



MANUAL

User Manual | Biofeedback-training | eSense-App | Finger Clip

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Delivery contents

- Mindfield® eSense Temperature Sensor
- 1 Velcro electrode
- eSense app from Mindfield (from the App Store, Google Play or Amazon Appstore)
- Detailed instruction for efficient biofeedback training



Delivery contents eSense Temperature

News

In addition to the usual bug fixes and small improvements, we have once again improved the design and navigation with the new version 5.1.0 of the eSense app. This means that the app runs even faster and smoother **now**.

Another new feature is the extended **view** of the archive with which you can track and evaluate your measurements over a longer **period** even better.

We have also optimized the cloud view. This means that the cloud functions can be used even more effectively.

However, you still have the option of using the app as usual with all previous functions without creating an account.

Skin temperature in general

The temperature at the surface of the skin changes according to blood circulation through body tissue. The small blood vessels (arterioles) crossing through the tissue are surrounded by fibers of smooth muscle, which are controlled by the sympathetic nervous system.

In a state of increased exertion, excitement and stress, these muscle fibers contract, causing a stenosis of vasculature. This leads to a reduction of skin temperature, since blood circulation through the tissue is reduced. In contrast, in a state of relaxation, the musculature is also bound to relax, causing the vasculature to expand. Hence, the skin temperature rises.

Mental stress often leads to a lower peripheral perfusion and a decrease of skin temperature at the hands, caused by increased activity of the sympathetic nervous system. This has a sense of evolution because tension and anxiety originally served the preparation for an impending flight or an attack. As a result, as much blood as possible is available in the working muscles (upper arms, thighs and torso), which is achieved by the narrowing of vessels in the hands, feet and forearms.

For example, think of a speech that you gave in front of an audience or a job interview panel. If you were anxious in those situations, can you remember having cold (and sweaty) hands?

This physiological stress reaction can be useless or even harmful in many contexts in modern society (e. g. mental exertion, worries, psychosocial stress, and anxiety disorder). A conscious control of physiological stress can help you react in a more relaxed and efficient manner to many situations. Biofeedback is an established way to learn this kind of control!

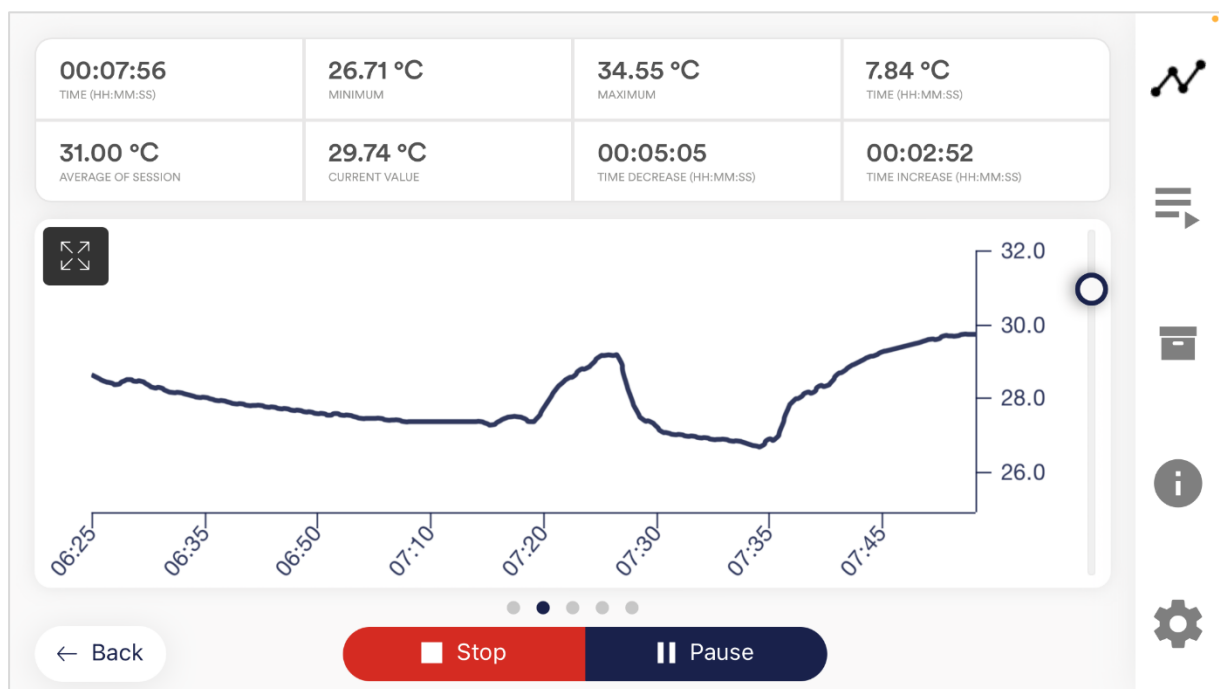
Skin temperature and biofeedback training

