



OPERATING INSTRUCTIONS

EN

Translation of the Original

TPS 110 - 400 | TPS 111 - 401

Power supply pack

PFEIFFER  **VACUUM**

Dear Customer,

Thank you for choosing a Pfeiffer Vacuum product. Your new power supply pack is designed to support you in your individual application with full performance and without malfunctions. The name Pfeiffer Vacuum stands for high-quality vacuum technology, a comprehensive and complete range of top-quality products and first-class service. From this extensive, practical experience we have gained a large volume of information that can contribute to efficient deployment and to your personal safety.

In the knowledge that our product must avoid consuming work output, we trust that our product can offer you a solution that supports you in the effective and trouble-free implementation of your individual application.

Please read these operating instructions before putting your product into operation for the first time. If you have any questions or suggestions, please feel free to contact info@pfeiffer-vacuum.de.

Further operating instructions from Pfeiffer Vacuum can be found in the [Download Center](#) on our website.

Disclaimer of liability

These operating instructions describe all models and variants of your product. Note that your product may not be equipped with all features described in this document. Pfeiffer Vacuum constantly adapts its products to the latest state of the art without prior notice. Please take into account that online operating instructions can deviate from the printed operating instructions supplied with your product.

Furthermore, Pfeiffer Vacuum assumes no responsibility or liability for damage resulting from the use of the product that contradicts its proper use or is explicitly defined as foreseeable misuse.

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We reserve the right to make changes to the technical data and information in this document.

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1 About this manual



IMPORTANT

Read carefully before use.
Keep the manual for future consultation.

1.1 Validity

This operating instructions is a customer document of Pfeiffer Vacuum. The operating instructions describe the functions of the named product and provide the most important information for the safe use of the device. The description is written in accordance with the valid directives. The information in this operating instructions refers to the product's current development status. The document shall remain valid provided that the customer does not make any changes to the product.

1.1.1 Applicable documents

Designation	Number
Declaration of conformity	A component of these instructions

1.1.2 Variants

This instruction applies for power supply packs with the following type designation:

- TPS 110
- TPS 111
- TPS 180
- TPS 181
- TPS 310
- TPS 311
- TPS 400
- TPS 401

1.2 Target group

These operating instructions are aimed at all persons performing the following activities on the product:

- Transportation
- Setup (Installation)
- Usage and operation
- Decommissioning
- Maintenance and cleaning
- Storage or disposal

The work described in this document is only permitted to be performed by persons with the appropriate technical qualifications (expert personnel) or who have received the relevant training from Pfeiffer Vacuum.

1.3 Conventions

1.3.1 Instructions in the text

Usage instructions in the document follow a general structure that is complete in itself. The required action is indicated by an individual step or multi-part action steps.

Individual action step

A horizontal, solid triangle indicates the only step in an action.

- ▶ This is an individual action step.

Sequence of multi-part action steps

The numerical list indicates an action with multiple necessary steps.

1. Step 1
2. Step 2
3. ...

1.3.2 Pictographs

Pictographs used in the document indicate useful information.



Note



Tip

1.3.3 Stickers on the product

This section describes all the stickers on the product along with their meaning.

	<p>Rating plate (example) Rating plates of the devices are affixed to the housing where they can be clearly seen</p>
	<p>Test seal: The test seal provides information regarding additional certifications</p>
	<p>Warning hot surface This sticker warns of injuries caused by high temperatures in case of touching without protection during operation.</p>

Tbl. 1: Stickers on the product

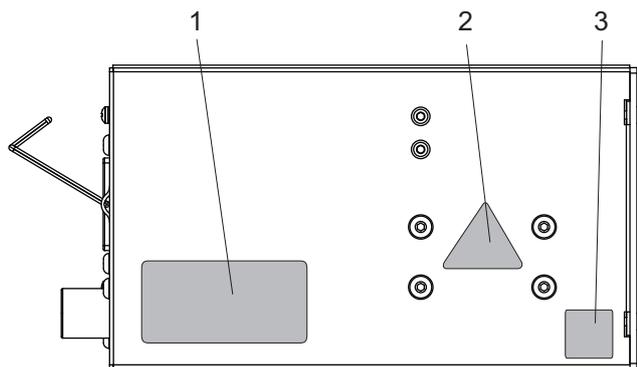


Fig. 1: Position of the stickers on the product

- | | |
|----------------------------|---------------------|
| 1 Rating plate TPS | 3 CAN/USA test seal |
| 2 Hot surface warning sign | |

1.3.4 Abbreviations

Abbreviation	Meaning in this document
AC	AC Voltage
DC	Direct voltage, operating voltage
LED	Light emitting diode

Abbreviation	Meaning in this document
PE	Earthed conductor (protective earth)
S1	Switch on power supply pack
TC	Turbopump electronic drive unit (turbo controller)
TPS	Power supply pack, voltage supply (turbo power supply)

Tbl. 2: Abbreviations used in this document

2 Safety

2.1 General safety information

The following 4 risk levels and 1 information level are taken into account in this document.

