



Barrier-Free User Manual

naviBelt

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Use of this document

This document has been prepared with regard to the use of screen readers. It also contains enlarged text.

Under the following heading you will find a table of contents of clickable links that can guide you through this document. Some chapters, such as "Functions" and "Description of the tactile signal patterns" are intended as a reference work in which you can find solutions to frequently asked questions and ambiguities as quickly as possible using the headings.

The number of illustrations was reduced in this version of the instructions, the remaining ones provided with alternative texts and otherwise descriptions were introduced as replacements.

Please contact us with feedback on this document at feedback@feelspace.de.

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About this manual

This manual explains the device's features and uses.

- Read this manual thoroughly before using the device to ensure that it is used safely and appropriately.
- The illustrations shown here can differ from the appearance of the actual product.
- feelSpace GmbH is not liable for software products of third parties that connect to the belt.

Safety information and warnings

Handling the product or the battery built into it

- This product contains an in-built battery pack (Lithium ion). Batteries may cause fire or chemical burns if not handled properly.
- Do not allow the batteries to run out of charge and use it regularly. Avoid short circuits. The batteries service life depends on the way it is used. Unusable batteries must be disposed of in accordance with local regulations. If no such regulations apply, then dispose of the device in a special container for electrical equipment.
- Reconstructing or altering the product will affect product safety. Caution: risk of injury.
- Never open up the product without authorization. Never attempt to repair it yourself.
- Handle the product with care. It can be damaged by any impact, even by being dropped from a low height.
- Never continue to use the product when the batteries are damaged.
- Pay attention while charging the batteries. There is a Danger of overheating and fire if a short circuit occurs or if the internal Li-ion battery is damaged mechanically.
- Keep the belt away from moisture and extreme heat.
- Never allow the product to come into contact with fire. There is a risk of explosion.
- Do not expose the product to direct sunlight (e.g. in a vehicle).
- Never immerse the product in water or other liquids.
- Do not put any needles or other sharp objects into the product.
- Do not strain the product by twisting or knotting the fabric.

For whom the naviBelt is not suitable

- Do not use during pregnancy
- Do not use on children under 3 years of age.
- Do not use in conjunction with cardiac pacemakers.

Information about the app

- You can download the feelSpace app from the App Store (for iPhones) and Google Play Store (for Android-Smartphones).
- Read the terms of use carefully, you will find them within the app under Settings.
- The naviBelt can never replace good travel, orientation, or mobility skills, rather providing additional information to help the user apply these skills. Obstacles are not indicated by this application. Road conditions, traffic regulations and road signs should always take precedence.

Delivery content

1x naviBelt
1x charger
1x user manual
1x transportation bag

Use of the naviBelt

How to wear

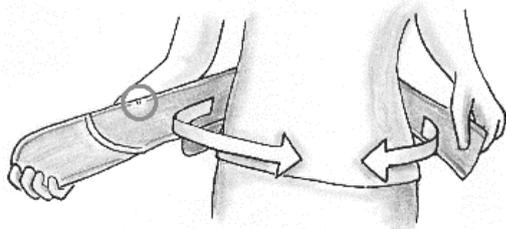


Figure 1: Correct positioning of the naviBelt

- Charge the naviBelt before the first usage (see [Section “Charging”](#)).
- Put the belt around your waist such that the fastener is to your front left, the belt buttons are to your front right. The green mark on the inside of the belt should be placed at the level of your navel. Recommendation: Do not wear the naviBelt directly on bare skin, but over a light layer of fabric (e.g. a t-shirt).
- Make sure that you do not place any metallic or magnetic parts (e.g. magnetic phone cover) in the immediate vicinity of the control unit which is in the pocket of the belt. Otherwise compass-related false readings may occur during navigation.
- The belt can be controlled via the control unit in the pocket of the belt using 4 buttons. Switch on the belt with the ON/OFF button. If you wear the belt around your stomach, this button is located at the bottom right. The positions of the keys can be felt via a small bump in the middle of each key. Press the button for about 1 second.
- After switching on, each of the tactile units in the belt is activated one after the other, so that the vibration signal moves twice clockwise around the body axis. The belt is automatically in the *ready mode*. The *ready mode* is signaled by a short vibration on the sides of the body, which is repeated at intervals of about 4 seconds.
- Now you can use the buttons on the belt to set various functions (see [section “Functions”](#)), or you can establish a Bluetooth connection to your smartphone and use the naviBelt in conjunction with the app (see [section “Use with the feelSpace app”](#)).

