



OPERATING INSTRUCTIONS

EN

Translation of the Original

CONVERTER

Adapter

PFEIFFER  **VACUUM**

Dear Customer,

Thank you for choosing a Pfeiffer Vacuum product. Your new Control Unit should 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

These operating instructions are 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 these 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

Document	Number
Profinet option operating instructions	PT 0731 BN
EtherCAT option operating instructions	PT 0754 BN
Declaration of conformity	A component of these instructions

You can find these documents in the [Pfeiffer Vacuum Download Center](#).

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 meanings.

	<p>Rating plate (example) The rating plate is clearly visible on the housing.</p>
	<p>Test seal The test seal provides information regarding additional certifications.</p>

Tbl. 1: Stickers on the product

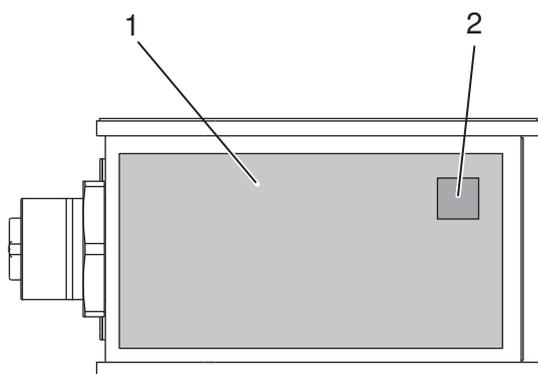


Fig. 1: Position of the stickers on the product

- 1 Rating plate
- 2 TÜV test seal

1.3.4 Abbreviations

Abbreviation	Meaning in this document
EC	EtherCAT
PN	Profinet

Tbl. 2: Abbreviations used in this document

1.4 Trademark proof

- Profibus® is a registered trade name of Profibus Nutzerorganisation e.V. (Profibus user organization).
- EtherCAT® is a registered trademark and patented technology licensed by Beckhoff Automation GmbH, Germany.



Fig. 2: EtherCAT logo

2 Safety

2.1 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 grounded conductor (PE); protection class I or III.
- ▶ 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 degree prior to installation or operation in other environments.

2.2 Proper use

- The converter including the pre-installed option is used only for connection to the corresponding serial interfaces of Pfeiffer Vacuum devices. The function varies depending on the option installed.
- The option called Profinet is used for connection to the industrial communication system Profinet.
- The option called EtherCAT is used for connection to the industrial communication system EtherCAT.

2.3 Foreseeable improper use

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 improper use; in particular:

- Connection to the current supply that does not comply with the provisions of IEC 61010 or IEC 60950
- Operating modes that may result in hazardous situations with connected devices if unintentionally or automatically activated
- Operation with excessive irradiated heat output
- Use in areas with ionizing radiation
- Operation in potentially explosive areas
- Use of accessories or spare parts that are not listed in these instructions
- Replacement of functional modules by the customer

3 Product description

3.1 Function

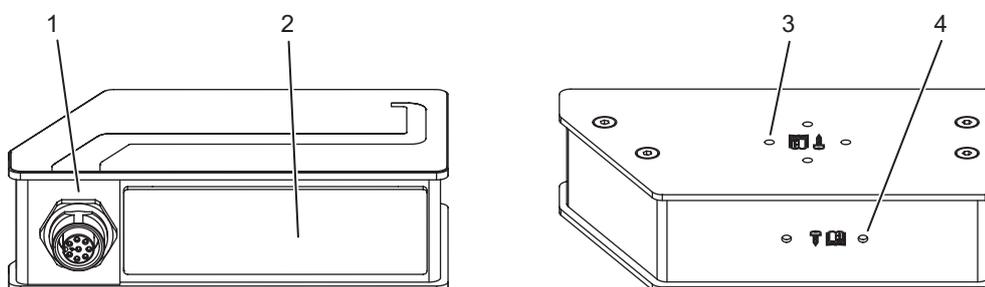


Fig. 3: View of converter

- | | |
|--------------------|-----------|
| 1 M12 socket | 3 Holes A |
| 2 Shaft for option | 4 Holes B |