⚠ DANGER
<p>Immediately pending danger</p> <p>Indicates an immediately pending danger that will result in death or serious injury if not observed.</p> <ul style="list-style-type: none"> ▶ Instructions to avoid the danger situation

⚠ WARNING
<p>Potential pending danger</p> <p>Indicates a pending danger that could result in death or serious injury if not observed.</p> <ul style="list-style-type: none"> ▶ Instructions to avoid the danger situation

⚠ CAUTION
<p>Potential pending danger</p> <p>Indicates a pending danger that could result in minor injuries if not observed.</p> <ul style="list-style-type: none"> ▶ Instructions to avoid the danger situation

NOTICE
<p>Danger of damage to property</p> <p>Is used to highlight actions that are not associated with personal injury.</p> <ul style="list-style-type: none"> ▶ Instructions to avoid damage to property

i	<p>Notes, tips or examples indicate important information about the product or about this document.</p>
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2.2 Safety instructions

All safety instructions in this document are based on the results of the risk assessment carried out in accordance with Low Voltage Directive 2014/35/EU. Where applicable, all life cycle phases of the product were taken into account.

Risks during installation

⚠ DANGER
<p>Danger to life from electric shock</p> <p>Contact with exposed and live elements generate an electric shock. Incorrect connection of the mains supply leads to the risk of live housing parts that can be touched. There is a risk to life.</p> <ul style="list-style-type: none"> ▶ Before the installation, check that the connection leads are voltage-free. ▶ Make sure that electrical installations are only carried out by qualified electricians. ▶ Provide adequate grounding for the device. ▶ After connection work, do a PE conductor check.

⚠ DANGER**Danger to life from electric shock**

Power supply packs that are not specified or are not approved will lead to severe injury to death.

- ▶ Make sure that the power supply pack meets the requirements for double isolation between mains input voltage and output voltage, in accordance with IEC 61010-1 IEC 60950-1 and IEC 62368-1.
- ▶ Make sure that the power supply pack meets the requirements in accordance with IEC 61010-1 IEC 60950-1 and IEC 62368-1.
- ▶ Where possible, use original power supply packs or only power supply packs that correspond with the applicable safety regulations.

⚠ WARNING**Risk of danger to life through missing mains disconnection device**

The vacuum pump and electronic drive unit are **not** equipped with a mains disconnection device (mains switch).

- ▶ Install a mains disconnection device according to SEMI-S2.
- ▶ Install a circuit breaker with an interruption rating of at least 10,000 A.

⚠ WARNING**Risk of fatal injury due to electric shock on account of incorrect installation**

The device's power supply uses life-threatening voltages. Unsafe or improper installation can lead to life-threatening situations from electric shocks obtained from working with or on the unit.

- ▶ Ensure safe integration into an emergency off safety circuit.
- ▶ Do not carry out your own conversions or modifications on the unit.

Risks during operation**⚠ WARNING****Danger to life from electric shock in the event of a fault**

In the event of a fault, devices connected to the mains may be live. There is a danger to life from electric shock when making contact with live components.

- ▶ Always keep the mains connection freely accessible so you can disconnect it at any time.

Risks during maintenance**⚠ WARNING****Danger to life from electric shock during maintenance and service work**

The device is only completely de-energized when the mains plug has been disconnected and the vacuum pump is at a standstill. There is a danger to life from electric shock when making contact with live components.

- ▶ Before performing all work, switch off the main switch.
- ▶ Wait until the vacuum pump comes to a standstill (rotation speed =0).
- ▶ Disconnect all connection cables.
- ▶ Remove the mains plug from the device.
- ▶ Secure the device against unintentional restarting.

Risks during troubleshooting**⚠ WARNING****Danger to life from electric shock in the event of a fault**

In the event of a fault, devices connected to the mains may be live. There is a danger to life from electric shock when making contact with live components.

- ▶ Always keep the mains connection freely accessible so you can disconnect it at any time.

2.3 Safety precautions



Duty to provide information on potential dangers

The product holder or user is obliged to make all operating personnel aware of dangers posed by this product.

Every person who is involved in the installation, operation or maintenance of the product must read, understand and adhere to the safety-related parts of this document.



Infringement of conformity due to modifications to the product

The Declaration of Conformity from the manufacturer is no longer valid if the operator changes the original product or installs additional equipment.

- Following the installation into a system, the operator is required to check and re-evaluate the conformity of the overall system in the context of the relevant European Directives, before commissioning that system.