Functions

Description of the buttons and their position

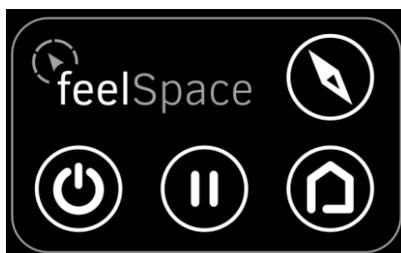


Figure 2: Position of the buttons on the control unit.

You can call up various functions using the 4 buttons on the control unit of the naviBelt. The control unit is placed in the belt pocket. The buttons can be felt and pressed through the fabric. The following descriptions are based on the orientation of the buttons while the belt is correctly

positioned around the abdomen. The buttons are arranged in two rows. There is only one button in the upper row, on the left edge of the control unit. This key is named 'Compass' and has the symbol of a compass needle.

The other three buttons in the bottom row are named as follows: On the left and directly below the Compass button is the Favorite button with the symbol of a house. At the bottom in the middle is the pause button with the corresponding symbol. And on the right edge of the control is the On/Off button.

Function: Switch-on

Press this button for about 1 second to turn on the belt. When switched on, it vibrates continuously left and right for a short time, then each vibration unit is activated clockwise one after the other. The signal travels twice around the body. The naviBelt is then in *ready mode*, which is indicated by a recurring vibration pulse on the sides.

Function: Switch-off

Press this button for 1 second to turn off the belt. When switching off, 4 units vibrate simultaneously (front, rear, sides) with decreasing intensity until the belt is completely off.

Function: Battery charge level

To check the battery charge level, press the On/Off button briefly (about 1 second) with the belt switched on. Depending on the charge level, a vibration signal moves clockwise around the abdomen completely or partially and ends with a double vibration pulse. e.g. full charge: signal moves completely around the abdomen, half charge: signal moves only up to half around the abdomen, etc.

Function: Pause

A short press of the pause button pauses the vibration signal. Press the pause button again to end the pause.

Function: Favorite

Briefly pressing the Favorite button starts or ends navigation to a saved location. This function can only be used if a Bluetooth connection to the smartphone exists and a favorite has been determined via the feelSpace app. Otherwise, there is a short special tactile warning signal ([see section “Description of the tactile signals”](#)).

Function: Compass

Briefly pressing the compass button starts or ends the compass mode. The vibration unit in the belt vibrates and points in the direction of the magnetic north.

Function: Calibration

Press and hold the compass button for ~5 seconds until the belt pulsates. Follow the calibration instructions ([see section “Calibration”](#)). As calibration progresses, the pulsing feedback becomes faster until it is finally continuous and the belt restarts. Calibration can be cancelled by pressing any key.

Function: Help for road crossing

To cross a road, align yourself at right angles to it and press the compass button twice in quick succession. This will cause the belt to vibrate pulsating on your belly. Move across the road so that the signal remains on the belly. If you deviate from the direct path and walk diagonally across the road, you will recognize this by the signal drifting sideways. After crossing the road, select the navigation mode of your choice again. (This function is available in naviBelts sold from 2019 onwards)

Function: Increase intensity

You can change the intensity of the vibration in pause mode. First, press the pause button.

Now, press the compass button. If you hold down the key, the intensity increases continuously until the maximum is reached. If you want to increase the intensity step by step, press the key repeatedly short (small steps). A tactile feedback on the sides informs you about the selected

intensity. A double pulse on the sides indicates that the maximum is reached.

Press the pause button again to exit the pause mode.

Function: Decrease intensity

You can change the intensity of the vibration in pause mode. First, press the pause button.

Now, press the Favorite button. If you hold down the button, the intensity decreases continuously until the minimum is reached. If you want to decrease the intensity step by step, press the key repeatedly short (small steps). A tactile feedback on the sides informs you about the selected intensity. A double pulse on the sides indicates that the minimum is reached.