The converter is a gateway that, via a serial connection, provides the functions resulting from the integrated option to various connectable products. The following combinations are possible:

Product	Converter.EC Converter with EtherCAT module	Converter.PN Converter with Profinet module
A200L V3.2, series 4	X	
MVP 010-3 DC		X
MVP 015-2/-4 DC		X
MVP 030 DC		X
HiLobe		X
HiScroll	X	X
HiPace Neo TC 80	X	
HiPace TC 110		X

Tbl. 3: Possible combinations of the converter with functional modules and Pfeiffer Vacuum products

3.2 Connections

Connection	Pin	Function
	1	+24 V input
	2	RS485.D+/CAN_H to device
	3	RS485.D-/CAN_L to device
	4	RS485.D+/CAN_H from application (if any)
	5	RS485.D-/CAN_L from application (if any)
	6	DI from application (if any)
	7	DO remote to device
	8	GND

Tbl. 4: Connection M12

4 Functional modules

4.1 Profinet option

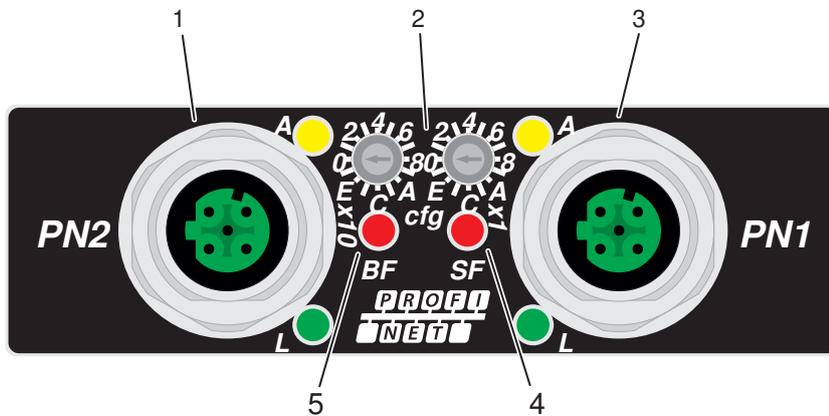


Fig. 4: Profinet option

- | | |
|---------------------------------|--------------------|
| 1 PN2 connector with status LED | 4 System error LED |
| 2 Configuration selector switch | 5 Bus error LED |
| 3 PN1 connector with status LED | |

4.2 EtherCAT option

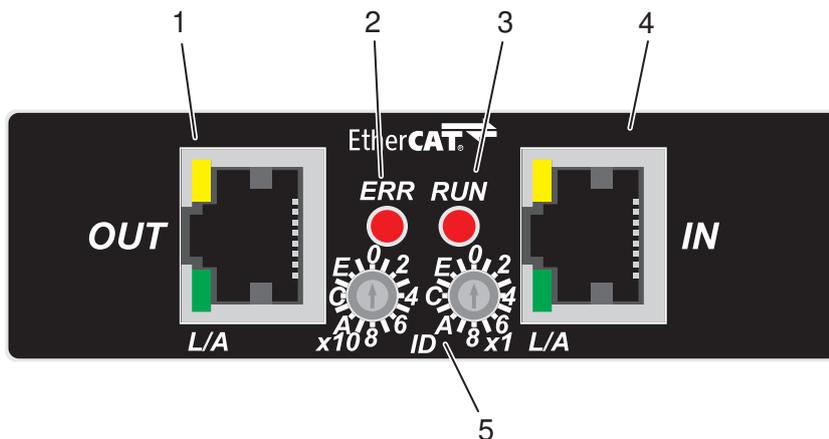


Fig. 5: EtherCAT option

- | | |
|-----------------------------------|-----------------------------------|
| 1 Connector for outgoing bus line | 4 Connector for incoming bus line |
| 2 LED error | 5 Configuration selector switch |
| 3 LED status | |

5 Installation

5.1 Mounting converter on profile rail

NOTICE

Damage due to incorrect installation materials

Incorrect screws and installation material can damage the device.

- ▶ Use only the installation materials supplied (in particular screws).