General safety precautions when handling the product

- ▶ Use only power supply packs that comply with the applicable safety regulations.
- ▶ Observe all applicable safety and accident prevention regulations.
- ▶ Check that all safety measures are observed at regular intervals.
- ▶ Recommendation: Establish a secure connection to the earthed conductor (PE); protection class I.
- ▶ Never disconnect plug connections during operation.
- ▶ Keep lines and cables away from hot surfaces (> 70 °C).
- ▶ Do not carry out your own conversions or modifications on the unit.
- ▶ Observe the unit protection class prior to installation or operation in other environments.

2.4 Limits of use of the product

Installation location	weatherproof (internal space)
Air pressure	750 hPa to 1060 hPa
Installation altitude	max. 2000 m
Rel. air humidity	max. 80%, at T < 31°C, up to max. 50% at T < 40°C
Protection class	I
Protection category	IP20
Ambient temperature	+5 ° to +50 °C

Tbl. 3: Permissible ambient conditions

2.5 Proper use

- The power supply packs are used exclusively to provide a voltage supply to the electronic drive units of Pfeiffer Vacuum vacuum pumps and their accessories.

2.6 Foreseeable misuse

Improper use of the product invalidates all warranty and liability claims. Any use that is counter to the purpose of the product, whether intentional or unintentional, is regarded as misuse, in particular:

- Connection to the current supply that do not comply with the provisions of IEC 61010 or IEC 60950
- Operation with excessively high irradiated heat output
- Use in areas with ionizing radiation
- Operation in explosion-hazard areas
- Use of accessories or spare parts that are not listed in these instructions

2.7 Personnel qualification

The work described in this document may only be carried out by persons who have appropriate professional qualifications and the necessary experience or who have completed the necessary training as provided by Pfeiffer Vacuum.

Training people

1. Train the technical personnel on the product.
2. Only let personnel to be trained work with and on the product when under the supervision of trained personnel.
3. Only allow trained technical personnel to work with the product.
4. Before starting work, make sure that the commissioned personnel have read and understood these operating instructions and all applicable documents, in particular the safety, maintenance and repair information.

2.7.1 Ensuring personnel qualification

Specialist for mechanical work

Only a trained specialist may carry out mechanical work. Within the meaning of this document, specialists are people responsible for construction, mechanical installation, troubleshooting and maintenance of the product, and who have the following qualifications:

- Qualification in the mechanical field in accordance with nationally applicable regulations
- Knowledge of this documentation

Specialist for electrotechnical work

Only a trained electrician may carry out electrical engineering work. Within the meaning of this document, electricians are people responsible for electrical installation, commissioning, troubleshooting, and maintenance of the product, and who have the following qualifications:

- Qualification in the electrical engineering field in accordance with nationally applicable regulations
- Knowledge of this documentation

In addition, these individuals must be familiar with applicable safety regulations and laws, as well as the other standards, guidelines, and laws referred to in this documentation. The above individuals must have an explicitly granted operational authorization to commission, program, configure, mark, and earth devices, systems, and circuits in accordance with safety technology standards.

Trained individuals

Only adequately trained individuals may carry out all works in other transport, storage, operation and disposal fields. Such training must ensure that individuals are capable of carrying out the required activities and work steps safely and properly.

2.7.2 Personnel qualification for maintenance and repair



Advanced training courses

Pfeiffer Vacuum offers advanced training courses to maintenance levels 2 and 3.

Adequately trained individuals are:

- **Maintenance level 1**
 - Customer (trained specialist)
- **Maintenance level 2**
 - Customer with technical education
 - Pfeiffer Vacuum service technician
- **Maintenance level 3**
 - Customer with Pfeiffer Vacuum service training
 - Pfeiffer Vacuum service technician

2.7.3 Advanced training with Pfeiffer Vacuum

For optimal and trouble-free use of this product, Pfeiffer Vacuum offers a comprehensive range of courses and technical trainings.

For more information, please contact [Pfeiffer Vacuum technical training](#).

3 Product description

3.1 Function

Type TPS power supply packs are used to provide the voltage supply to the drive electronics of the Pfeiffer Vacuum vacuum pumps. The output voltage "DC out" is safely isolated from the mains input voltage "AC in".

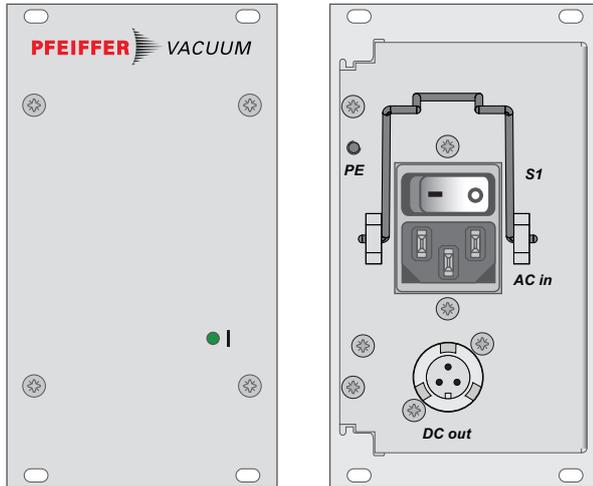


Fig. 2: Front and rear view of the TPS power supply pack

- I LED operating mode display
- PE Earthed conductor connection, M4
- S1 Mains switch
- AC in Mains power supply
- DC out Voltage output for TM 700

3.2 Identifying the product

- ▶ To ensure clear identification of the product when communicating with Pfeiffer Vacuum, always keep all of the information on the rating plate to hand.
- ▶ Learn about certifications through test seals on the product or at www.certipedia.com with company ID no. 000024550.

