

PREMIUM
ALPINE
PERFORMANCE



MANUAL

PIEPS MICRO BT

sensor/button/RACE



04 21
Firmware v3.0

ENGLISH

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1. INTRODUCTION

Thank you for purchasing a PIEPS beacon!

Register your PIEPS beacon in the PIEPS APP (iOS, Android) or at my.pieps.com and get:

- A warranty extension free of charge
- Important information about software updates

Your PIEPS beacon includes all tried and tested PIEPS features:

- 3 antenna technology
- Big, circular receiving range for a quick and stable signal detection
- Perfect signal processing, even in difficult situations (multiple burials)
- Mark function
- Comprehensive self-check
- Easy to use group check
- PIEPS interference protection
- Auto search-to-send
- iPROBE support
- Device management via PIEPS APP

An avalanche beacon does not protect against avalanches! Detailed knowledge of avalanche prevention is as indispensable as regularly practicing victim searches in an emergency. The following procedures and tips relate only to special usage in conjunction with the PIEPS beacon. The basic line of action in an emergency – as explained in specialist publications and material from avalanche courses – must be followed.

With the PIEPS beacon you have a product that is state of the art in terms of safety and user-friendliness. Despite this, the PIEPS beacon can pose risks if used inappropriately or incorrectly. We refer to possible hazards in chapter 2 and with safety notes placed throughout the operating manual.

This operating manual is intended to ensure the safe use of the PIEPS beacon. The safety instructions in this document must be followed at all times. Before you use the PIEPS beacon, you must have read and understand this operating manual.

Pieps GmbH is not liable for technical or printing errors in this operating manual, neither is any liability accepted for damage caused directly or indirectly by the delivery, performance or use of this operating manual.

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1.1 MARKINGS

In accordance with applicable regulations, the following marks may be found on the PIEPS beacon or/and on the packaging:



CE mark of conformity: indicating the fulfillment of the following standards: EMV 2014/30/EU, RED 2014/53/EU, RoHS 2011/65/EU.



Dustbin symbol: advising users to dispose of waste electrical and electronic equipment separately from unsorted municipal waste.

FCC ID

FCC ID: indicating the compliance with Part 15 of the FCC Rules.

IC ID

IC ID: indicating the compliance with Industry Canada's licence-exempt RSS standard(s).



Bluetooth® logo: The Bluetooth® word mark and logos are registered trademarks owned by the Bluetooth SIG, Inc. and any use of such marks by Pieps GmbH is under license. Other trademarks and trade names are those of their respective owners.

SN

12 digit serial number: identifying the device and is used for device registration.



Recycling symbol.



Battery symbol: indicating battery type and correct position.



Instruction pictogram: advising users to read the instructions and warnings.

PIEPS

PIEPS brand name.



PIEPS logo.

PRO BT

Example of the model name.

1.2 LIABILITY

The information contained in this operating manual describes but does not guarantee the features of the product. No liability is accepted for damage caused by:

- improper use,
- failure to follow the operating manual,
- unauthorized modifications of the PIEPS beacon,
- improper work on and with the PIEPS beacon,
- continuing to use the PIEPS beacon despite evidence of wear and tear,
- unauthorized, improperly carried out repairs,
- emergencies, external influences or force majeure.

NOTICE

Alterations or modifications not explicitly approved by the manufacturer will result in you no longer being allowed to use the device.

1.3 WARRANTY CONDITIONS

The manufacturer provides a 2-year warranty covering manufacturing and material defects of the PIEPS beacon from the date of purchase. Exceptions are the battery, carrying system, hand-loop and bag as well as any damage caused by improper use or dismantling of the device by unauthorized persons. Any other warranties and liability for consequential damage are expressly excluded. For warranty claims, please take proof of purchase and a description of the fault to the point of sale.

1.4 MANUFACTURER ADDRESS & SUPPORT

Pieps GmbH, Parkring 4, 8403 Lebring, Austria

For technical problems, please contact the support: support@pieps.com

1.5 INTENDED USE

The PIEPS beacon serves as an avalanche victim search device (avalanche transceiver) for the localization of buried persons and must only be used as intended. Any other use requires the written consent of Pieps GmbH. Improper use can put individuals at risk and result in the device being damaged. The PIEPS beacon is not an automatically functioning device with partly automated functionalities – for this reason, the PIEPS beacon may only be commissioned after having read and understood the documentation. Failure to use the device as intended will result in all liability and warranty claims being rejected. The PIEPS beacon is to be operated only under the conditions of use described in the documentation.

1.6 TARGET GROUP AND PREVIOUS KNOWLEDGE

An avalanche beacon should be part of the avalanche emergency equipment of everyone who ventures off from the secured piste into open, unsecured terrain (e.g. ski touring, freeriding, mountain rescue operations, etc.).

Users of the PIEPS beacon must meet the following conditions:

- Read and understand this operating manual.
- Users with impaired vision must ensure that they can read the labelling and displays on the device as well as the instructions in the documentation without problem.
- If users with impaired hearing are unable to hear the acoustic signal, they must ensure that they can correctly interpret the display indications in accordance with the instructions in the operating manual.
- Regular training ensures safe and efficient use of the PIEPS beacon.

1.7 ESSENTIALS

The PIEPS beacon meets the current state of technology and the applicable health and safety regulations. However, incorrect operation or misuse can give rise to hazards for:

- the life and health of the users or third parties,
- the PIEPS beacon and property of the user,
- the efficient use of the PIEPS beacon.

1.8 TECHNICAL SPECIFICATIONS




Name	PIEPS MICRO BT sensor/button/RACE
Transmission frequency	457 kHz
Field strength	max. 7 dB μ A/m (2,23 μ A/m) at a distance of 10 m
Bluetooth transmission frequency	2.402 - 2.480 GHz
Bluetooth transmission power	0 dBm
Power supply	1x Alkaline (AA) LR6 1.5 V or 1x Lithium (AA) FR6 1.5V
Battery lifetime	200 h (Alkaline), 350 h (Lithium)
Search strip width	50 m
Dimensions (LxWxH)	106 x 74 x 20 mm
Weight	150 g (incl. battery)
Temperature range	-20° C to +45° C (-4° F to +113° F)
Storage temperature range	-25° C to +70° C (-13° F to +158° F)

2. SAFETY

This operating manual is structured in accordance with the applicable EU regulations and contains safety instructions. Each individual is personally responsible for complying with the safety instructions. This chapter contains all safety-related information.