To reduce stress and its vegetative symptoms, biofeedback-training can be conducted by striving for a **rise** of the skin temperature.

Biofeedback with skin temperature is mainly applied in relaxation exercises. It's easy to handle and learn. Experience with this technique shows a high rate of success and improvement of subjective well-being. In the therapeutic field, skin temperature biofeedback is often used in migraine and chronic pain. If you suffer from a serious disorder or medical condition, always consult a professional physician or therapist, and

do not attempt to treat yourself. Biofeedback training is not an officially recognized medical procedure. Hence the eSense Temperature is not a medical device and may only be used for stress reduction training.

A particularly easy and effective biofeedback method is hand warming training. It works with the eSense Temperature sensor attached to a finger, or simply held between the thumb and index fingers. You will learn through direct feedback to intentionally raise the temperature of your fingers, thus increasing perfusion in your hands. The biological temperature sensors in our hands give us only an inaccurate impression of our skin temperature. We can just roughly decide between warm, cool, cold and so on. The real-time feedback with the precise eSense Sensor will give you much more precise information on the perfusion and temperature of your hands, enabling you to learn conscious control of these parameters and your relaxed well-being.



Example measurement curve eSense temperature with peaks in temperature because of several stressors and relaxation exercises

Hand warming training aims to show a person their skin temperature and help them get direct control over the blood circulation in their outer limbs.

Biofeedback training consists of four training stages. For the first training, schedule about 60 to 90 minutes of free time in which you can conduct the training undisturbed and at a stretch.

It must also be differentiated between different types of stress. There is “bad stress,” distress, and there is “good stress,” eustress. You need to ask yourself if you are stressed because you feel overwhelmed and are angry about something or because you are upset. Or are you “stressed” because you are full of drive and are excited? In both cases, the eSense Skin Response shows elevated values, but in the first case only, this is to be judged negatively. In the second case, you can simply enjoy and use the active or euphoric state.

Preparation and start of the app

Create the conditions needed for a successful training:

- find a quiet room (mobile phone etc. switched off)
- appropriate temperature of 20-22° C (68-72° F)
- convenient seating
- comfortable clothing

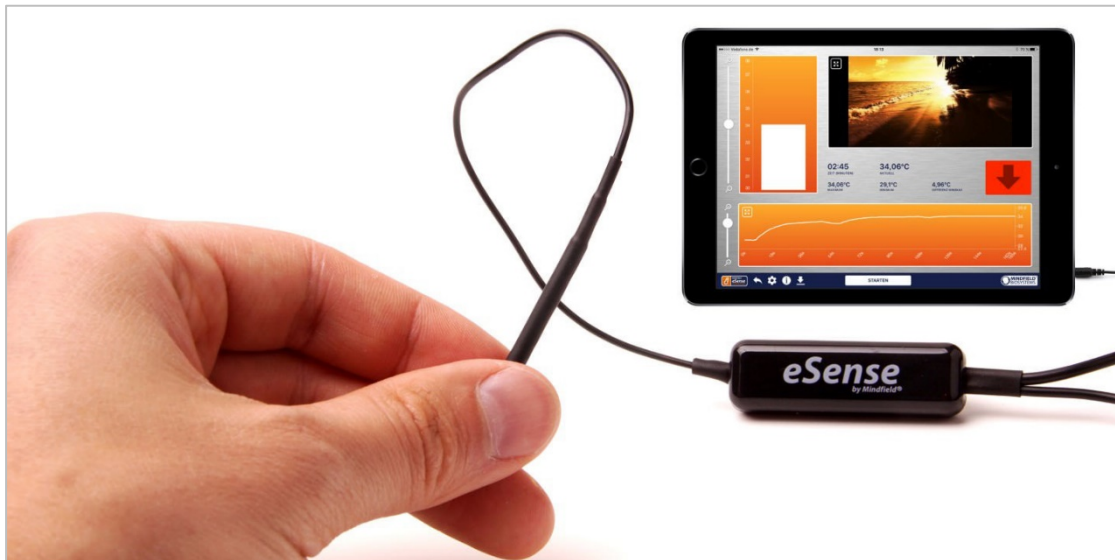
As skin temperature depends also on ambient temperature, you should try to perform each training session **under similar ambient conditions**.

