



OPERATING INSTRUCTIONS

EN

Translation of the Original

RADIO TRANSMITTER

Radio transmitter for leak detectors

Dear customer,

Thank you for choosing a Pfeiffer Vacuum product. Your new radio transmitter 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.

Copyright

This document is the intellectual property of Pfeiffer Vacuum and all contents of this document are protected by copyright. They may not be copied, altered, reproduced or published without the prior written permission of Pfeiffer Vacuum.

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

Table of contents

1	About this manual	6
1.1	Validity	6
	1.1.1 Applicable documents	6
	1.1.2 Variants	6
1.2	Target group	6
1.3	Conventions	6
	1.3.1 Instructions in the text	6
	1.3.2 Pictographs	7
	1.3.3 Product labels	7
2	Safety	8
2.1	General safety instructions	8
2.2	Safety instructions	8
2.3	Safety precautions	9
2.4	Proper use	9
2.5	Foreseeable improper use	9
2.6	Responsibilities and warranty	9
2.7	Owner requirements	10
2.8	Personnel qualification	10
	2.8.1 Ensuring personnel qualification	10
	2.8.2 Personnel qualification for maintenance and repair	11
	2.8.3 Advanced training with Pfeiffer Vacuum	11
2.9	Operator requirements	11
3	Transportation and storage	12
4	Product description	13
4.1	Identifying the product	13
4.2	Structure	13
5	Installation	14
5.1	Preparing the radio transmitter	14
5.2	Radio transmitter installation	14
6	Service solutions from Pfeiffer Vacuum	15
7	Technical data	17

List of tables

Tbl. 1:	Applicable documents	6
Tbl. 2:	Technical data	17

List of figures

Fig. 1:	Radio transmitter components	13
Fig. 2:	Mounting the radio transmitter and remote control on the leak detector	13

1 About this manual



IMPORTANT

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

1.1 Validity

This document describes the function of the products listed in the following and provides the most important information for safe use. The description is written in accordance with the valid directives. The information in this document refers to the current development status of the products. The document retains its validity assuming that the customer does not make any changes to the product.

1.1.1 Applicable documents

Designation	Document
Operating instructions "Leak detector"	(depending on the device used)
Operating instructions "Remote control" RC 500 / RC 500 WL	IG 0140

Tbl. 1: Applicable documents

1.1.2 Variants

This document applies to the product with the following part number:

Part number	Designation
PT 445 422	Radio transmitter

Pfeiffer Vacuum reserves the right to make technical changes without prior notification.

The figures in this document are not to scale (dimensions in mm).

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 Product labels

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



Rating plate

The rating plate is located on the front side of the radio transmitter.

2 Safety

2.1 General safety instructions

This document includes the following 4 risk levels and 1 information level.

⚠ DANGER
<p>Imminent danger Indicates a hazardous situation which, if not avoided, will result in death or serious injury.</p> <ul style="list-style-type: none"> ▶ Instructions on avoiding the hazardous situation

⚠ WARNING
<p>Possibly imminent danger Indicates a hazardous situation which, if not avoided, could result in death or serious injury.</p> <ul style="list-style-type: none"> ▶ Instructions on avoiding the hazardous situation

⚠ CAUTION
<p>Possibly imminent danger Indicates a hazardous situation which, if not avoided, could result in minor or moderate injury.</p> <ul style="list-style-type: none"> ▶ Instructions on avoiding the hazardous situation

NOTICE
<p>Danger of property damage Notice is used to address practices not related to physical injury.</p> <ul style="list-style-type: none"> ▶ Instructions on avoiding property damage

i	Notes, tips or examples indicate important information on the product or on this document.
----------	--

2.2 Safety instructions

i	<p>Safety instructions according to product's life stages All safety instructions in this document are based on the results of a risk assessment. Pfeiffer Vacuum has taken into account all the relevant life stages of the product.</p>
----------	---

Risks during transport

NOTICE
<p>Damage caused by incorrect transportation Transportation in unsuitable packaging, or failure to install all transport locks, can damage the product.</p> <ul style="list-style-type: none"> ▶ Comply with the instructions for safe transportation.

Risks during storage

NOTICE
<p>Damage caused by improper storage Improper storage will lead to damage to the product.</p> <ul style="list-style-type: none"> ▶ Comply with the instructions for safe storage.

Risks during installation

NOTICE

Damage from connecting or disconnecting under voltage

The device as well as devices connected will be damaged by connecting or disconnecting during current operation.

- ▶ Attach all cables only when the devices are switched off.
- ▶ Remove all cables only when the devices are switched off.

2.3 Safety precautions

The product is designed according to the latest technology and recognized safety engineering rules. Nevertheless, improper use can result in danger to operator all third party life and limb, and product damage and additional property damage.



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.

Meet fundamental safety measures

1. When handling the gases and contaminated parts used, observe the applicable guidelines.
2. Observe the protective measures.
3. Observe the safety guidelines specified in this document.
 - All work is only permissible when observing the relevant guidelines and adhering to the protective measures.
4. Inform yourself about any contamination before starting work.
5. Pass on safety instructions to all other users.