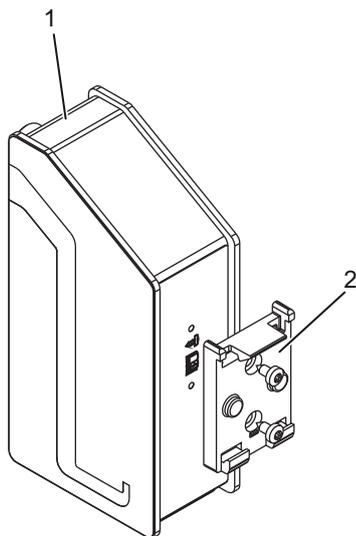


Fig. 6: Profile rail installation – Converter

- 1 Converter 2 Profile rail holder

Installing converter on profile rail

1. Fasten the profile rail holder to the converter.
 - Tightening torque: **1 Nm**
2. Fasten the converter to the profile rail with the components of the respective mounting kits.

5.2 Installing converter with holding brackets

NOTICE

Damage due to incorrect installation materials

Incorrect screws and installation material can damage the device.

- ▶ Use only the installation materials supplied (in particular screws).

This type of attachment applies to installation on a Pfeiffer Vacuum HiScroll vacuum pump.

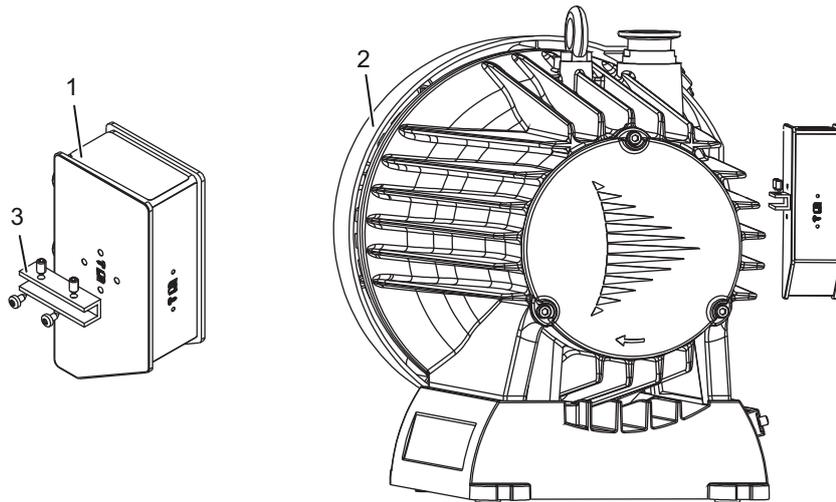


Fig. 7: Holding bracket installation – Converter

- 1 Converter
- 2 HiScroll
- 3 Holding bracket for HiScroll

Installing converter with bracket

1. With the grub screws, fasten the converter to the holding bracket.
 - Tightening torque: **1.2 Nm**
2. With the screws, fasten the bracket to one of the cooling fins of the HiScroll vacuum pump.
 - Tightening torque: **1 Nm**

5.3 Installing converter with holding bracket

NOTICE

Damage due to incorrect installation materials
 Incorrect screws and installation material can damage the device.
 ► Use only the installation materials supplied (in particular screws).

This type of attachment applies to installation on the Pfeiffer Vacuum HiPace 80, HiPace 80 Neo, and HiLobe vacuum pumps.

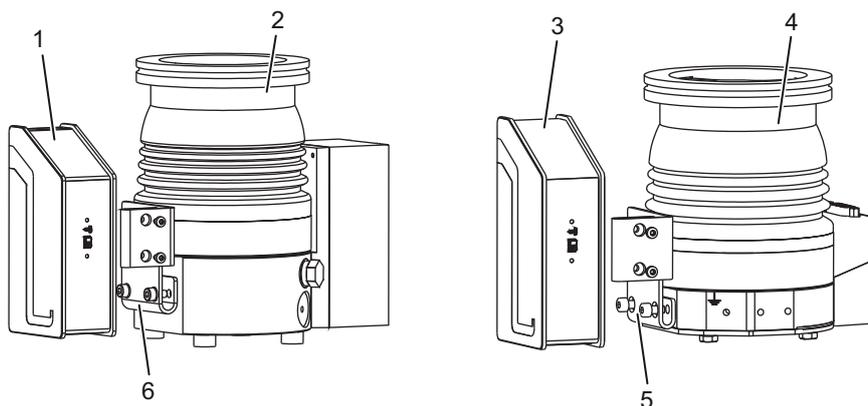


Fig. 8: Holding bracket installation – HiPace converter

- 1 Converter
- 2 HiPace 80
- 3 Converter
- 4 HiPace 80 Neo
- 5 Holding bracket for HiPace 80 Neo
- 6 Holding bracket for HiPace 80