You should get accustomed to the ambient temperature for at least five minutes (acclimatization), letting the training start while your body is in a relaxed and constant state. This phase of acclimatization can already raise your hand temperature by several degrees.

In comparison with other biofeedback techniques, you will **need fewer sessions** for a reliable success. 6-10 sessions should be sufficient. To keep focused throughout the entire session, you should limit each session's length to about 30 minutes. If you start feeling tired while training, you should shorten your sessions and practice more often instead.

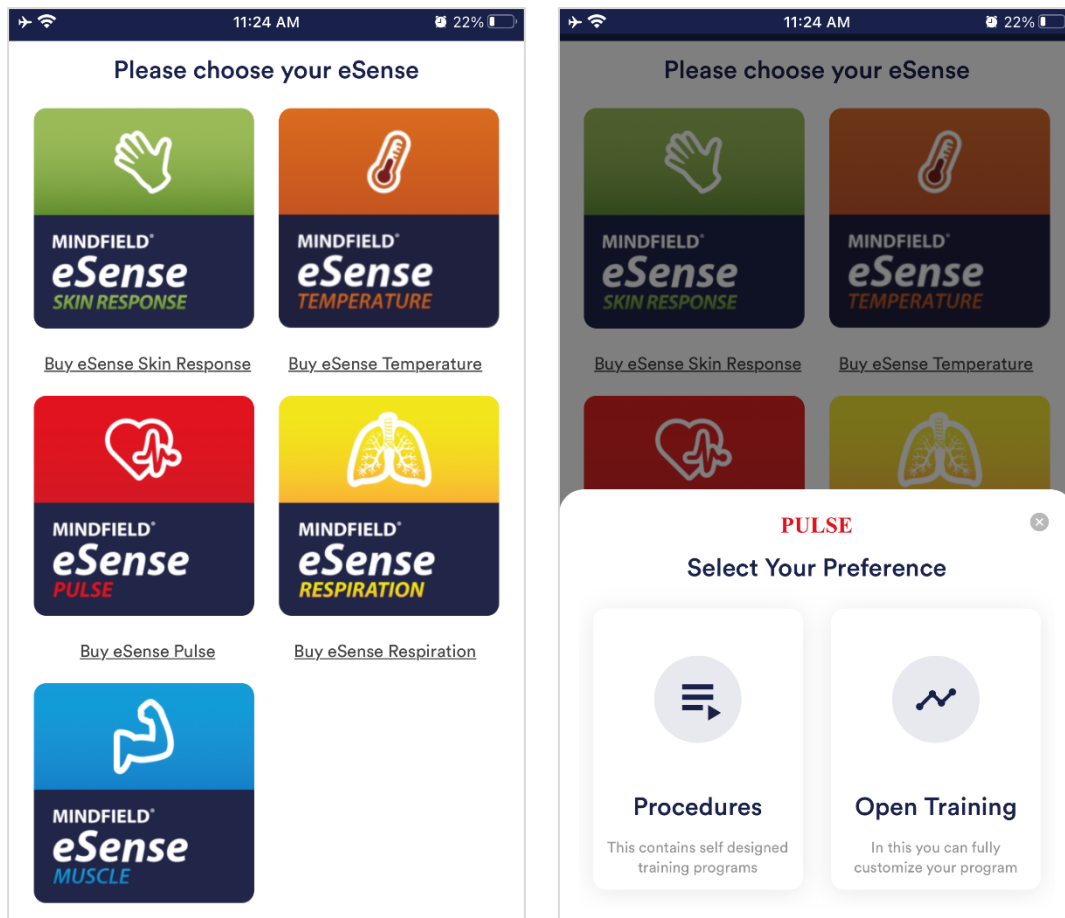
Fixation of the sensor

Use the accompanying tape (or a fabric tape of your choice, e.g. Leukoplast™) to attach the temperature sensor to your index or middle finger. Plastic tape works as well, although it's less comfortable because it's airtight and can make your fingers perspire.



eSense Temperature in use with a tablet

The next step is to start the app. At the beginning you can choose between a free training and a procedure. We recommend that you start with a procedure. We present you both below.

