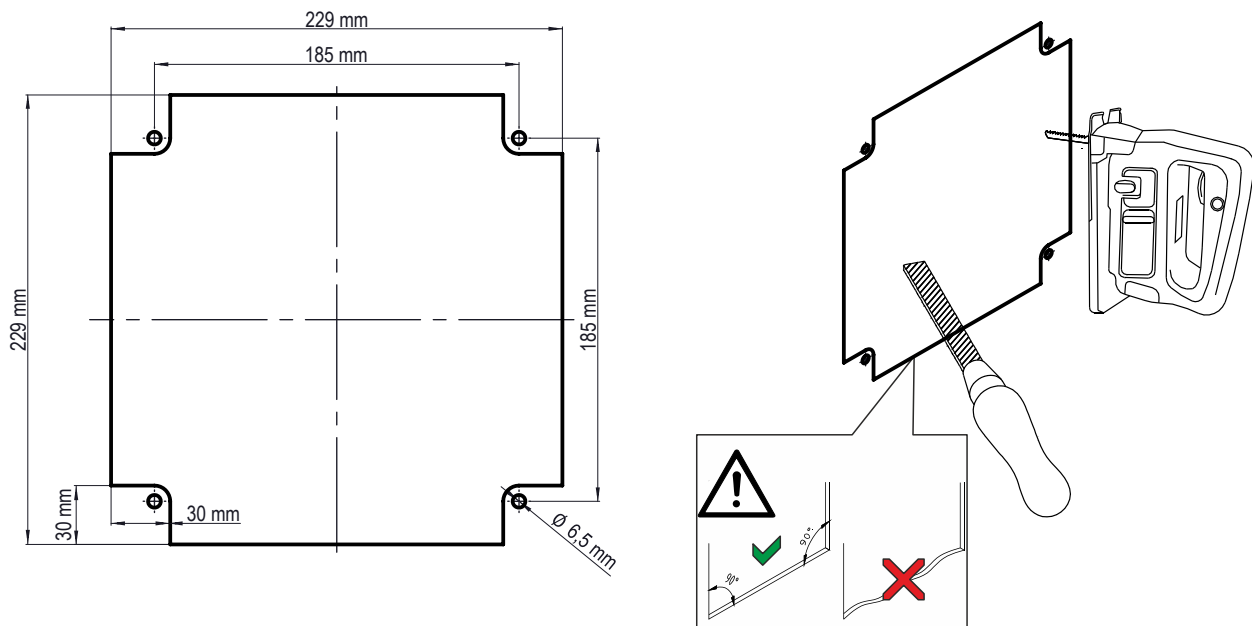
Required tools and materials

- Saw
- Switch cabinet mill if necessary
- Protective covers

Procedure

1. Ensure that the switch cabinet has a protective cover to protect against chips.
 2. Prepare the cut-out according to Fig. 8 and Tab. 6.
 - To ensure IP protection category IP54, the cutting edges must be straight and the maximum bending of the switch cabinet must be 1 mm.
 3. Remove burr from cutting edges.
 4. Remove chips and assembly waste from the switch cabinet.
 5. Snap the top filterfan/outlet fan into the cut-out.
- ⇒ The unit is now assembled and can be connected electrically.

4.5.3 PTF 1200



G00103

Fig. 9: Assembly cut-out/assembly

NOTE

The general tolerances in accordance with ISO 2768-1, tolerance class "m" apply.

Prerequisites

⚠ DANGER – Danger to life due to electric shock. Make sure that the unit is voltage-free.

- All general requirements are met, see "General", Page 22.

Required tools and materials

- Saw
- Switch cabinet mill if necessary
- Drill 6.5 mm
- Protective covers

Procedure

1. Ensure that the switch cabinet has a protective cover to protect against chips.
 2. Prepare the cut-out according to Fig. 9.
 - To ensure IP protection category IP54, the cutting edges must be straight and the maximum bending of the switch cabinet must be 1 mm.
 3. Remove burr from cutting edges.
 4. Remove chips and assembly waste from the switch cabinet.
 5. Place the top filterfan onto the cut-out and screw it to the switch cabinet.
- ⇒ The unit is now assembled and can be connected electrically.

4.6 Electrical connection

DANGER

Danger of fatal injury due to electric shock!

Parts may be under voltage when the unit is opened and can cause an electric shock if touched.