Press the pause button again to exit the pause mode.

Use with the feelSpace app

Requirements for your smartphone

To use the feelSpace app for Android, you need a smartphone with Android operating system version 4.0.3 or higher. To use the feelSpace app for iOS, you need an iPhone with an iOS version 9.3 or higher.

You need an Internet connection, GPS localization and Bluetooth

Download feelSpace App

The feelSpace app can be accessed via the Play-Store (for Android systems) or via the App Store (iOS systems). Scan the QR code below.

QR code for iPhone:



QR code for Android



Step-by-step explanation of the app

- A. Connect your smartphone to the Internet, activate GPS tracking and activate Bluetooth via the system settings
- B. Open the feelSpace app on your smartphone. The appearance of the app screens varies depending on the operating system.
- C. connect belt

For the first connection it is necessary to set the belt to pairing mode. To do this, press the Favorite button on the belt for 3 seconds. You can recognize the pairing mode by the fact that the belt vibrates briefly and repeatedly. Within 1 minute you have the possibility to pair the belt via the app.

- a. click on "connect belt" in the settings (iPhone). Click on "Connect Belt" in the menu (Android).
- b. or press the Play button after entering a destination to start navigation. Confirm in the pop-up window that you want to connect the belt.

Once you are connected, the *ready signal* changes to a recurrent double pulse on the sides of the body. That's how you know you're connected.

- D. Select a destination. You have 2 options:
 - a. Click on the map. Zoom to your current position by clicking on the icon in the top right corner of the map view. Using a reduction or enlargement gesture with thumb and forefinger, you can zoom in and out and call up another section of the map by wiping over the map. Select your destination and touch the map there.

- b. Enter an address or coordinates. For iPhone, click on "Destination" in the bar at the bottom of the screen. For Android, click on the magnifying glass at the top of the bar.
- E. start a navigation. If a destination has been set, press the Play button at the bottom of the screen to start navigation to the destination. The belt signals when you have arrived by first vibrating alternately at the front and rear and then alternately at the sides. Reaching the target is signaled as soon as you reach the destination radius. Standard setting for destination radius: 5 m
- F. Pause, stop or delete a destination by using the buttons in the bar at the bottom of the screen.
- G. Set a Favorite. You can save a favorite by selecting a desired destination and then pressing the star at the bottom left of the map view. If you want to save your current position as a favorite, click on the icon at the top right of the map view (star with plus sign) for iPhone: and on the button "Save current location as favorite" in the menu for Android. By setting the current destination as a favorite, you can start and stop the navigation directly with the "Favorite"-button on the belt.
- H. Start navigation to favorite. Once a favorite has been saved and the belt is connected to your smartphone, navigation to it can be started via the app or the Favorite button on the belt.
- I. Delete a favorite. Click on the star at the bottom left. Confirm the deletion in the window that pops up.
- J. In the settings you can switch on or off the option to display a localization track graphically. The localization track indicates where you've been walking. In the settings you can also adjust the intensity of the vibration, check the level of charge of the naviBelt, see the current app version and the naviBelt firmware version.
- K. In the section information you can learn more about the app and how to use it.
- L. Note: The app will be extended in the future and its appearance may change. Currently, it displays the beeline to the destination for navigation. The updated user manual can then be found within the app under Information

Charging

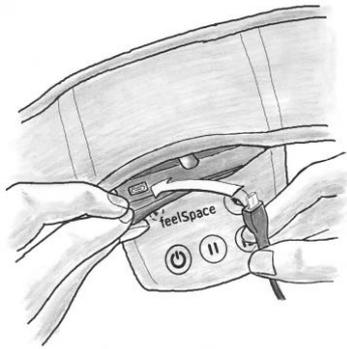


Figure 3: Charging the naviBelt using the micro-USB charging cable

Charge the naviBelt before the first use. Use the supplied charger. Insert the micro-USB plug of the charger into the micro-USB socket at the top of the control unit. The control unit is in the pocket of the belt. You can reach the socket from the outside through an opening in the pocket. Bend up the pocket a little so that you can feel the upper edge of the control unit. The micro-USB socket is located on the side of the on/off button. To connect the charging cable properly to the belt, follow the embossing on the USB connector. This embossing should point in the direction of the buttons so that the plug has the correct orientation for insertion.