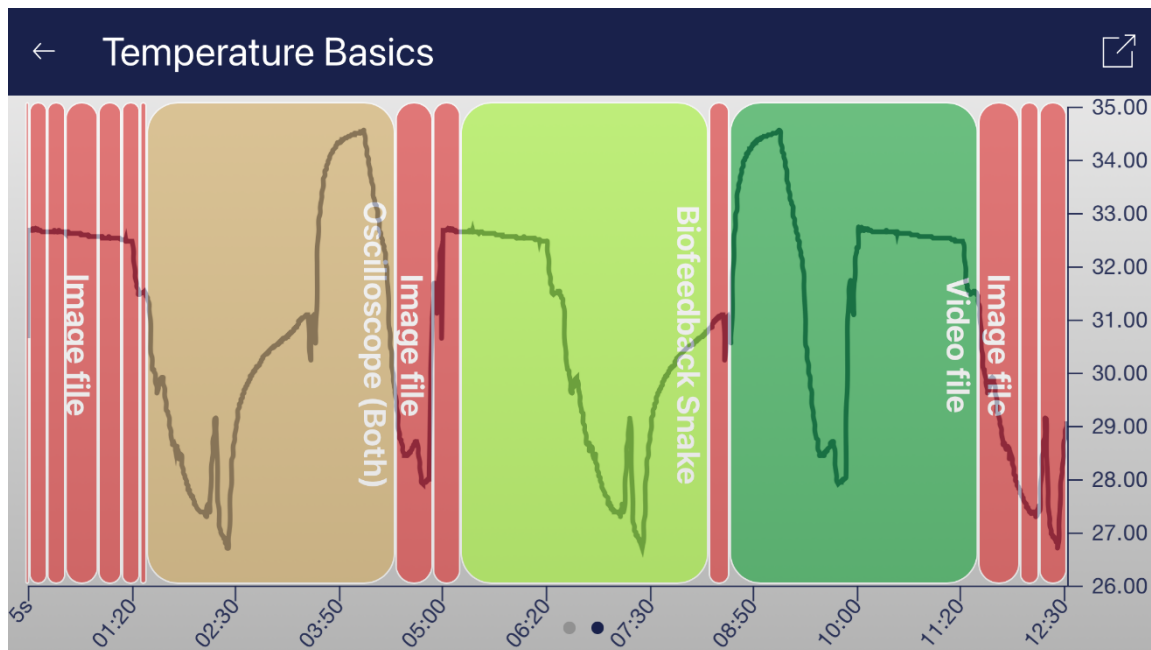


Choose between procedure or open training after starting the app

Procedures

A procedure consists of several assembled modules. With this new feature, you can build the perfect individual relaxation guide, a stress test, pre-defined biofeedback training or use it for research.

There are many possibilities. During a procedure, your skin response or temperature (depending on the eSense sensor you have) is recorded, and after the procedure, you see your results for each module and in total.



Overview after a procedure

We suggest you **test the demo-procedures** which are included in the app. Those will give you a guided overview over the different modules and functions of the procedures.

The included procedures are also protected by a password in order that those can't be edited or deleted by accident. You can any time create a copy of those procedures without a password and change it as you wish.

We also explain in detail how you can create and edit your own procedures in the chapter procedures settings.