Observe the following points when working on the open unit:

- Work on the electrical system may only be carried out by authorized electricians.
- Before commencing work on the electrical system, switch off the power supply, check that no voltage is applied and secure against being switched back on.
- Cordon off the working area and post a warning sign.
- The electrical connection must be made according to nationally valid regulations.

ATTENTION

Wrong connection voltage!

Wrong connection voltages can damage component parts.

- Compare the connection voltage with the unit type plate. Necessary protection according to section "Technical data", Page 16.

4.6.1 Notes for connecting cables to the unit

Note the following points when connecting the cables to the unit:

- All cables must be supported by a suitable strain relief.
- Maximum cable cross-section 2.5 mm² (AWG 14) or for PTF1200: 4 mm² (AWG 12).
- Stripped length of the cable wires: 8 ... 9 mm.
- Observe the connection assignment according to the circuit diagram.

4.6.2 Mains connection

DANGER

Danger of fatal injury due to electric shock!

Unconnected or incorrectly installed protective conductor systems can generate hazardous voltages and cause electrical shocks resulting in serious accidents.

- Work may only be carried out by qualified specialists.
- Implement protective conductor systems in accordance with DIN EN 60204-1, Section 8.2.
- Every single part of the electrical equipment must be connected to the protective conductor system.
- If parts are removed, e.g. during maintenance work, make sure that the protective conductor system is not interrupted for the remaining parts.

DANGER

Risk of injury and fire due to electric arcs!

Electric arcs, dangerous voltages and electric shocks may occur when disconnecting and plugging in the connectors of the mains connection under load or voltage.

- Never plug or unplug mains connectors under voltage.
- Switch off the power supply and secure against switching back on before working on the mains connection.
- Work on the connectors must only be carried out under sufficient lighting.

WARNING

Risk of fire!

Risk of fire due to too small cable cross-sections. A too small cable cross-section will result in overheating of the cable.

- Lay cable cross-sections according to the current consumption of the unit and the length of the cable.
- Fuse the power cable with the preliminary fuse specified in the technical data.
- The roof fan must be connected to the mains by an all-pole disconnecting device in accordance with overvoltage category III (IEC 61058-1).
- The unit does not have its own overvoltage protection. Effective lightning and overvoltage protection measures must be taken by the switch cabinet maker or owner.
- The units are classified in overvoltage category III. The mains voltage must not exceed the tolerance of $\pm 10\%$.

4.6.2.1 Mains connection PTF 6x.xxx

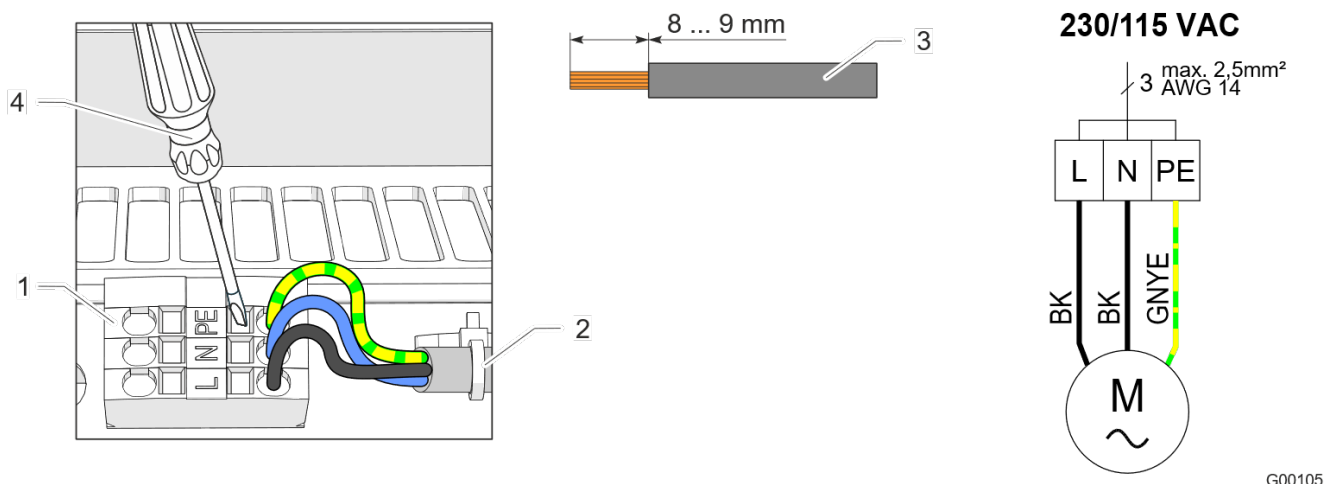


Fig. 10: Mains connection PTF 6x.xxx

1	Mains terminal strip	3	Cable 1.5 to 2.5 mm ² , stripping length 8 to 9 mm
2	Strain relief (cable tie)	4	Screwdriver (flat, max. 3.5 mm)

NOTE

Protective conductors in the mains connection cable are not regarded as potential equalization conductors.