Should anything be unclear or difficult to understand, please contact our support team.

2.1 SIGNAL WORDS USED IN THE SAFETY INSTRUCTIONS

-  **DANGER** ***Imminent threat to the life of individuals***
A safety instruction with the signal word DANGER indicates an imminent threat to the life and health of individuals!
-  **WARNING** ***Risk of personal injury (serious injuries) and possible material damage***
A safety instruction with the signal word WARNING indicates a dangerous situation which could affect the health of individuals.
-  **CAUTION** ***Risk of material damage and possible minor risk of injury***
A safety instruction with the signal word CAUTION indicates a possibly dangerous situation which could primarily result in material damage.
- NOTICE** *This symbol with the text NOTICE indicates supporting information.*

2.2 GENERAL SAFETY RULES AND OBLIGATIONS

The following safety rules and obligations apply in general for using the PIEPS beacon:

- The PIEPS beacon must only be used in perfect condition.
- It is forbidden to change the PIEPS beacon without the written permission of Pieps GmbH.
- Do not attempt to repair damage or malfunctions without authorization. Instead, contact our support, who will tell how to proceed. The PIEPS beacon must not be used until the damage/malfunction has been repaired.
- The safety and operating instructions in the operating manual must be followed at all times.

2.3 RESIDUAL RISKS | WARNINGS

Even though the PIEPS beacon has been designed with maximum care and all safety-related facts have been taken into consideration, residual risks may exist and must be evaluated by means of a risk assessment. All residual risks and warnings from the risk assessment are listed in this chapter.

- ⚠ DANGER** ***Risk of device loss due to incorrect carrying.***
Risk of unintentional switching due to incorrect carrying (PIEPS MICRO BT sensor).
Always carry the device in the included carrying system!
Always leave the device cord-secured!
- ⚠ DANGER** ***Risk of a not transmitting device due to enabled Bluetooth***
The Bluetooth mode is supposed for device management and training mode only! Never use the Bluetooth mode in avalanche terrain!
- ⚠ DANGER** ***Risk of battery explosion due to improper battery types or damaged batteries.***
Risk of incorrect battery capacity reading due to improper battery types.
Only use batteries of type "Alkaline (AA) LR6 1.5 V or Lithium (AA) FR6 1.5V"!
The use of Lithium batteries must be confirmed in the PIEPS APP!
- ⚠ WARNING** ***Risk of hearing damage due to the high noise level***
Never hold the device directly next to your ear! A minimum distance of 50 cm is recommended.
- ⚠ CAUTION** ***Risk of crushing***
Be aware of a crushing risk when using the sliders!
- ⚠ CAUTION** ***Risk of device malfunction or damage due to extreme temperatures***
Do not expose the device to extreme temperatures outside of the operating limits! Store the device protected from direct sunlight! Extreme temperatures can result in malfunction or damage.
- ⚠ CAUTION** ***Risk of damages due to inefficient packaging at transport.***
It is recommended to keep the packaging after unpacking and keep it to use it in case of warranty issues.
- NOTICE** *The user must read the operating manual!*

3. PACKAGING

- 1x PIEPS MICRO BT sensor/button/RACE
- 1x Alkaline battery (in battery compartment)
- 1x PIEPS MICRO BT sensor/button carrying system
- 1x PIEPS MICRO Bag
- 1x PIEPS hand loop
- 1x Quick Start Guide
- 1x PIEPS-Sticker

Check that the contents are complete and undamaged after unpacking. If necessary, contact your point of sale or our support team. A correct disposal of the packaging is an environmentally friendly manner (paper to paper, plastic to plastic, etc.).

⚠ CAUTION *Risk of damages due to inefficient packaging at transport.*
It is recommended to keep the packaging after unpacking and keep it to use it in case of warranty issues.