3.3 Product features

Feature	TPS 110	TPS 111	TPS 180	TPS 181	TPS 310	TPS 311	TPS 400	TPS 401
Type of attachment	W ¹⁾	E ²⁾	W	E	W	E	W	E
Electronic drive unit	TC 110		TC 110		TC 400		TC 400	
Output power	110 W		180 W		300 W		400 W	

Tbl. 4: Product features

1) Wall or standard rail mounting
 2) 19" rack module 3HU with front panel

3.4 Connections

	DC out Housing connector with bayonet lock for the voltage supply between Pfeiffer Vacuum power supply packs and the TM electronic drive unit.
	AC in Mains connection socket (IEC 320 C14)

Tbl. 5: TPS connection description

3.5 Scope of delivery

- Power supply TPS
- Fixing materials
- Operating instructions

4 Installation

4.1 Preparing for installation

General comments regarding installation

- ▶ Choose a site for installation where access to the product and to supply lines is possible at all times.
- ▶ Install the device upright.
- ▶ Respect the ambient conditions stated for the area of use.
- ▶ A minimum distance of 50 mm from the upper cooling vents to adjacent components must be maintained.
- ▶ Ensure adequate cooling options, e.g., in the control cabinet.

4.2 Installing the device

⚠ WARNING

Risk of fatal injury through electric shock due to incorrect installation.

Using screws longer than those specified will cause a short circuit; the external housing parts may be live. There is a risk of fatalities from electric shock upon contact.

- ▶ Use only the supplied installation materials.

NOTICE

Damage caused by overheating

The ambient temperature must not exceed the permissible operating temperature of the device.

- ▶ Make sure there is unobstructed circulation of air when installing the device.
- ▶ Periodically check and clean the installed air filter, if necessary.

The specific type designation of the power supply provides information on the installation type. Suitable assembly accessories are included in the scope of delivery.

4.2.1 Installing the device with standard rail brackets

Required tool

- Crosshead screwdriver

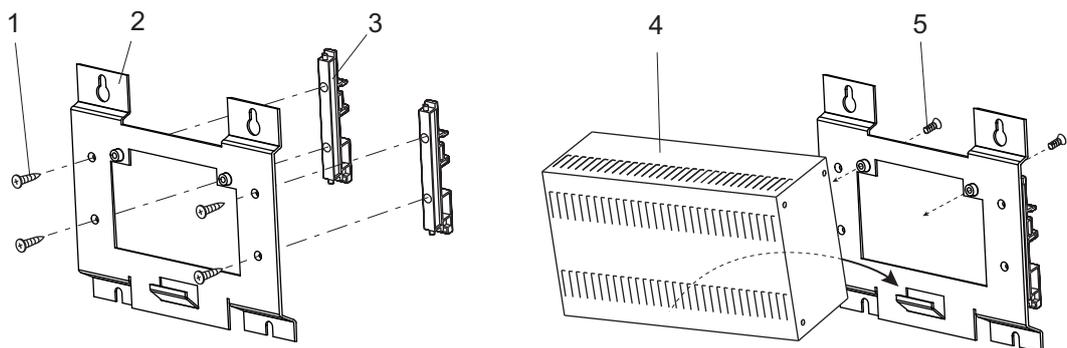


Fig. 3: Standard rail installation

- | | |
|-------------------------|--------------------|
| 1 Screw (4×) | 4 Power supply TPS |
| 2 Wall bracket | 5 Screw (2×) |
| 3 Standard rail bracket | |

Procedure

1. Fasten the standard rail bracket onto the wall bracket using the screws supplied.
2. Insert the power supply pack into the bottom lug of the wall bracket and fasten the power supply pack with both screws.
3. Fasten the power supply pack on the standard rail bracket.

4.2.2 Installing the device on the wall

Required tool

- Crosshead screwdriver

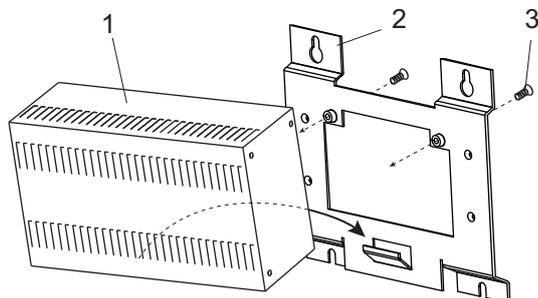


Fig. 4: Wall installation

- | | |
|--------------------|--------------|
| 1 Power supply TPS | 3 Screw (2×) |
| 2 Wall bracket | |

Procedure

1. Insert the power supply pack into the bottom lug of the wall bracket and fasten the power supply pack with both screws.
2. Fasten the wall bracket on the wall.