Prerequisite

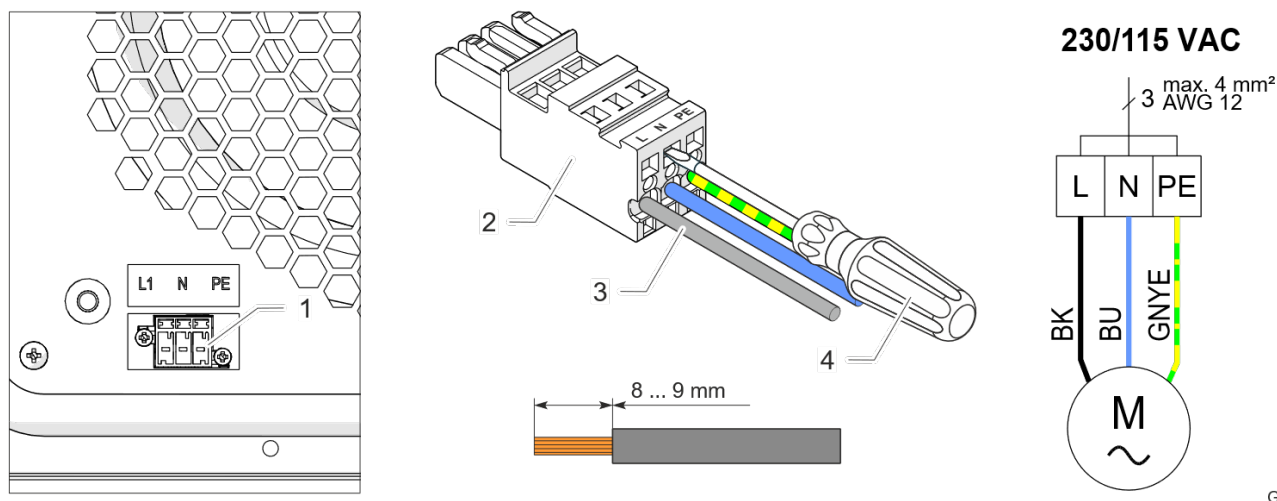
⚠ DANGER – Danger to life due to electric shock. Make sure that the unit is voltage-free.

- All general requirements for safe and reliable operation are fulfilled.

Procedure

1. Connect to mains as shown in the circuit diagram (terminal designation).
 2. Open the cage clamp terminal of the mains terminal strip with the flat screwdriver and connect the cables on the mains terminal strip.
ATTENTION – Damage to the cage clamp terminal.
 Firmly insert the screwdriver into the cage clamp terminal. Never turn it, otherwise the cage clamp terminal will be damaged.
 2. Secure the power cable to the strain relief with a cable tie.
 3. Before switching on, make sure that the mains voltage matches the data on the type plate.
- ⇒ Electrical connection of the top filterfan is completed.

4.6.2.2 Mains connection PTF 1200



G00104

Fig. 11: Mains plug PTF1200

1	Mains plug	3	Cable 1.5 to 4 mm ² , stripping length 8 to 9 mm
2	Mating plug	4	Screwdriver (flat, max. 3.5 mm)

NOTE

Protective conductors in the mains connection cable are not regarded as potential equalization conductors.

Prerequisite

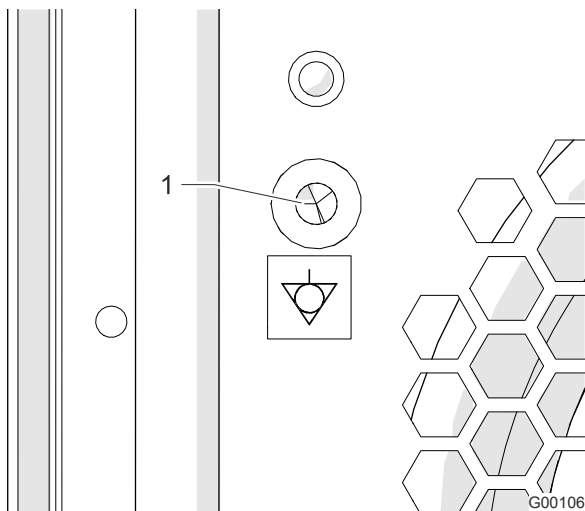
⚠ DANGER – Danger to life due to electric shock. Make sure that the unit is voltage-free.