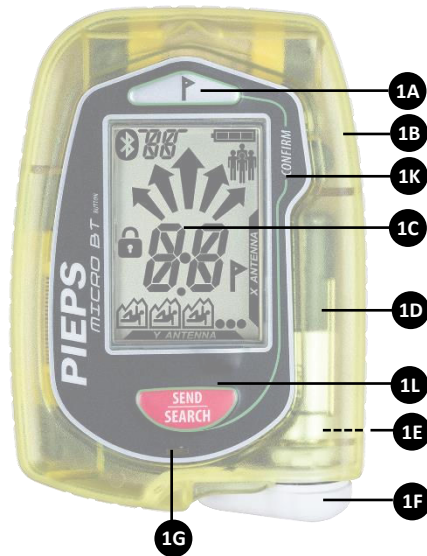
4. GENERAL DESCRIPTION

4.1 STRUCTURE

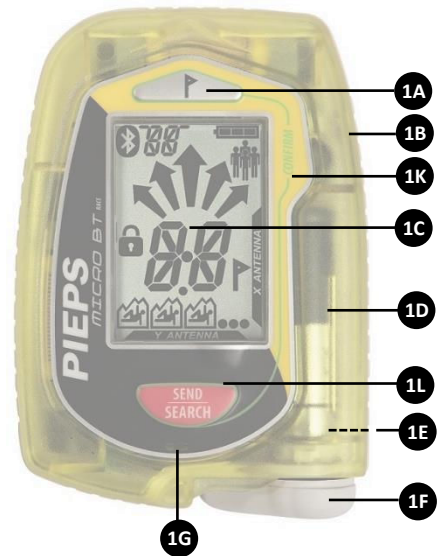
PIEPS MICRO BT sensor



PIEPS MICRO BT button

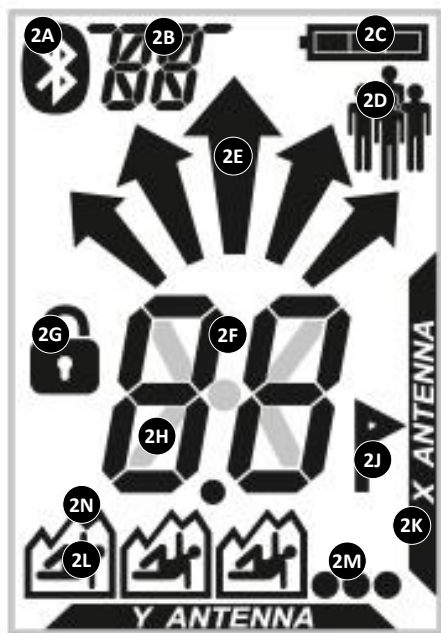


PIEPS MICRO BT RACE



- (1A) MARK button
- (1B) Transmit control LED
- (1C) LCD-Display (backlight)
- (1D) Battery compartment
- (1E) Battery polarity
- (1F) Main switch ON/OFF/access to battery compartment
- (1G) Loudspeaker

- (1H) "Release SEARCH-LOCK " info symbol*
 - (1J) Proximity-Sensor*
 - (1K) "Confirm SEND-SEARCH switch with MARK button" info symbol**
 - (1L) SEND/SEARCH button**
- * PIEPS MICRO BT sensor only
 ** PIEPS MICRO BT button/RACE only



- (2A) Bluetooth active
 - (2B) Auxiliary display
 - (2C) Battery capacity
 - (2D) Group check
 - (2E) Direction indicator
 - (2F) Distance indicator
 - (2G) SEARCH-LOCK (search mode blocked) *
 - (2H) Transmit indicator
 - (2J) MARK (marking possible)
 - (2K) Current sending antenna
 - (2L) Number of burials (1-3)
 - (2M) Number of burials (4 or more)
 - (2N) Transmitter marked
- * PIEPS MICRO BT sensor only

4.2 CARRYING SYSTEM

PIEPS recommends using the included carrying system (3A).

The MICRO bag (3B) is for storage use. The included hand-loop (3C) is intended for training purpose.



⚠ Danger

Risk of device loss due to incorrect carrying.

Risk of unintentional switching due to incorrect carrying (PIEPS MICRO BT sensor).

Always carry the device in the included carrying system!

Always leave the device cord-secured!

4.3 MICRO BT SENSOR: SWITCHING ON | MODE CHANGE

4.3.1 Sensor Information:

The proximity-sensor (1J) is used for automatic switching from send to search mode. The sensor detects whether it is covered or not. This feature also works in darkness.

4.3.2 Switching on | Self-check | Send mode:

To turn on the PIEPS MICRO BT sensor, remove the beacon from the carrying system and switch it on by turning the main switch (1F) to the ON position. The switching on is confirmed with an acoustic (1x Pieps-tone) and haptic (1x Vibra) signal.

NOTICE

Take care that the sensor is not covered during the self-check! If covered the self-check will return a warning (4E) - the PIEPS MICRO BT sensor will beep, vibrates and "ST" for "Sensor test" is shown in the additional display (2B).

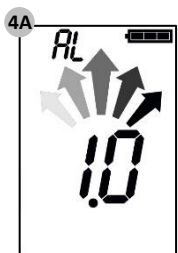
While switching on the beacon the following is displayed: current firmware-version is shown, the battery capacity/type, the status of the self-check (4A), the result of the self-check (4B) and the countdown for the group-check (4C). If the self-check is successful, "OK" is indicated on the display (4B). In the event of a device warning, an alert signal sounds and the display indicates "E" in combination with a warning-code (4E).

After the self-check, place the PIEPS MICRO BT sensor into the carrying system. The PIEPS MICRO BT sensor emits an acoustic and tactile (Vibra) warning for 4 seconds that the device will switch over from search to send mode. The PIEPS MICRO BT sensor transmits (4F) and an LED indicator light (1B) flashes.

In send-mode the transmitting symbol alternates with the AR-symbol (4F). AR stands for an active Auto-Revert Search-to-Send function. The Send-Vibra is an additional, haptic send confirmation (10x vibration).

NOTICE

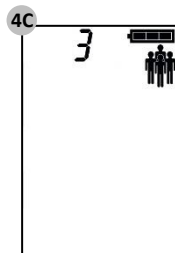
*Send-Vibra is activated by default.
The feature can be deactivated in the PIEPS APP.*



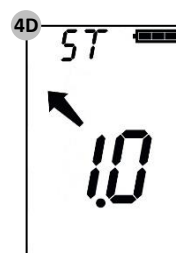
Firmware Version
Battery capacity/type
(AL=Alkaline, LI=Lithium)



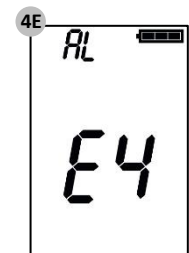
Self-check OK



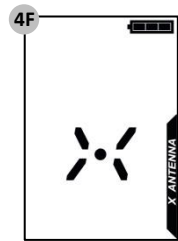
Group check
countdown



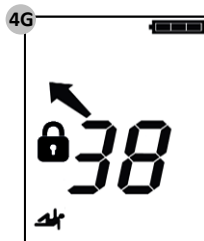
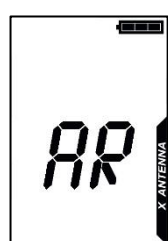
Sensor Test
warning



Self-check Error



Send mode



SEARCH-LOCK

NOTICE

To see the display in send mode, cover the sensor (1J) after unlocking the SEARCH-LOCK beforehand as necessary. If the sensor remains uncovered after the start sequence, the PIEPS MICRO BT sensor switches immediately to search mode.

NOTICE

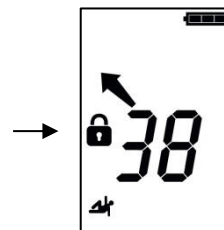
A minimum distance of 5 m from other devices and all electronic, magnetic and metallic sources of interference should be kept during the self-check.