When the belt is switched on during the charging process, it gives acoustic feedback. When fully charged, you hear a sequence of 3 short beeps in ascending pitch. If you wish to be notified, turn the belt on during charging and press the pause button to mute ready signal, this reduces the power consumption during the charging process.

Note on the battery:

- The battery is only charged when the temperature is in the range between 5°C and 40°C.
- Charging time depends on the charging current supplied by a USB charger or your PC. When the battery is completely discharged, the charging time is approx. 1.25 hours via the charger (naviBelt before 2019: approx.: 3.5h).
- Note that you store the naviBelt when charging it in such a way that no heat accumulation is generated around the control element.
- Battery life varies depending on the type of use. A new naviBelt can be operated in navigation mode with the app for about 15 hours, however, with highest intensity of the vibration at least 9h.
- Avoid deep discharge. Deep discharge puts a strain on the battery and can thus reduce its service life.

If the battery charge level drops below 3% during use of the naviBelt, it gives an acoustic signal of 3 consecutive beeps of the same pitch. This signal repeats every 3 minutes. If this is the case, you should charge the naviBelt. As soon as the charge level falls below 1%, an acoustic signal of 3 consecutive beeps with decreasing pitch sounds. The naviBelt then switches off automatically.

Calibration

The naviBelt has already been calibrated at the factory. However, if the compass display is not reliable (Low compass accuracy), the naviBelt informs you with a special tactile signal that starts as soon as you want to start the compass function or a navigation. The signal consists of three slow consecutive vibrating pulses in four places: front, rear and sides. This signal repeats itself at intervals of 10 seconds.

The signal may occur temporarily, which means that you are in an environment with electromagnetic interference (e.g. elevator, bridge, metal doors). As soon as you are out of the area with interference, the signal stops. A calibration is not necessary in this case. However, if the signal remains constant, a calibration is necessary.

To calibrate the naviBelt, do not wear it around your stomach, but take it in your hands. Press the compass button on the belt for about 5 seconds until there is a recurring pulsing tactile signal. Move the belt in front of your body in a shape of the number "eight" (vertical and horizontal eights). With the progress of calibration, the signal becomes faster until it is finally continuous. Once calibration is complete, the belt restarts automatically. The signals follow as when switching on the belt.

If calibration is not successful or the calibration process is aborted by pressing any key, a tactile warning signal and finally the standby signal are output.

Description of the tactile signals

Switch-on signal

It vibrates continuously left and right for a short time, then each vibration unit is activated clockwise one after the other. The signal travels twice around the body.

Ready signal

There are 2 types of the ready signal.

1. Not connected to a smartphone:
Recurring simple short vibration pulse which is simultaneously felt on the sides.
2. Connected to a smartphone
Recurring double short vibration pulse which is simultaneously felt on the sides.

Arrival signal

Recurrent signal: first alternately front and rear, then alternately on the sides.

Direction indication

Continuous vibration of one vibration unit in direction of the north, a destination or a route.

Low compass accuracy

The signal indicating low compass accuracy consists of three rapid successive vibration pulses at 2 locations: left and right. This signal repeats itself at intervals of 7 seconds.

Calibration

The signal during calibration is a recurring vibration pulse. As calibration progresses, the frequency of the pulses increases until the signal is finally continuous. Once calibration is complete, the belt restarts. The signals follow as when switching on the belt

Warning signal

Around the positions: front, rear, right and left, a vibration signal moves quickly alternately left and right at the same time. The interpretation of the signal depends on the context of its occurrence.

- During a navigation it means poor GPS reception or poor accuracy of direction indication. The direction indication may be distorted and therefore incorrect. Please pay attention to your surroundings when navigating!
- When clicking on the Favorite button on the belt: If no favorite has been set or if there is no connection to the smartphone.
- Abortion of the calibration procedure

Switch-off signal

4 units vibrate simultaneously (front, rear, sides) with decreasing intensity until the belt is completely off.