2.4 Proper use

The radio transmitter serves as wireless connection of the remote control RC 500 WL with a leak detector (MiniTest 300, HLT 5xx or ASM 340).

Using the product according to its intended purpose

1. Install, operate and maintain the product only in accordance with these operating instructions.
2. Comply with the application limits.
3. Observe the technical data.

2.5 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 misuse, in particular:

- Use outside the mechanical and electrical application limits (technical data)
- Use with corrosive or explosive media, if this is not explicitly permitted
- Use outdoors
- Use after technical changes (on the inside or the outside of the product)
- Use with replacement or accessory parts that are unsuitable or are not approved

2.6 Responsibilities and warranty

Pfeiffer Vacuum shall assume no responsibilities and warranty if the operating company or a third party:

- disregards this document.
- does not use the product for its intended purpose.

- carries out any modifications to the product (conversions, changes, maintenance work, etc.) that are not listed in the corresponding operating instructions.
- operates the product with accessories that are not listed in the corresponding operating instructions.

The operator is responsible for the process media used.

2.7 Owner requirements

Safety-conscious working

1. Only operate the product in a technically flawless state.
2. Operate the product in line with its intended purpose, safety and hazard-conscious and only in compliance with these operating instructions.
3. Fulfill the following instructions and monitor the observation of the following instructions:
 - Proper use
 - Generally applicable safety instructions and accident prevention regulations
 - International, national and locally applicable standards and guidelines
 - Additional product-related guidelines and regulations
4. Only use original parts or parts approved by Pfeiffer Vacuum.
5. Keep the operating instructions available at the place of installation.
6. Ensure personnel qualification.

2.8 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.

2.8.1 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.

2.8.2 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

2.8.3 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](#).

2.9 Operator requirements

Observing relevant documents and data

1. Read, observe and follow this operating instruction and the work instructions prepared by the operating company, in particular the safety and warning instructions.
2. Install, operate and maintain the product only in accordance with these operating instructions.
3. Carry out all work only on the basis of the complete operating instructions and applicable documents.
4. Comply with the application limits.
5. Observe the technical data.
6. Please contact the Pfeiffer Vacuum Service Center if your questions on operation or maintenance of the product are not answered by these operating instructions.
 - You can find information in the [Pfeiffer Vacuum service area](#).

3 Transportation and storage

NOTICE

Damage caused by incorrect transportation

Transportation in unsuitable packaging, or failure to install all transport locks, can damage the product.

- ▶ Comply with the instructions for safe transportation.

NOTICE

Damage caused by improper storage

Improper storage will lead to damage to the product.

Static charging, moisture, etc. lead to defects on the electronic components.

- ▶ Comply with the instructions for safe storage.

Transporting the product safely

1. Observe the weight of the product.
2. Where possible, always transport or ship the product in the original packaging.
3. Always use dense and impact-proof packaging for the product.
4. Remove the existing protective cover and transport protections only immediately prior to installation.
5. Reattach transport locks and transport protections prior to each transport.

Storing the product safely

1. Store the product in a cool, dry, dust-free place, where it is protected against impacts and mechanical vibration.
2. Always use dense and impact-proof packaging for the product.
3. Where possible, store the product in the original packaging.
4. Store electronic components in antistatic packaging.
5. Maintain the permissible storage temperature.
6. Avoid extreme fluctuations of the ambient temperature.
7. Avoid high air humidity.
8. Seal connections with the original protective caps.
9. Protect the product with the original transport protections (where available).

4 Product description

4.1 Identifying the product

The identification of a radio transmitter is found on its rating plate (PV_...). The identification serves to establish a radio connection with another device.

Recording rating plate data

1. Read the data on the product rating plate.
2. Record this data.
3. Always have all rating plate specifications to hand.

4.2 Structure

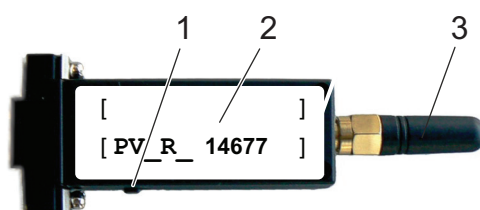


Fig. 1: Radio transmitter components

- 1 Switch
- 2 Radio transmitter
- 3 Antenna



Fig. 2: Mounting the radio transmitter and remote control on the leak detector

- 1 RJ-25 socket on the leak detector
- 2 Connecting cable (in the shipment of the remote control)
- 3 Complete radio transmitter
- 4 Remote control of the leak detector (RC 500 / RC 500 WL)

5 Installation

5.1 Preparing the radio transmitter

Procedure

1. Screw the antenna onto the radio transmitter.
2. Move the switch to ON.

5.2 Radio transmitter installation

NOTICE

Damage from connecting or disconnecting under voltage

The device as well as devices connected will be damaged by connecting or disconnecting during current operation.

- ▶ Attach all cables only when the devices are switched off.
- ▶ Remove all cables only when the devices are switched off.