4.3.3 Send ⇌ Search

- The PIEPS MICRO BT sensor automatically switches to search mode when you remove it from the carrying system. Search mode is blocked in this case (SEARCH-LOCK, 2G).
- The PIEPS MICRO BT sensor automatically switches to search mode if you do not place it in the carrying system after the start sequence (switch-on). Search mode is not blocked in this case.

SEARCH-LOCK

To prevent accidental switching back to send mode during the search, search mode is blocked as soon as you take the PIEPS MICRO BT sensor out of its carrying system. The PIEPS MICRO BT sensor remains in search mode even if you return it to the carrying system during probing or digging. A blocked search mode is indicated on the display with the SEARCH-LOCK symbol (4G).



NOTICE *The SEARCH-LOCK is only activated when the device was previously in send mode.*

4.3.4 Search ⇒ Send

If necessary, you can release the SEARCH-LOCK, by pressing the MARK button (1A) for 3 seconds and placing the PIEPS MICRO BT sensor in the carrying system or covering the sensor. The PIEPS MICRO BT sensor emits an acoustic and tactile (Vibra) warning for 4 seconds that the device will switch over from search to send mode. A tactile send confirmation is performed after the switchover (see Send-Vibra).

IMPORTANT *When you start the tour again, take care that the SEARCH-LOCK is not blocked, when you put the PIEPS MICRO BT sensor in the carrying system. Only if the SEARCH-LOCK is not blocked, the PIEPS MICRO BT sensor switches to send mode automatically.*

4.4 MICRO BT BUTTON/RACE: SWITCHING ON | MODE CHANGE

4.4.1 Switching on | Self-check | Send mode:

To turn on the PIEPS MICRO BT button/RACE, remove the beacon from the carrying system and switch it on by turning the main switch (1F) to the ON position. The switching on is confirmed with an acoustic (1x Pieps-tone) and haptic (1x Vibra) signal.

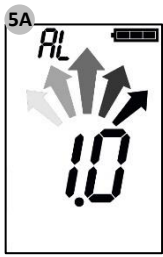
While switching on the beacon the following is displayed: current firmware-version, the battery capacity/type, the status of the self-check (5A), the result of the self-check (5B), the countdown for the group-check (5C) and at the end the transmitting display with the active transmitting antenna (5D). If the self-check is successful, "OK" is indicated on the display (5B). In the event of a device warning, an alert signal sounds and the display indicates "E" in combination with a warning-code (5E). For error codes, see [chapter 6.1](#).

The PIEPS MICRO BT button/RACE transmits (4F) and an LED indicator light (1B) flashes. In send-mode the transmitting symbol alternates with the AR-symbol (4F). AR stands for an active Auto-Revert Search-to-Send function. The Send-Vibra is an additional, haptic send confirmation (10x vibration).

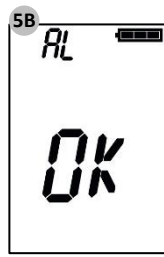
NOTICE *Send-Vibra is activated by default.
The feature can be deactivated in the PIEPS APP.*



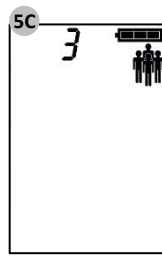
After the self-check, place the PIEPS MICRO BT button/RACE into the carrying system.



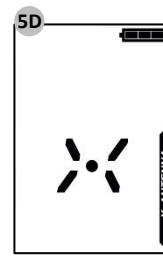
5A
Firmware Version
Battery capacity/type
(AL=Alkaline, LI=Lithium)



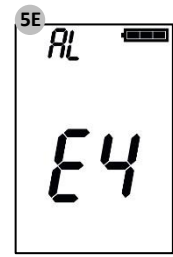
5B
Self-check OK



5C
Group check
countdown



5D
Send mode



5E
Self-check Error

NOTICE *A minimum distance of 5 m from other devices and all electronic, magnetic and metallic sources of interference should be kept during the self-check.*

4.4.2 Send ↔ Search

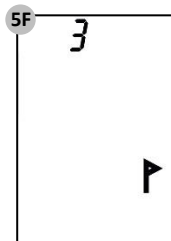
A secure switching from send mode to search mode is possible with the 2-button-activity.

Send ⇒ Search

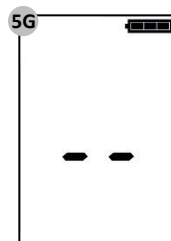
Press the SEND/SEARCH button (1L) and confirm within the switching-countdown (5F) with the MARK button (1A). The PIEPS MICRO BT button is now in search mode (5G).

Search ⇒ Send

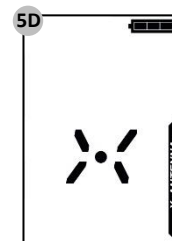
Press the SEND/SEARCH button (1L) and confirm within the switching-countdown (5F) with the MARK button (1A). The PIEPS MICRO BT button is now in send-mode (5D).



5F
Umschalt-Countdown



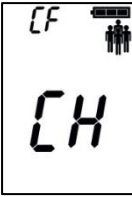




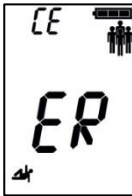


5G
Suchmodus
(ohne Signalempfang)



5D
Sendemodus

4.5 GROUP CHECK

Despite a comprehensive self-check, a beacon check (transmit check and receive check) is obligatory prior to every tour! The PIEPS beacon provides the group check function. At the group check it is checked easy and efficient if the beacon of the partner is transmitting and if the transmitting parameters are according to the standard. In group check mode the receiving range is limited to 1 m.