- All general requirements for safe and reliable operation are fulfilled.

Procedure

1. Connect to mains as shown in the circuit diagram (terminal designation).
 2. Open the cage clamp terminal of the mating plug with the flat screwdriver and connect the cables on the mating plug.
ATTENTION – Damage to the cage clamp terminal.
 Firmly insert the screwdriver into the cage clamp terminal. Never turn it, otherwise the cage clamp terminal will be damaged.
 3. Plug the mating plug into the mains plug.
 4. Before switching on, make sure that the mains voltage matches the data on the type plate.
- ⇒ Electrical connection of the top filterfan is completed.

4.6.3 Equipotential bonding connectors (only in PTF 1200)



- 1 Functional equipotential bonding  (M6-thread), for a signal reception with low interference between the unit and the switch cabinet.

Fig. 12: Equipotential bonding PTF 1200

NOTE

Potential equalization provided by customer

If the device is to be integrated into the customer's existing potential equalization for EMC reasons, a conductor can be connected at the connecting point of the function potential equalization.

The connecting point is labeled with the necessary circuit symbol.

5 Service and maintenance

5.1 Safety information

DANGER

Danger of fatal injury due to electric shock!

Parts may be under voltage when the unit is opened and can cause an electric shock if touched.

Observe the following points when working on the open unit:

- Work on the electrical system may only be carried out by authorized electricians.
- Before commencing work on the electrical system, switch off the power supply, check that no voltage is applied and secure against being switched back on.
- Cordon off the working area and post a warning sign.
- The electrical connection must be made according to nationally valid regulations.

WARNING

Danger due to faulty maintenance/repair!

A higher risk of injury exists for persons who carry out work for which they are neither qualified nor have been instructed.

- The unit may only be maintained/repared by persons who are familiar with the procedure and aware of the risks as well as having the necessary qualifications.
- Always switch off the disconnecter/contacter prior to starting maintenance work.
- Wait for the end of the 10-minute discharge phase of the electrical components. The unit should only be opened afterwards.
- Ensure that the fans are in the idle position and do not rotate.
- Check the unit for proper and safe operation after replacing defective parts or components.

CAUTION

Risk of cutting and injury!

Risk of cutting and injury due to production-related, sharp sheet metal edges on the unit.

- Use personal protective equipment (cut-proof gloves).
- Handle with care.

ATTENTION

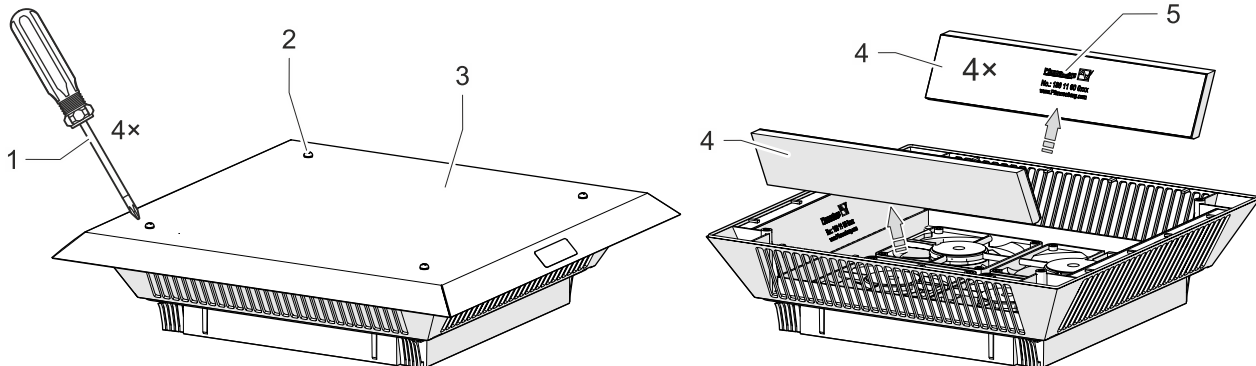
Damage to the unit!