Open Training

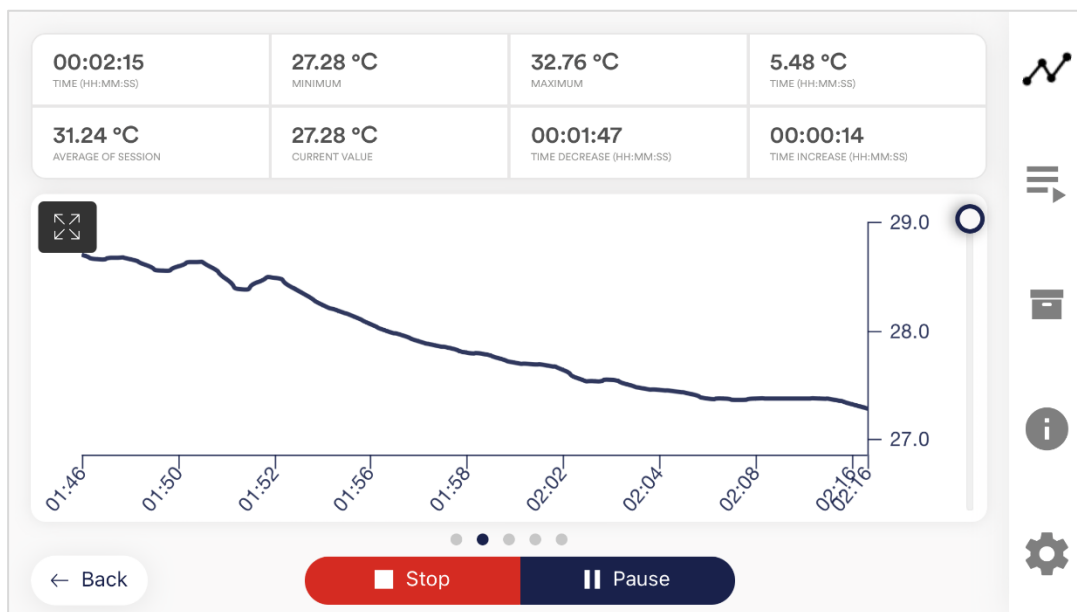
As a second option you can also conduct an open training. This is compared to the procedures a bit more complex. We therefore explain a typical open training session which consists of 4 training phases.

Preparation and start

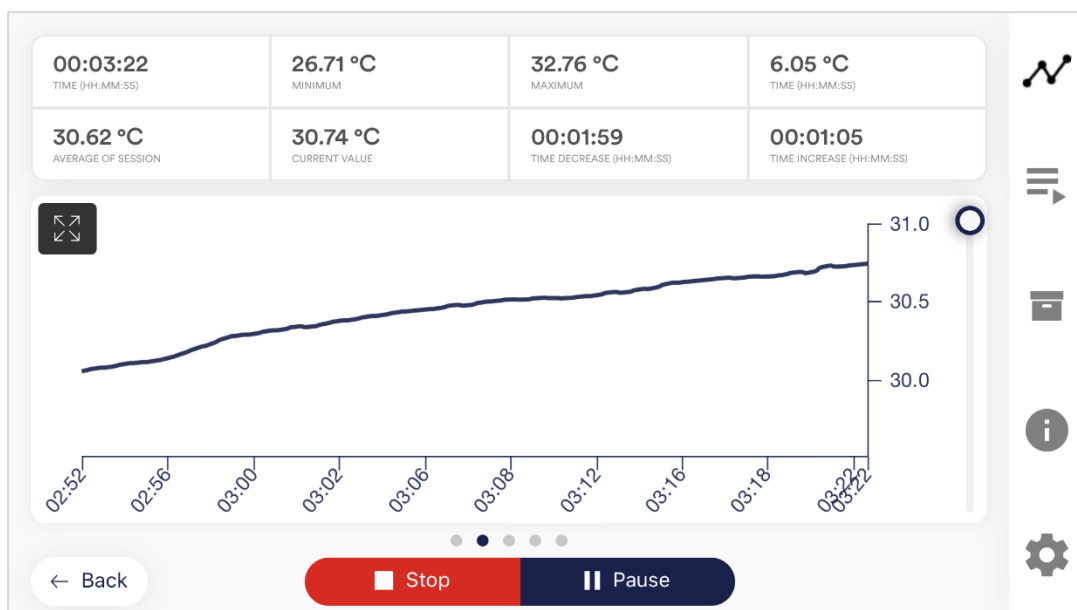
1. Follow the first steps of preparation from the previous chapter and choose an open training in the selection screen after starting the app
2. Tap on Start and have a first look at the measured values

First stage (observe and experiment; determine your initial status)