	Group Check Regular CF = Check Fast Check: signal, frequency		Group Check Extended CE = Check Extended Check: signal, frequency, pulse, period	
Start	<ol style="list-style-type: none"> Switch on your PIEPS beacon. Wait till the group check (CH) symbol is indicated on the display. Press and hold the button MARK during the group check countdown (CH). The group check mode is active, as long the button MARK is pressed. 		<ol style="list-style-type: none"> Switch on your PIEPS beacon. Wait till the group check (CH) symbol is indicated on the display. Press and hold the button MARK during the group check countdown (CH). The group check mode is active, as long the button MARK is pressed. 	
Results		Device not transmitting or distance too big (> 1 m)		Device not transmitting or distance too big (> 1 m)
		Distance reading: device transmitting and frequency according to standard		Distance reading: device transmitting and frequency according to standard
		Device transmitting but frequency not according to standard		Device transmitting but frequency not according to standard
				More than one signals within 1 m range => increase distance
		Continuous wave indication old-device-indication		
End	Release the button MARK to end the group check mode. During the 3 seconds countdown the group check mode can be activated again.			

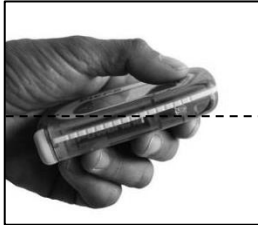
The Regular group check is sufficient for checking modern, digital devices with 3 antennas.

The Extended group check is recommended for checking old devices (analogue single-antenna devices).

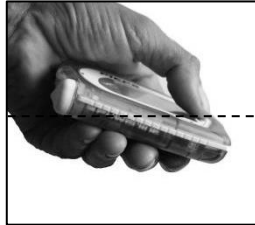
Group check Pro-Mode

The PIEPS beacon additionally provides a pro-mode. The pro-mode allows a transmit check as well as a receive check without exiting the group check mode. By default, it is disabled and can be enabled in the PIEPS APP device manager.

- Tip the PIEPS beacon downwards to transmit in group check mode
- Tip the PIEPS beacon upwards to receive in group check mode



Pro-Mode SEARCH



Pro-Mode SEND



Display in group check send mode
CT = Check Transmit

Standardmäßig ist der Pro-Mode deaktiviert. In der PIEPS APP kann das Feature aktiviert werden.

The full avalanche beacon check with pro-mode

(1) Receive check

Group leader => pro-mode SEND: device transmitting?

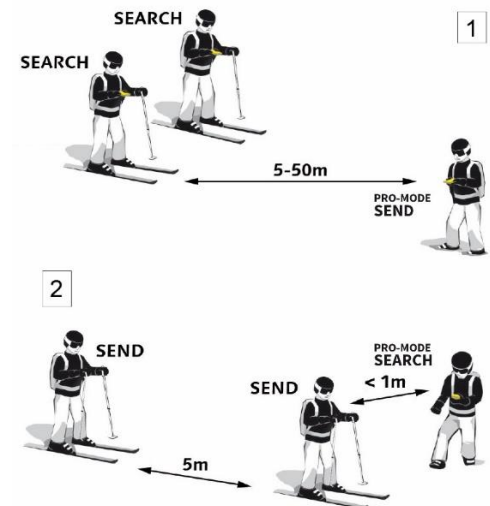
All others => search mode: devices receiving?

(2) Transmit check

Group leader => pro-mode SEARCH: device receiving?

All others => send mode: devices transmitting?

NOTICE *The receive check can be combined with a range test by choosing a large distance (50 m).*



4.6 HELPFUL PIEPS BACKGROUND FEATURES

Maximum background support in send mode and search mode!

4.6.1 PIEPS Interference Protection

- **PIEPS Auto-Antenna-Switch | protection in send mode**

If the transmitting antenna is impacted by external interference, the other antenna would take over the transmit function. The PIEPS beacon always transmits with the strongest possible signal!

- **PIEPS Signal Verification | protection in search mode**

Only a verified 457kHz signal is indicated. The PIEPS beacon doesn't confuse with ghost signal indication!

External interference and distance recommendations

All beacons are very sensitive to electrical and magnetic sources of interference. Due to this, all manufacturers recommend keeping a minimum distance from electronic, magnetic and metallic sources of interference (mobile phone, radio, keys, magnetic closures, etc.):

Minimum distance in send mode: 20 cm | Minimum distance in search mode: 50 cm

4.6.2 PIEPS iPROBE-Support

Beacons with iPROBE-support* get automatically deactivated when probing with the electronic probe PIEPS iPROBE. This prevents signal overlaps and the next-strongest signal is automatically shown on the display of the receiving beacon. Maximum support in multiple burials!

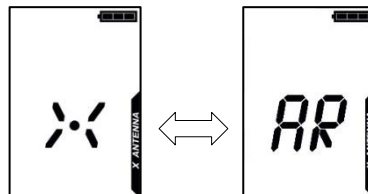
- At beacons with software version 2.8 or lower the PIEPS iPROBE support is activated automatically.
- At beacons with software version 3.0 or higher the PIEPS iPROBE support is disabled by default and can be enabled in the PIEPS APP device manager.

** Beacons with iPROBE-Support: PRO BT/POWDER BT, PIEPS MICRO BT sensor/button/RACE, PIEPS DSP SPORT, PIEPS DSP PRO/PRO ICE, PIEPS DSP STANDARD/TOUR ≥ v5.0, PIEPS FREERIDE, BLACK DIAMOND GUIDE/RECON.*

4.6.3 Secondary avalanche | Auto-Search-to-Send

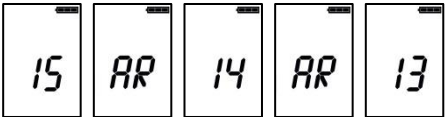
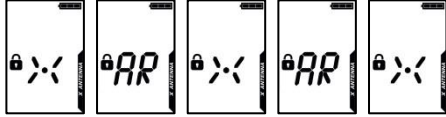
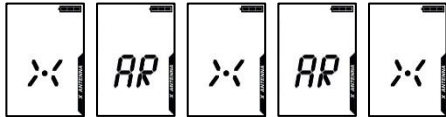


The PIEPS MICRO BT sensor/button has the Auto-Revert Search-to-Send (AR) function. The device switches from search to send mode automatically if the device has recognized a burial (no motion).

The AR function is shown clearly on the display: the transmitting symbol alternates with AR.