4.2.3 Installing the device in a 19" rack

NOTICE

Loss of control cabinet protection class

As a built-in unit, the device can negate the required protection class (protection against foreign matter and water) of control cabinets according to IEC 60204-1, for example.

- ▶ Take suitable measures to reestablish the required protection class.

The device is suitable for installation in a 19" mounting rack 3HU in accordance with DIN 41494. For this purpose, 4 collar screws and synthetic nipples are included in the shipment.

Procedure

1. Install guide rails in the rack as required.
2. Push the device upright into the rack all the way to the front panel.
3. Secure the front panel with 4 collar screws and plastic nipples included in the shipment.

4.3 Connecting the electrical supply

⚠ DANGER

Danger to life from electric shock

Contact with exposed and live elements generate an electric shock. Incorrect connection of the mains supply leads to the risk of live housing parts that can be touched. There is a risk to life.

- ▶ Before the installation, check that the connection leads are voltage-free.
- ▶ Make sure that electrical installations are only carried out by qualified electricians.
- ▶ Provide adequate grounding for the device.
- ▶ After connection work, do a PE conductor check.

⚠ WARNING

Risk of injury due to incorrect installation

Dangerous situations may arise from unsafe or incorrect installation.

- ▶ Do not carry out your own conversions or modifications on the unit.
- ▶ Ensure the integration into an Emergency Off safety circuit.

⚠ WARNING

Risk of danger to life through missing mains disconnection device

The vacuum pump and electronic drive unit are **not** equipped with a mains disconnection device (mains switch).

- ▶ Install a mains disconnection device according to SEMI-S2.
- ▶ Install a circuit breaker with an interruption rating of at least 10,000 A.

4.3.1 Connection diagram

⚠ DANGER

Danger to life from electric shock

Power supply packs that are not specified or are not approved will lead to severe injury to death.

- ▶ Make sure that the power supply pack meets the requirements for double isolation between mains input voltage and output voltage, in accordance with IEC 61010-1 IEC 60950-1 and IEC 62368-1.
- ▶ Make sure that the power supply pack meets the requirements in accordance with IEC 61010-1 IEC 60950-1 and IEC 62368-1.
- ▶ Where possible, use original power supply packs or only power supply packs that correspond with the applicable safety regulations.

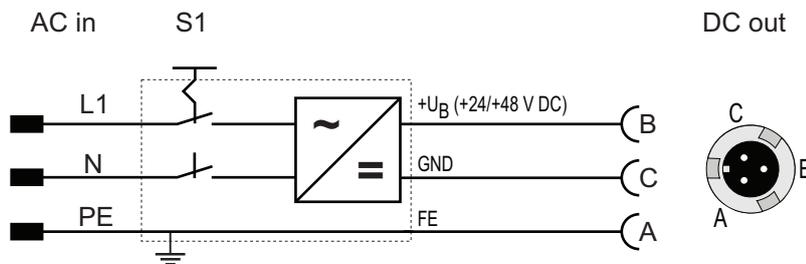


Fig. 5: Connection diagram TPS

4.3.2 Establishing mains connection

1. Make sure that the "S1" power supply pack master switch is off prior to connection.
2. Always ensure a secure connection to the earthed conductor (PE), protection class I.
3. Insert the mains connector cable (not included in the shipment) in the "AC in" mains connection plug at the rear side of the device.
4. Secure the connection with the mounting bracket, if available.
5. Connect the mains cable to the mains power supply on the customer-side.

5 Operation

5.1 Switch on the device

Procedure

1. Connect the TPS power supply pack to the drive electronics according to the operating instructions of the vacuum pump to be provided with power.
2. Switch on the current supply with the S1 switch ("1" position).
 - The green LED on the front side lights up.

5.2 Switch off the device

Procedure

1. Switch off the current supply with the S1 switch ("0" position).
 - The green LED on the front side is unlit.
2. Disconnect the power supply pack from the mains to disconnect the current supply completely.

6 Maintenance

WARNING

Danger to life from electric shock during maintenance and service work

The device is only completely de-energized when the mains plug has been disconnected and the vacuum pump is at a standstill. There is a danger to life from electric shock when making contact with live components.

- ▶ Before performing all work, switch off the main switch.
- ▶ Wait until the vacuum pump comes to a standstill (rotation speed =0).
- ▶ Disconnect all connection cables.
- ▶ Remove the mains plug from the device.
- ▶ Secure the device against unintentional restarting.