Installing converter with holding bracket on HiPace

1. Fasten the holding bracket with the cylinder screws to the vacuum pump.
 - Tightening torque: **2.9 Nm**
2. Fasten the converter to the holding bracket with the components of the respective mounting kits.
 - Tightening torque: **1 Nm**

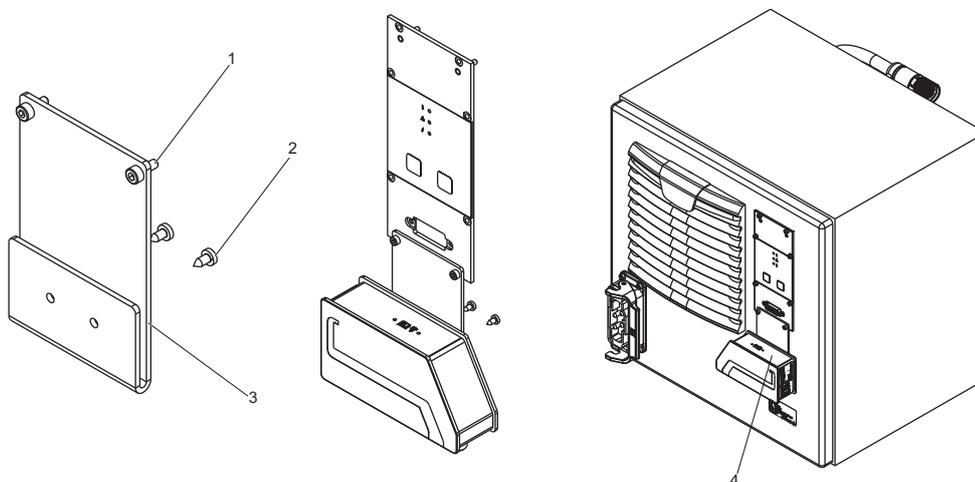


Fig. 9: Holding bracket installation – HiLobe converter

- | | |
|-------------------|---|
| 1 Cylinder screw | 3 Support |
| 2 Oval head screw | 4 Converter with installed holding bracket for HiLobe |

Installing converter with holding bracket on HiLobe

1. With the countersunk screws, fasten the holding bracket to the vacuum pump.
 - Tightening torque: **1.2 Nm**
2. Fasten the converter to the holding bracket with the components of the respective mounting kits.
 - Tightening torque: **1 Nm**

5.4 Fastening converter with Velcro

NOTICE

Damage due to incorrect installation materials

Incorrect screws and installation material can damage the device.

- Use only the installation materials supplied (in particular screws).

This type of attachment applies to installation on Pfeiffer Vacuum multi-stage roots pumps in series 4 and A 200 L V3.2.