Increasing the range

To increase the range, in event of unfavorable reception conditions, you can also operate the radio transmitter for transmitting from the leak detector via a cable extension (e.g. on the roof of the hall).



Metallic objects

Where possible, in order to guarantee an optimum range, do not mount the antenna of the radio transmitter near to metallic objects.



ASM 3xx and MiniTest 300

You can also connect the radio transmitter to the device without cable. The last step is then omitted.

Radio transmitter installation

Required material

- Hook-and-loop fastener
1. Connect the connecting cable from the shipment of the RC 500 WL with the radio transmitter.
 2. Using the hook-and-loop fastener, fix the complete radio transmitter to a suitable location on the leak detector or at the reception location.
 - In doing so, there must be a visual connection to the leak detector remote control.
 3. Connect the connecting cable to the RJ-25 socket of the leak detector.

6 Service solutions from Pfeiffer Vacuum

We offer first class service

Long vacuum component service life, coupled with low downtimes, are clear expectations that you have of us. We satisfy your needs with capable products and outstanding service.

We are consistently striving to perfect our core competence, service for vacuum components. And our service is far from over once you've purchased a product from Pfeiffer Vacuum. It often enough really just begins then. In proven Pfeiffer Vacuum quality, of course.

Our professional sales engineers and service technicians stand ready to provide hands-on support to you worldwide. Pfeiffer Vacuum offers a complete portfolio of service offerings, ranging from genuine spare parts right through to service agreements.

Take advantage of Pfeiffer Vacuum Service

Whether for preventative on-site service from our field service, fast replacement with as-new replacement products or repair in a Service Center close to you; you have various options for upholding your equipment availability. Detailed information and addresses can be found on our website in the Pfeiffer Vacuum Service section.

Advice on the optimum solution is available from your Pfeiffer Vacuum contact partner.

For quick and smooth handling of the service process, we recommend the following steps:



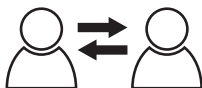
1. Download the current form templates.
 - [Declaration of Service Request](#)
 - [Service Request](#)
 - [Declaration of Contamination](#)



- a) Dismantle all accessories and keep them (all external mounted parts as valve, inlet screen, etc.).
 - b) Drain the operating fluid/lubricant as necessary.
 - c) Drain the cooling medium as necessary.
2. Fill out the service request and the declaration of contamination.



3. Send the forms via email, fax or post to your local Service Center.

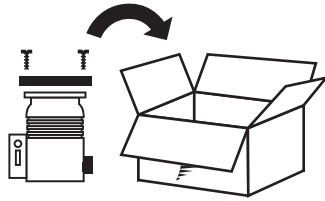


4. You will receive a response from Pfeiffer Vacuum.

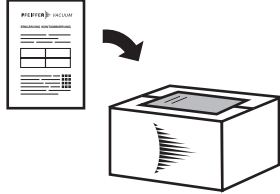
PFEIFFER VACUUM

Sending of contaminated products

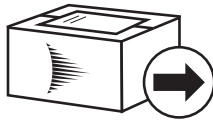
No units will be accepted if they are contaminated with micro-biological, explosive or radioactive substances. If products are contaminated or if the declaration of contamination is missing, Pfeiffer Vacuum will contact the customer before starting maintenance. In addition, depending on the product and the level of contamination **additional decontamination costs** may be required.



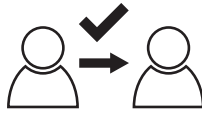
5. Prepare the product for transport in accordance with the details in the declaration of contamination.
 - a) Neutralize the product with nitrogen or dry air.
 - b) Close all openings with airtight blank flanges.
 - c) Seal the product in appropriate protective film.
 - d) Only pack the product in suitable, stable transport containers.
 - e) Observe the applicable transport conditions.



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



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



8. You will receive a confirmation message/a quotation from Pfeiffer Vacuum.

PFEIFFER VACUUM

For all service orders, our General Terms and Conditions of Sales and Supply and General Terms and Conditions of Repair and Maintenance apply to vacuum equipment and components.

7 Technical data

Parameter	Value
Manufacturer	SENA Technologies Inc.
Frequency	2.4 GHz
Transmission power	18 dBm
Sensitivity	-88 dBm
Supply	integrated
Operating temperature	-40 – 85 °C
Storage temperature	-40 – 85 °C
Conformity (approvals)	FCC(A), CE, MIC, TELEC, SIG, IC

Tbl. 2: Technical data

More information under www.senanetworks.com.

VACUUM SOLUTIONS FROM A SINGLE SOURCE

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

COMPLETE RANGE OF PRODUCTS

From a single component to complex systems:

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

COMPETENCE IN THEORY AND PRACTICE

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.

ed. C - Date 1908 - P/N:IG0142BEN



Are you looking for a
perfect vacuum solution?
Please contact us

Pfeiffer Vacuum GmbH
Headquarters • Germany
T +49 6441 802-0
info@pfeiffer-vacuum.de

www.pfeiffer-vacuum.com

PFEIFFER  **VACUUM**