Approach in case of a defect

The power supply pack cannot be repaired.

- ▶ In case of a defect, replace the entire device.

7 Recycling and disposal

WARNING

Health hazard through poisoning from toxic contaminated components or devices

Toxic process media result in contamination of devices or parts of them. During maintenance work, there is a risk to health from contact with these poisonous substances. Illegal disposal of toxic substances causes environmental damage.

- ▶ Take suitable safety precautions and prevent health hazards or environmental pollution by toxic process media.
- ▶ Decontaminate affected parts before carrying out maintenance work.
- ▶ Wear protective equipment.



Environmental protection

You **must** dispose of the product and its components in accordance with all applicable regulations for protecting people, the environment and nature.

- Help to reduce the wastage of natural resources.
- Prevent contamination.



Environmental protection

The product and its components **must be disposed of in accordance with the applicable regulations relating to environmental protection and human health**, with a view to reducing natural resource wastage and preventing pollution.

7.1 General disposal information

Pfeiffer Vacuum products contain materials that you must recycle.

- ▶ Dispose of our products according to the following:
 - Iron
 - Aluminium
 - Copper
 - Synthetic
 - Electronic components
 - Oil and fat, solvent-free
- ▶ Observe the special precautionary measures when disposing of:
 - Fluoroelastomers (FKM)
 - Potentially contaminated components that come into contact with media

7.2 Disposing of the power supply pack

Electronic components and their housings contain material that must be recycled.

- ▶ Dispose of electronic components in a safe manner according to locally applicable regulations.

8 Malfunctions

⚠ WARNING

Danger to life from electric shock in the event of a fault

In the event of a fault, devices connected to the mains may be live. There is a danger to life from electric shock when making contact with live components.

- ▶ Always keep the mains connection freely accessible so you can disconnect it at any time.

9 Service solutions by Pfeiffer Vacuum

We offer first-class service

High vacuum component service life, in combination with low downtime, are clear expectations that you place on us. We meet your needs with efficient products and outstanding service.

We are always focused on perfecting our core competence – servicing of vacuum components. Once you have purchased a product from Pfeiffer Vacuum, our service is far from over. This is often exactly where service begins. Obviously, in proven Pfeiffer Vacuum quality.

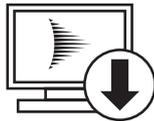
Our professional sales and service employees are available to provide you with reliable assistance, worldwide. Pfeiffer Vacuum offers an entire range of services, from [original replacement parts](#) to [service contracts](#).

Make use of Pfeiffer Vacuum service

Whether preventive, on-site service carried out by our field service, fast replacement with mint condition replacement products, or repair carried out in a [Service Center](#) near you – you have various options for maintaining your equipment availability. You can find more detailed information and addresses on our homepage, in the [Pfeiffer Vacuum Service](#) section.

You can obtain advice on the optimal solution for you, from your [Pfeiffer Vacuum representative](#).

For fast and smooth service process handling, we recommend the following:



1. Download the up-to-date form templates.
 - [Explanations of service requests](#)
 - [Service requests](#)
 - [Contamination declaration](#)



- a) Remove and store all accessories (all external parts, such as valves, protective screens, etc.).
 - b) If necessary, drain operating fluid/lubricant.
 - c) If necessary, drain coolant.
2. Complete the service request and contamination declaration.



3. Send the forms by email, fax, or post to your local [Service Center](#).

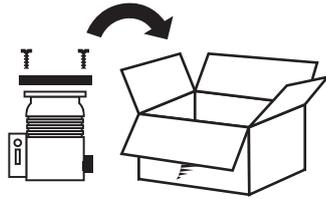


4. You will receive an acknowledgment from Pfeiffer Vacuum.

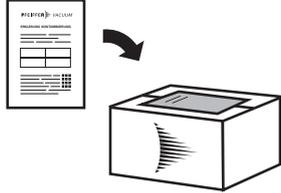
PFEIFFER VACUUM

Submission of contaminated products

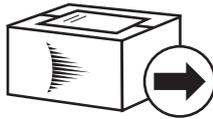
No microbiological, explosive, or radiologically contaminated products will be accepted. Where products are contaminated, or the contamination declaration is missing, Pfeiffer Vacuum will contact you before starting service work. Depending on the product and degree of pollution, **additional decontamination costs** may be incurred.



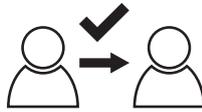
5. Prepare the product for transport in accordance with the provisions in the contamination declaration.
 - a) Neutralize the product with nitrogen or dry air.
 - b) Seal all openings with blind flanges, so that they are airtight.
 - c) Shrink-wrap the product in suitable protective foil.
 - d) Package the product in suitable, stable transport containers only.
 - e) Maintain applicable transport conditions.