The AR-function provides the following characteristics:

- Motion-controlled initialization
- Short switching timeout
- Long warning phase with alert and countdown prior to switching
- Continued alert, also after switching

Beacon function	SEARCH	WARNING	SEND
Display indication	Search-Display		<p>PIEPS MICRO BT sensor:</p>  <p>PIEPS MICRO BT button/RACE:</p> 
Sound	Search-sound		
Manual abort		Turn device or press MARK button	
		<p>START WARNING</p> <p>Setting 1 (60 s) 0:30 min</p> <p>Setting 2 (90 s) 1:00 min</p> <p>Setting 3 (120 s) 1:30 min</p>	<p>SWITCHING TO SEND</p> <p>1:00 min</p> <p>1:30 min</p> <p>2:00 min</p>

After the switching the PIEPS MICRO BT sensor transmits permanently with a warning signal till it is switched off.

The PIEPS MICRO BT button/RACE can be switched into search-mode with the secured 2-button-confirmation.

4.7 SEARCH MODE | SEARCH STRATEGY

4.7.1 In case of emergency

A buried person has the greatest chance of being rescued by an efficient companion rescue. In the event of an accident, the following applies: KEEP CALM, OBSERVE, ALERT, ACT WITH COORDINATION!

(1) Keep calm & get an overview

- Are there any other risks?
- How many victims?
- Determine the primary search area!

(2) Make a brief emergency call

- EU 112, AT 140, CH 1414, IT 118, FR 15, NA 911

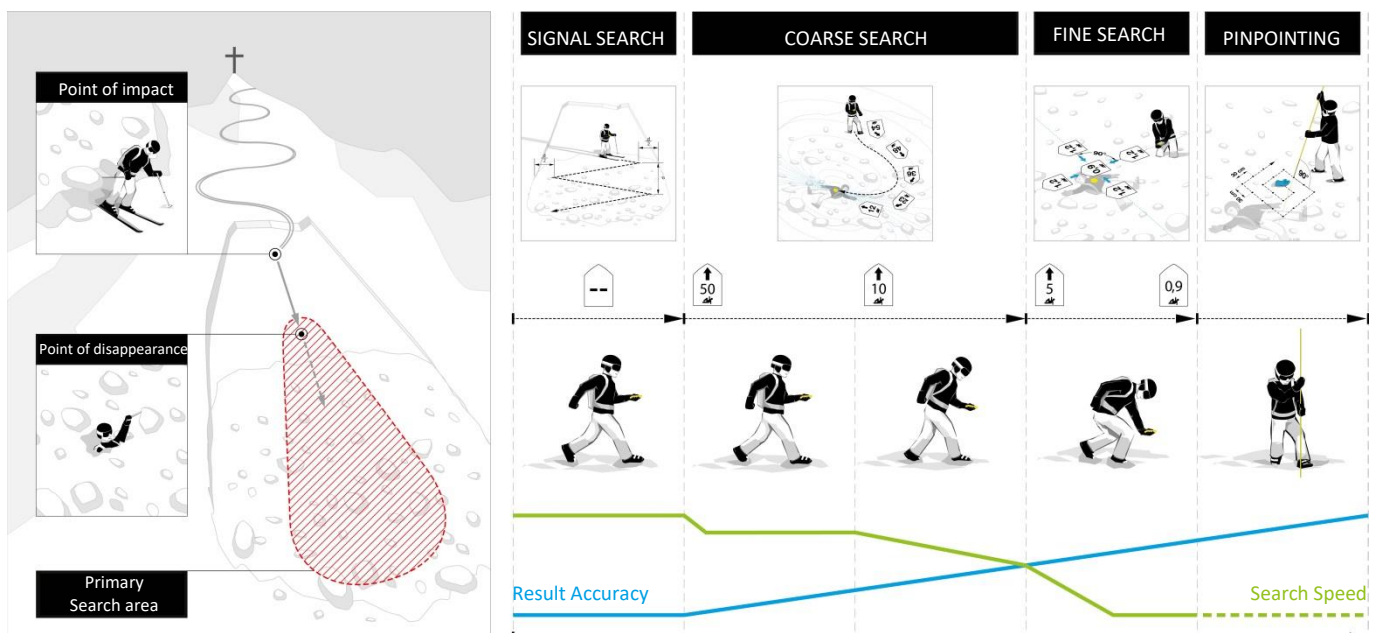
(3) Burial search

- Signal search (eyes + ears, beacon)
- Coarse search (starting with initial signal)
- Fine search (closer than 5 m on the surface)
- Pinpointing (systematic probing)

(4) Systematic digging

(5) First Aid

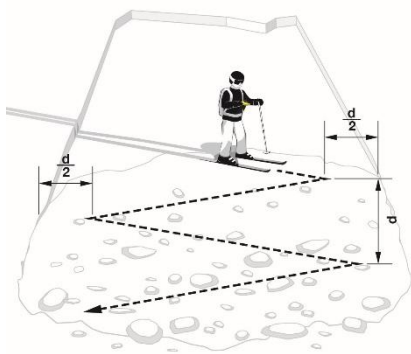
(6) Rescue



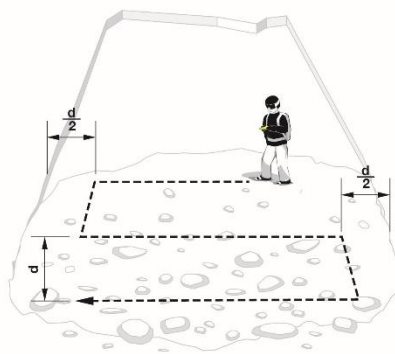
4.7.2 Signal search

Start searching in the primary search area for the initial signal detection as well as for visual/acoustic signals. The PIEPS beacon has a circular receiving range that allows a correct indication of direction and distance from the point of initial signal detection – a specific method such as turning/rotating is not necessary. All signals of the burials that are within the maximum receiving range are received simultaneously.

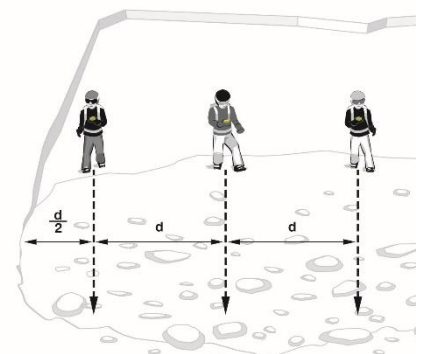
Walk the search strip width in the search area quickly. The recommended search strip width for the PIEPS beacon is 50 m. The display shows “no signal”.