Battery charge level

Depending on the charge level, a vibration signal moves clockwise around the abdomen completely or partially and ends with a double vibration pulse. e.g. full charge: signal moves completely around the abdomen, half charge: signal moves only up to half around the abdomen, etc.

Care instructions

Your naviBelt is a high-tech device and should be handled with care. Follow the care instructions to ensure maximum service life.

Cleaning

Textile outer cover is washable: Wash the outer cover of the belt occasionally if you use the naviBelt frequently. To do this, separate the textile outer cover from the technical tube together with the control unit! Open the textile outer cover using the Velcro fastener on the inside. Fold the ends of the outer cover and release the technical tube, which is

attached to the outer cover with Velcro. Carefully pull the control unit from the inside out of the pocket.

Note:

- Hand wash or gentle wash at 30°C without spinning
- wash without fabric softener
- Close Velcro fasteners to prevent damage to other linen.
- wash with similar colors
- not suitable for tumble dryers
- Iron at low heat (1 dot)
- Do not bleach, do not dry clean

Technical tube is NOT washable: The technical tube must be protected from moisture. It must not be washed, bleached, cleaned or ironed!

Control unit: If you want to remove dirt from the control unit, clean it with a slightly moistened cloth. Never use alcohol or abrasive materials such as steel wool or chemical cleaning agents.

Storage

Store the naviBelt in a cool and dry place. Do not expose the naviBelt to strong direct sunlight or heat for an extended period of time. High temperatures can shorten the life of electronic devices, damage the battery and deform or melt plastic parts. Occasionally charge the naviBelt if it is stored for a longer period of time to avoid deep discharge. A deep discharge strains the battery and can thus reduce its service life.

If the textile of the naviBelt is wet after use (e.g. by sweat), please separate the outer cover from the technical tube so that the textiles can dry well and be ventilated.

Troubleshooting

Problem: I can't get a Bluetooth connection.

Cause: Bluetooth is not turned on your phone.

Troubleshooting:

Check that Bluetooth is turned on in your phone's system settings. If a connection attempt fails, try restarting your phone and belt.

Problem: The button on the screen of the app is missing to zoom the map to my location.

Cause: The location services are not activated.

Troubleshooting: Enable Site Services in your phone's system settings.

Problem: I can't start the navigation with the Favorite button on my belt, I get a strange, short feedback signal instead.

Cause: You have not yet saved a favorite or you are not connected via the app.

Troubleshooting: Check if you are connected to the app and if a favorite has been determined. If not, select a location and save it as a favorite.

Problem: I can't start navigation in the app.

Cause1: The location services are not activated.

Cause 2: There is no GPS reception, e.g. because you are not in the open air.

Troubleshooting: If the weather is the reason, just try to wait a little longer. At high speed of movement, localization takes longer than at rest, stop and wait a little.

Problem: I am mislocated in the app.

Cause: You have poor GPS reception, e.g. due to the weather and/or their high speed of movement.

Troubleshooting: If the weather is the reason, just try to wait a little longer. At high speed of movement, localization takes longer than at rest, stop and wait a little.

Problem: The map is not displayed in the app or does not load.

Cause: You have no or only a bad internet connection.

Troubleshooting: Try to get a better internet connection.

Problem: Despite calibration the belt still gives the signal for bad compass accuracy.

Cause: There are magnetic components or metals in your clothing near the belt control unit, e.g. a smartphone in a case with magnetic closure in your jacket pocket.

Troubleshooting: Check that there are no magnets, metals or electrical devices in your clothing near the belt control. Try to keep it away from the control, e.g. by finding another place for it, or turn the belt a little around your stomach.

If you have a problem that is not listed here, please contact us.

Reclamation

The feelSpace naviBelt was developed and manufactured with great care. If there is anything to complain about, you should never open and repair it on your own authority. Please send an e-mail to info@feelspace.de with the subject "Reclamation naviBelt" and we will clarify your case.

Disposal of the device

In the interest of environmental protection, the device must not be disposed of with household waste at the end of its service life. Dispose of the device at the appropriate collection points in your country.

Dispose of the feelSpace naviBelt in accordance with the Waste Electrical and Electronic Equipment Directive 2002/96/EC-WEEE. If you have any questions, please contact the local authority responsible for disposal.