6. Attach the contamination declaration to the **outside** of the packaging.



7. Now send your product to your local Service Center.



8. You will receive an acknowledgment/quotation, from Pfeiffer Vacuum.

PFEIFFER VACUUM

Our sales and delivery conditions and repair and maintenance conditions for vacuum devices and components apply to all service orders.

10 Accessories

Description	Order number
Mains cable 230 V AC, CEE 7/7 to C13, 3 m	P 4564 309 ZA
Mains cable 115 V AC, NEMA 5-15 to C13, 3 m	P 4564 309 ZE
Mains cable 208 V AC, NEMA 6-15 to C13, 3 m	P 4564 309 ZF

Tbl. 6: TPS accessories

11 Technical data and dimensions

11.1 Technical data

Selection field	TPS 110, power supply pack for wall/standard rail fitting	TPS 111, power supply pack 3HU 19" rack module
Order number	PM 061 340 -T	PM 061 344 -T
Input voltage(s)	115 – 230 V AC (-20/+15 %), 50/60 Hz	115 – 230 V AC (-20/+15 %), 50/60 Hz
Input voltage: tolerance	-20/+15 %	-20/+15 %
Mains requirement: frequency (range)	50/60 Hz	50/60 Hz
Power consumption max.	130 VA	130 VA
Output current	4.6 A	4.6 A
Output voltage	24 (± 2 %) V DC	24 (± 2 %) V DC
Ambient temperature	5 – 50 °C	5 – 50 °C
Protection category	IP20	IP20
Weight	0.7 kg	0.7 kg

Tbl. 7: TPS 110, TPS 111

Selection field	TPS 180, power supply pack for wall/standard rail fitting	TPS 181, power supply pack 19" rack module 3HU
Order number	PM 061 341 -T	PM 061 345 -T
Input voltage(s)	115 – 230 V AC (-20/+15 %), 50/60 Hz	115 – 230 V AC (-20/+15 %), 50/60 Hz
Input voltage: tolerance	-20/+15 %	-20/+15 %
Mains requirement: frequency (range)	50/60 Hz	50/60 Hz
Power consumption max.	210 VA	210 VA
Output current	7.5 A	7.5 A
Output voltage	24 (± 2 %) V DC	24 (± 2 %) V DC
Ambient temperature	5 – 50 °C	5 – 50 °C
Protection category	IP20	IP20
Weight	1 kg	1 kg

Tbl. 8: TPS 180, TPS 181

Selection field	TPS 310, power supply pack for wall/standard rail fitting	TPS 311, power supply pack 3HU 19" rack module
Order number	PM 061 342 -T	PM 061 346 -T
Input voltage(s)	115 – 230 V AC (-20/+15 %), 50/60 Hz	115 – 230 V AC (-20/+15 %), 50/60 Hz
Input voltage: tolerance	-20/+15 %	-20/+15 %
Mains requirement: frequency (range)	50/60 Hz	50/60 Hz
Power consumption max.	340 VA	340 VA
Output current	12.5 A	12.5 A
Output voltage	24 (± 2 %) V DC	24 (± 2 %) V DC
Ambient temperature	5 – 50 °C	5 – 50 °C
Protection category	IP20	IP20
Weight	1.1 kg	1.1 kg

Tbl. 9: TPS 310, TPS 311

Selection field	TPS 400, power supply pack 48 V DC, for wall/standard rail fitting	TPS 401, power supply pack 48 V DC, 19" partial plug-in 3HU
Order number	PM 061 343 -T	PM 061 347 -T
Input voltage(s)	115 – 230 V AC (-20/+15 %), 50/60 Hz	115 – 230 V AC (-20/+15 %), 50/60 Hz
Input voltage: tolerance	-20/+15 %	-20/+15 %
Mains requirement: frequency (range)	50/60 Hz	50/60 Hz
Power consumption max.	450 VA	450 VA
Output current	8.4 A	8.4 A
Output voltage	48 (± 2 %) V DC	48 (± 2 %) V DC
Ambient temperature	5 – 50 °C	5 – 50 °C
Protection category	IP20	IP20
Weight	1.75 kg	1.75 kg