One rescuer with skis
for signal search
 d = search strip width



One rescuer by foot
for signal search

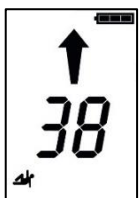


More rescuers
for signal search

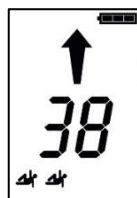
NOTICE

All participants, observers included, must switch their devices to search mode (or to standby mode)! Also follow the external interference distance recommendations!

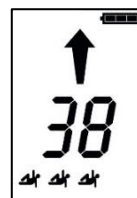
As soon as signals are received, the distance and direction to the strongest signal are shown on the display. The number of victims located within the receiving range is indicated by the number of human figures.



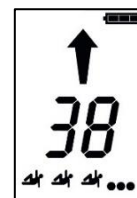
one



two



three



four or more

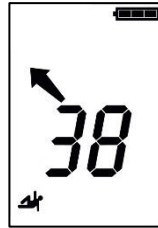
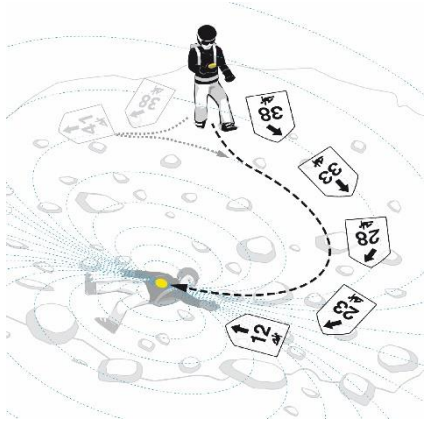
Vibra on initial signal detection

The PIEPS beacon provides additional haptic support by vibration on initial signal detection. This lets rescuers focus on the visual surface search during the signal search.

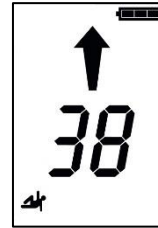


4.7.3 Coarse search

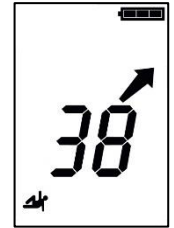
Follow the directional arrow quickly and check for a decreasing distance reading. Change the search direction by 180° in case of an increasing distance reading.



Turn left



Move straight ahead



Turn right

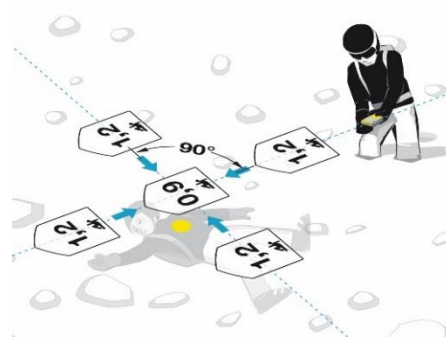
NOTICE *Work calmly and with concentration in search mode. Avoid hasty movements!*

4.7.4 Fine search

From a distance of 5 m, the search speed should be notably reduced (50 cm/s). At the same time, start working close to the surface of the snow. To prevent confusion during the fine search, the direction indication disappears below a distance of 2 m. Reduce the search speed again and find, by cross-like movements, the position of the lowest distance reading. A dynamic acoustic signal output supports the fine search: the closer the faster.



Do an accurate direction adjustment before the direction arrow disappears! You are then moving to the transmitting beacon in best coupling position and save time during the cross-like movements.



Move your beacon at a slow, steady speed of about 10 cm/s, keep it leveled close to the surface and do not rotate your device. Search along the Y axis, determine the lowest distance value, then follow along the X axis. Always move past the point of the lowest distance to verify the distance tendency. Mark the point of the lowest distance reading and start pinpointing.

4.7.5 Pinpointing

Begin at the point of the lowest distance indicated. Always probe perpendicular to the surface. Use your lower hand as a “probe guide” to ensure the probe follows a steady path. Follow a proven system until you have a hit. Communicate a hit clearly to companions. Leave the probe stuck for shoveling guidance.



NOTICE *The PIEPS iPROBE supports perfectly through an optical and acoustic hit indication within 50cm to the burial.*

4.7.6 Multiple burials | MARK function

A multiple burial is indicated clearly on the display by the number of small human figures (2G, 2H). Marking is possible from a distance reading of 5 m and is indicated by the MARK symbol (2E). Press the button MARK (1A) briefly to “hide” the localized transmitter. A successful flagging is confirmed by a frame around the human figure (2J). The display then indicates the direction/distance to the next strongest signal inside the receiving range. If there are no further signals within the receiving range the display indicates “no signal”.



prior to marking



after marking

Continuous wave indication | old-device-indication

Old analog transceivers are transmitting a continuous wave in addition to the pulse signal. To keep an impact at a minimum, it is recommended to step a few meters away after marking such a transmitter.



Signal without continuous wave



Signal with continuous wave

The PIEPS beacon identifies a continuous wave and supports visually by flashing human figures.



5. DEVICE MANAGEMENT WITH THE PIEPS APP

Bluetooth and the PIEPS APP allow a straightforward device management (e.g. software update, device configuration) and additionally provide a handy training mode.

Get the PIEPS APP (Android Play Store, iOS App Store), connect your PIEPS beacon and take advantage of all features!

NOTICE *If the PIEPS APP is already installed, be aware to use the latest version*

To activate Bluetooth (2A), press the button MARK (1A) while switching on the beacon. As soon as the Bluetooth symbol is shown on the display, the MARK button can be released.

The Bluetooth-mode is confirmed with an acoustic (2x Pieps-tone) and haptic (2x Vibra) signal.

To enable Bluetooth, press the button MARK (1A) while switching on the beacon.