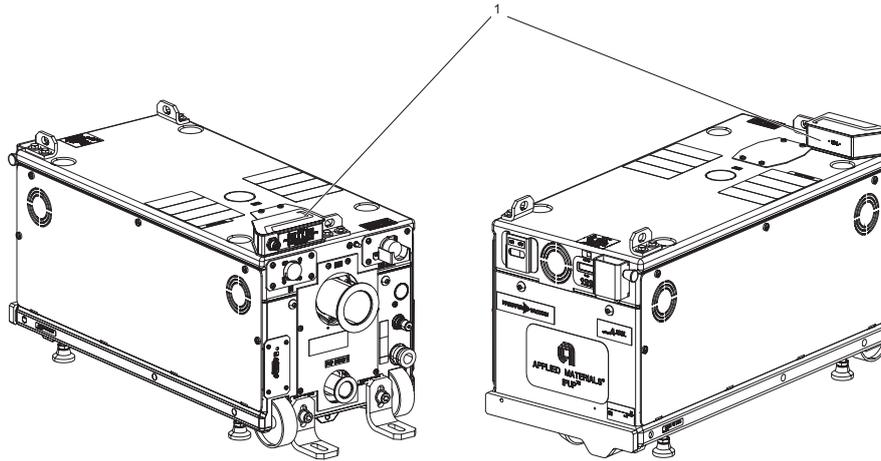


Fig. 10: Converter mounting on multi-stage roots pumps

1 Converter

Fastening converter to pump with Velcro

- ▶ Using the Velcro fastener, attach the converter to the vacuum pump.

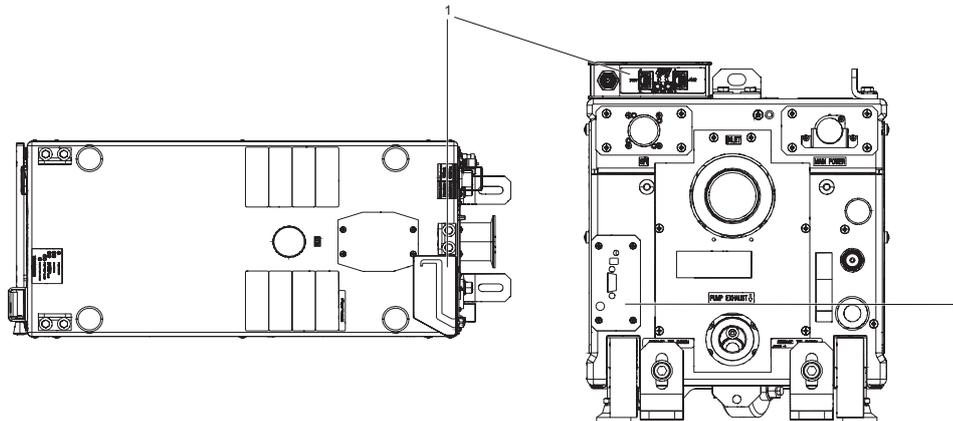


Fig. 11: Connecting converter to RS card

1 Converter 2 RS card

Connecting converter to RS card

- ▶ Connect the converter to the vacuum pump with the cable supplied.

6 Recycling and disposal



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.

Pfeiffer Vacuum products contain materials that you must recycle.

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

7 Technical data and dimensions

7.1 Technical data

Selection field	Converter Profinet (M12)	Converter EtherCAT (RJ45)
Part number	PE C00 104 0	PE C00 105 0
Module Slot 1	Profinet®	EtherCAT
Input voltage(s)	24 V DC ($\pm 10\%$)	24 V DC ($\pm 10\%$)
Current, max.	0.1 A	0.1 A
Power consumption max.	2 W	2 W
Protection degree	IP20	IP20
Ambient temperature	0 – 50 °C	0 – 50 °C
Weight	250 g	250 g