Damage to the unit due to spare parts from other manufacturers.

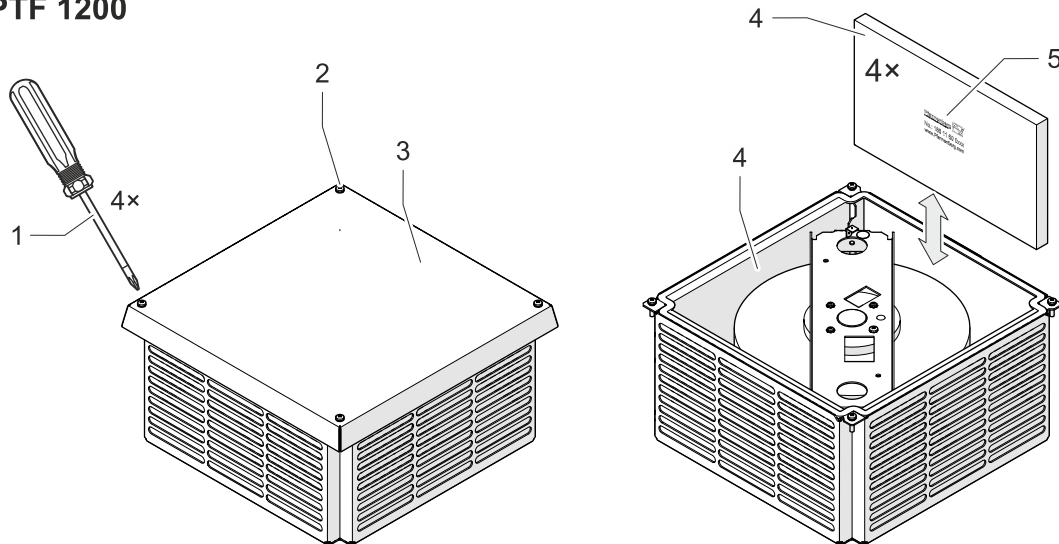
- Only original parts are subject to quality control by the manufacturer.
- Only use original manufacturer parts to ensure safe and reliable operation.

5.2 Cleaning/replacing filter mats

PTF 6x.xxx
PTFA 6x.xxx



PTF 1200



G00107

Fig. 13: Cleaning/replacing filter mats

1	Phillips screwdriver	4	Filter mats (4x)
2	Lid screws (4x)	5	Labeling of the filter mat
3	Lid		

ATTENTION**Damage to components**

Damage to the filter mats due to improper cleaning.

- Avoid high-pressure water jets.
- Do not wring out filter mats.
- Replace oily or greasy filter mats immediately.

NOTE

The time intervals for cleaning or replacing the filter mats depend strongly on the contamination of the ambient air.

Prerequisites

- Unit is switched off.

⚠ DANGER – Danger to life due to electric shock. Make sure that the unit is voltage-free.

Required tools and materials

- Brush
- Water below 40 °C
- Fine detergent
- Vacuum cleaner or compressed air cleaner

Procedure

1. Switch unit voltage-free.
 2. Remove the lid.
 - Make sure that the ground cable does not come loose from the lid or is damaged.
 3. Remove the filter mat and clean it or, if it can no longer be cleaned, replace it.
 - Wash out the filter mat with water up to 40 °C and commercially available fine detergent.
 - Knock off, suck off or blow off dry contamination from the filter mat.
 4. Insert the cleaned filter mat.
 - Make sure it is installed in the correct position. The labeling on the filter mat must face inwards.
 5. Mount the lid and screw it tight.
 - Make sure that the ground cable is connected correctly and not trapped.
 6. Check that the unit works properly and safely after cleaning.
- ⇒ Changing the filter mats is completed.

6 Rectification of operating faults

6.1 General

Fault	Possible causes	Remedial measures
Fan not running	No power supply.	Check power supply.
Unit does not sufficiently dissipate the heat.	Application limits exceeded.	Check ambient air temperature and internal load.
	Dirty filter	Clean filter, replace if necessary.
	Fan defective.	Call authorized specialist personnel; change fan.
	Air circulation in switch cabinet disrupted.	Check installations and circulation channels in the switch cabinet. Check air inflow and outflow on the inlet and outlet side.

Tab. 7: General operating faults

7 Decommissioning

DANGER

Danger of fatal injury due to electric shock!

Parts may be under voltage when the unit is opened and can cause an electric shock if touched.