Bluetooth enabled



Connection to mobile device established

⚠ DANGER *Risk of a not transmitting device due to enabled Bluetooth*
The Bluetooth mode is supposed for device management and training mode only. Never use the Bluetooth mode in avalanche terrain!

In the PIEPS APP the following settings can be made:

Feature	PIEPS MICRO BT sensor	PIEPS MICRO BT button	
Admin Lock	✓	✓	
Battery type (Alkaline/Lithium)	✓	✓	
Auto-Search-to-Send Timeout (60 s/90 s/120 s)	✓	✓	
Group check ON/OFF	✓	✓	
Group check Pro-Mode ON/OFF	✓	✓	
Send-Vibra ON/OFF	✓	✓	
Group check extended ON/OFF	✓	✓	
iPROBE support ON/OFF	✓	✓	
Reset to factory defaults	✓	✓	

Further useful features of the PIEPS APP:

- Software Updates
- Warranty extension for registered users
- Device check
- Training mode
- Practical scenarios

6. TROUBLESHOOTING, MAINTENANCE, STORAGE, DISPOSAL

6.1 TROUBLESHOOTING







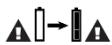
<i>Error</i>	<i>Description</i>	<i>Measure</i>
	<i>No indication on the display</i>	Check the device for physical damage. Check the battery capacity, type and polarity (+,-). Replace the batteries. Take the device to your retailer.
E0	<i>High current</i> This error disappears after the self-check.	Take the device to your retailer.
E1	<i>System configuration</i> This error remains on the display. The device is not serviceable.	Take the device to your retailer.
E2 E3 E4	<i>Transmitter or receiver or amplifier</i> The error disappears after the self-check. The device has limited functionality in send or search mode.	Repeat the self-check in an area free from interference (outdoors) and check for electronic, magnetic and metallic sources of interference. In case of a permanent error take the device to your retailer.
E5	<i>Processor</i> This error remains on the display. The device is not serviceable.	Take the device to your retailer.
E6	<i>Distance and/or direction indicator</i> This error disappears after the self-check. The device has limited functionality regarding the distance and/or direction indication.	Take the device to your retailer.
E7	<i>Proximity sensor</i> The error remains in the additional display (2B). In this case, automatic Send ⇄ Search switching is not possible; the switching must be performed manually.	Repeat the self-check and ensure that the sensor area is not covered during the self-check. Manual Send ⇄ Search switching is performed by pressing the MARK button for 3 seconds. Take the device to your retailer.
	Automatic Send ⇄ Search switching does not take place.	Ensure that the sensor is not covered. Check the display glass and especially the sensor area for soiling or deposits (large snowflakes), clean the display glass as necessary.
E8	<i>Accelerometer</i> This error disappears after the self-check. The device has limited functionality: Auto-Search-to-Send is not possible. Group check pro-mode is not possible.	Take the device to your retailer.
E9	<i>Bluetooth</i> Bluetooth activation and/or connection not possible. The avalanche beacon function is working. Is not checked during the self-check, occurs only during Bluetooth activation.	Retry to activate the Bluetooth mode. In case of a permanent error take the device to your retailer.

6.2 BATTERY REPLACEMENT

Change the batteries as soon as the battery capacity indication (2C) shows an empty battery. Always change all three batteries at once! To do so, open the battery compartment (1D, 1F) and be sure to insert the new batteries the right way around. For battery disposal, follow the applicable regulations in your country.

- ⚠ DANGER** *Risk of explosion from incorrectly used batteries.*
Risk of incorrect battery capacity indication.
Only use batteries of type "Alkaline (AA) LR6 1.5 V or Lithium (AA) FR6 1.5V"!
The use of Lithium batteries must be confirmed in the PIEPS APP!

Battery lifetime	Alkaline (h SEND)	Lithium (h SEND)
PIEPS MICRO BT sensor	200 h	350 h
PIEPS MICRO BT button/RACE	200 h	350 h

	3/3 full	100% - 66% (h SEND)	✓
	2/3 full	66% - 33% (h SEND)	✓
	1/3 full	33% (h SEND) - 20 h SEND	✓
	empty	20 h SEND (+10° C, 50° F) + 1 h SEARCH (-10° C, 14° F)	
	empty, blinking	Final reserve, device can shut down at any time	

6.3 CLEANING

Use a damp cloth without cleaning agent to clean the device.

- NOTICE** *Flowing water, steam or cleaning agent must not be used to clean the device. To do so could impede operation of the device.*



6.4 STORAGE

Store the device in a dry room at room temperature.



- NOTICE** *If the device is not used for extended periods of time (summer months), it is recommended to remove the batteries from the battery compartment. The warranty does not cover damage caused by leaking batteries.*

- ⚠ CAUTION** *Risk of device malfunction or damage due to extreme temperatures*
Do not expose the device to extreme temperatures outside the operating limits!
Store the device protected from direct sunlight! Extreme temperatures can result in malfunction or damage!

6.5 DISPOSAL

NOTICE

Please note that the device is an electronic device. It cannot therefore be disposed by public waste management companies. Dispose of the device in accordance with the law in your country.



7. CONFORMITY

EUROPE

Hereby, Pieps GmbH declares that the radio equipment type PIEPS MICRO BT sensor/button/RACE is in compliance with Directive 2014/53/EU. The full text of the EU declaration of conformity is available at the following internet address: www.pieps.com/conformity

USA/CANADA

Manufacturer: Pieps GmbH | Type/Model: MICRO BT sensor/button/RACE
FCC ID: REMDSP03 | IC: 7262A-DSP03

USA: FCC Notice, Cautions and Statement

This device complies with the Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference that may cause undesired operation.

This equipment has been tested and found to comply with the limits for Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residual installation. This equipment generates, uses and can radiate frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician for help

To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines. This equipment has very low levels of RF energy that are deemed to comply without testing of specific absorption ratio (SAR).

Canada: IC Notice

This device complies with Industry Canada's licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference; and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment and meets RSS-102 of the IC radio frequency (RF) Exposure rules. This equipment has very low levels of RF energy that are deemed to comply without testing of specific absorption ratio (SAR).