Tbl. 5: Technical data – Converter

7.2 Dimension drawings

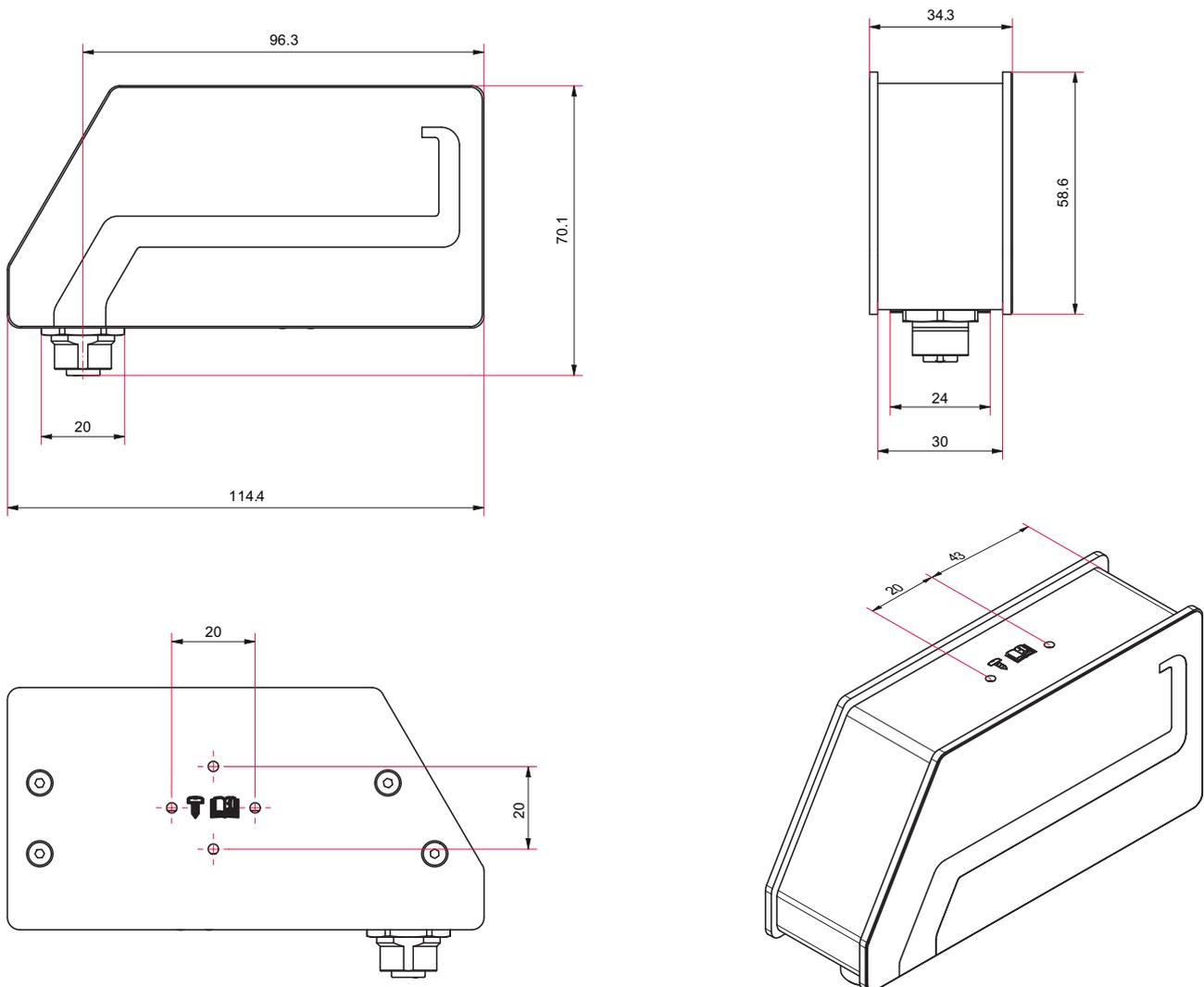


Fig. 12: Converter dimensions
Dimensions in mm

EU Declaration of conformity

This declaration of conformity has been issued under the sole responsibility of the manufacturer.

Declaration for product(s) of the type:

Converter

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

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 55011 : 2022

DIN EN 63000 : 2019

Signature:



(Daniel Sälzer)
Managing Director

Pfeiffer Vacuum GmbH
Berliner Straße 43
35614 Asslar
Germany

Asslar, 2023-07-19



UK Declaration of Conformity

This declaration of conformity has been issued under the sole responsibility of the manufacturer.

Declaration for product(s) of the type:

Converter

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

Electrical Equipment (Safety) Regulations 2016

Electromagnetic Compatibility Regulations 2016

The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012

Applied standards and specifications:

EN 55011 : 2016

EN IEC 63000: 2018

The manufacturer's authorized representative in the United Kingdom and the authorized agent for compiling the technical documentation is Pfeiffer Vacuum Ltd, 16 Plover Close, Interchange Park, MK169PS Newport Pagnell.

Signature:



(Daniel Sälzer)
Managing Director

Pfeiffer Vacuum GmbH
Berliner Straße 43
35614 Asslar
Germany

Asslar, 2022-12-09

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