Observe the following points when working on the open unit:

- Work on the electrical system may only be carried out by authorized electricians.
- Before commencing work on the electrical system, switch off the power supply, check that no voltage is applied and secure against being switched back on.
- Cordon off the working area and post a warning sign.
- The electrical connection must be made according to nationally valid regulations.

CAUTION

Danger of crushing when decommissioning the unit

Hands and other body parts may be crushed when removing units.

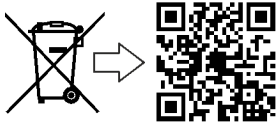
See the instructions in the chapter "Dismantling and disposal", Page 36 if the units are finally being taken out of operation or disposed of!

NOTE

Old units are also professionally disposed of by Pfannenberg. Delivery to one of our manufacturing facilities shall be free of charge.

8 Dismantling and disposal

The unit must be dismantled and disposed of in an environmentally friendly way at the end of its useful life.



Units marked by the symbol opposite may not be disposed of with unsorted domestic waste. They must be taken to a separate electrical and electronic waste collection depot. For further information about disposal, scan the QR code or call www.pfannenberg.com/disposal.

8.1 Safety information

All work may only be performed by persons with certified qualifications under consideration of:

- the minimum qualification
- this manual
- the valid local regulations and laws
- company-internal work, operation and safety regulations

Use the necessary personal protective equipment for the respective activity for all work.

⚠ DANGER

Danger of fatal injury due to electric shock!

Parts may be under voltage when the unit is opened and can cause an electric shock if touched.

Observe the following points when working on the open unit:

- Work on the electrical system may only be carried out by authorized electricians.
- Before commencing work on the electrical system, switch off the power supply, check that no voltage is applied and secure against being switched back on.
- Cordon off the working area and post a warning sign.
- The electrical connection must be made according to nationally valid regulations.

⚠ CAUTION

Risk of cutting and injury!

Risk of cutting and injury due to production-related, sharp sheet metal edges on the unit.

- Use personal protective equipment (cut-proof gloves).
- Handle with care.

NOTE

Dismantling and disposal are to be carried out by the owner or persons authorized by him.

Contact the local authorities or special disposal companies for information on issues of environmentally friendly disposal.

8.2 Dismantling

Prerequisites

⚠ DANGER – Danger to life due to electric shock. Make sure that the unit is voltage-free.

Procedure

1. Switch off the unit, secure against switching back on and wait until all parts have a temperature below 40 °C.
2. Physically disconnect the energy supply from the unit and discharge stored residual energies.
3. Clean dirt and contamination from the unit.
4. Remove operating and auxiliary materials and dispose of them in an environmentally friendly way.
5. Dismantle the unit into the different separable materials.
 - Observe the valid work safety and environmental protection regulations.

8.3 Disposal

NOTE

Old units are also professionally disposed of by Pfannenberger. Delivery to one of our manufacturing facilities shall be free of charge.

Dismantled components should be recycled unless return or disposal agreements have been made:

- Scrap metals
- Hand over plastic elements for recycling
- Dispose of other parts sorted according to their material properties

The parts of the unit consist basically of the following materials:

- plastic
- non-ferrous metals
- stainless steel
- steel and aluminum parts
- electronic sub-assemblies

9 Spare parts and accessories

NOTE

Always state the Pfannenberg part number when ordering spare parts and accessories.

No.	Designation
18611600193	Filter mat (20 pieces) PTF 1200
18611600143	Filter mat (20 pieces) PTF 61.000(S), PTF 60.700, PTFA 60.000L
18611600124	Filter mat (20 pieces) PTF 60.500, PTFA 60.000
17121000000	Switch cabinet thermostat (accessories)
18611100001	Fan PTF 1200 230 V, 1~
18611100002	Fan PTF 1200 115 V, 1~
18611000045	Fan PTF 61.000 230 V, 1~, PTF 61.000S 230 V, 1~
18611000048	Fan PTF 61,000 115 V, 1~
18611000044	Fan PTF 60,700 230 V, 1~
18611000047	Fan PTF 60,700 115 V, 1~
18611000052	Fan PTF 60,500 230 V, 1~
18611000053	Fan PTF 60,500 115 V, 1~
18110000003	Transport lock PTF / PTFA 6x.xxx

Tab. 8: Spare parts and accessories list

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Exclusion of liability:

All the contained information has been carefully checked.

However, we shall assume no liability with regard to the completeness and accuracy of the information.

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