Tbl. 10: TPS 400, TPS 401

11.2 Dimensions

Dimensions in mm

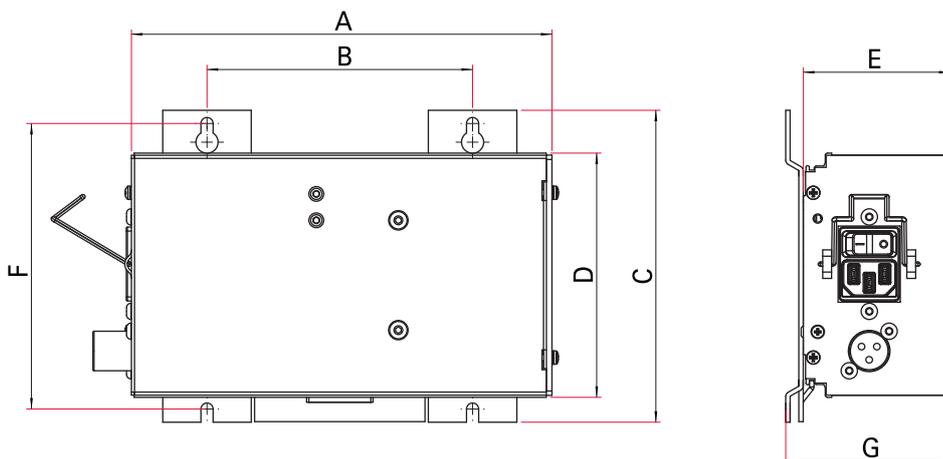


Fig. 6: Dimensions TPS 110 - TPS 400

Classification	TPS 110	TPS 180	TPS 310	TPS 400
E	48.7 mm	58.4 mm	67.3 mm	104.6 mm
G	56.6 mm	66.5 mm	75.3 mm	112.5 mm
F	130 mm	130 mm	130 mm	130 mm
A	169 mm	190 mm	190 mm	190 mm
B	120 mm	120 mm	120 mm	120 mm
C	142 mm	142 mm	142 mm	142 mm
D	111.2 mm	111.2 mm	111.2 mm	111.2 mm

Tbl. 11: Dimensions TPS 110 - TPS 400

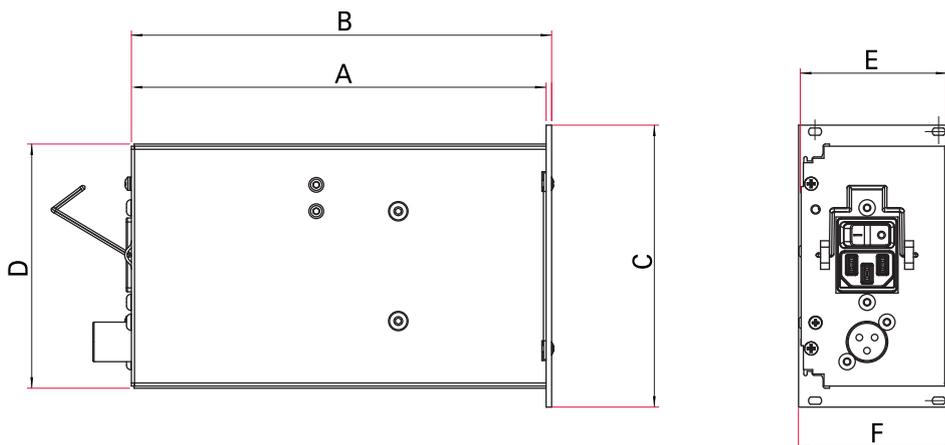


Fig. 7: Dimensions TPS 111 - TPS 401

Classification	TPS 111	TPS 181	TPS 311	TPS 401
E	48.7 mm	58.4 mm	67.3 mm	104.6 mm
F	50.5 mm	60.7 mm	70.8 mm	106.4 mm
A	161.5 mm	187.5 mm	187.5 mm	187.5 mm
B	164 mm	190 mm	190 mm	190 mm
C	128.4 mm	128.4 mm	128.4 mm	128.4 mm
D	111.2 mm	111.2 mm	111.2 mm	111.2 mm

Tbl. 12: Dimensions TPS 111 - TPS 401

Declaration of conformity

Declaration for product(s) of the type:

Power supply pack

TPS 110	TPS 310
TPS 111	TPS 311
TPS 180	TPS 400
TPS 181	TPS 401

We hereby declare that the listed product satisfies all relevant provisions of the following **European Directives**.

Low voltage 2014/35/EC

Electromagnetic compatibility 2014/30/EU

Restriction of the use of certain hazardous substances 2011/65/EU

Restriction of the use of certain hazardous substances, delegated directive 2015/863/EU

Harmonized standards and applied national standards and specifications:

DIN EN 61000-3-2: 2014

DIN EN 61000-3-3: 2013

DIN EN 61010-1: 2011

DIN EN 61326-1: 2013

DIN EN 62061: 2013

DIN EN IEC 63000: 2019

Semi F47-0200

Semi S2-0706

Signature:



(Daniel Sälzer)
Managing Director

Pfeiffer Vacuum GmbH
Berliner Straße 43
35614 Asslar
Germany

Asslar, 2019-11-08



VACUUM SOLUTIONS FROM A SINGLE SOURCE

Pfeiffer Vacuum stands for innovative and custom vacuum solutions worldwide, technological perfection, competent advice and reliable service.

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From a single component to complex systems:

We are the only supplier of vacuum technology that provides a complete product portfolio.

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Benefit from our know-how and our portfolio of training opportunities!

We support you with your plant layout and provide first-class on-site service worldwide.

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Are you looking for a
perfect vacuum solution?
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