1. You should record your baseline state for 2-3 minutes at the beginning of each session, letting the sensor temperature adapt to your finger. Sit upright and comfortably, and do NOT watch the temperature but simply let the device measure. The temperature should reach a constant level for the actual training to begin.
2. In your first session, take ten minutes and try to relax. How you do this is up to your personal preferences and possibilities. Do NOT watch the temperature in the app! Training is about measuring whether relaxation already leads to a higher temperature in yourself.
3. Now look at the measured values and whether you have already caused an increase in temperature by relaxing. Were there sections of rising values? Did the level remain constant? Or does the curve drop slowly during the measurement? How do you rate your ability to relax during the measurement? You may already be able to determine a relationship between the curve and the tension or relaxation you are feeling. Regardless of whether you've succeeded, familiarize yourself with the feedback in the app. Observe the measured values and test whether you are able to influence the temperature at will. After that, the first training phase is over.



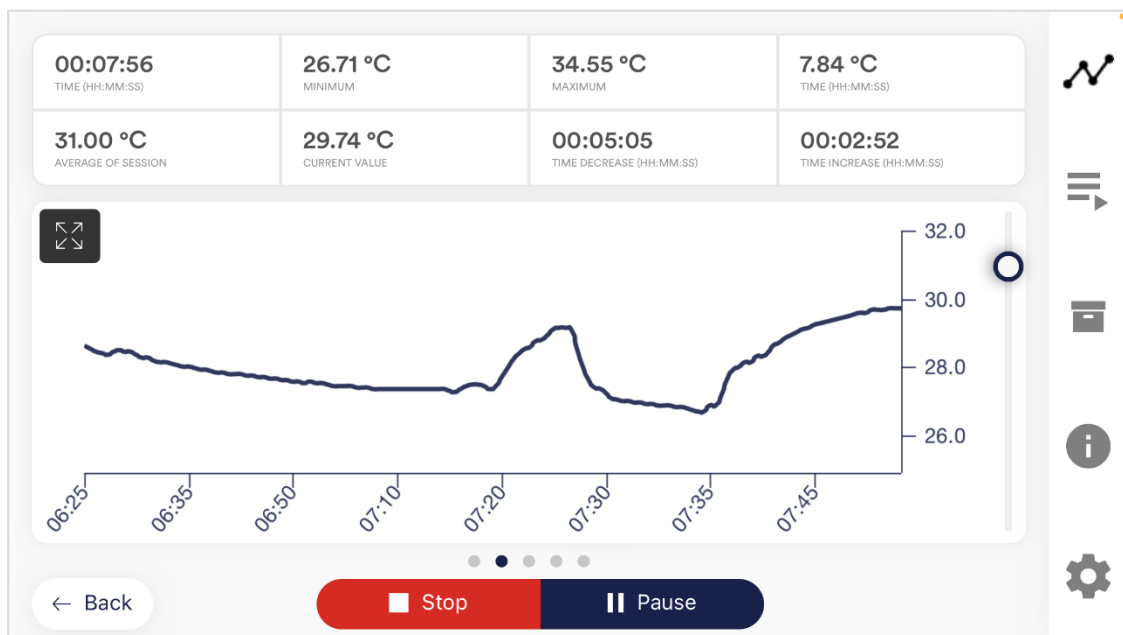
Example for a situation with rising stress; the temperature is falling



Example for a resting phase with rising relaxation; the temperature rises

4. This is your initial training state. Of course, the day also plays a role here; it may make a difference whether you are measuring after a stressful working day (or even at work) or at the end of a relaxing weekend. **Use the corresponding function of the app to export this baseline as a CSV file.**

You can do this by selecting the measurement in the archive. This will allow you to access your baseline later (in addition to the archive) by other tools (such as Excel).



Example of a measurement curve

Before taking another measurement, try to pay attention to the daily activities during which you are more likely to have hot or cold hands. These observations may be useful later in further sessions.

Second stage (biofeedback training with the temperature feedback)

1. The second stage consists of multiple sessions. These sessions should always follow the following scheme. Start every session with a 2-3-minute baseline measurement WITHOUT watching the values to reach a steady state.
2. Now you can start to train conscious relaxation, using the feedback signal. Watch the temperature values while relaxing and try to find ways to bring them up. It can be helpful to imagine yourself lying in the sun, relaxing in a sauna, or putting your hands into warm water. You can also work with autosuggestion techniques, telling yourself sentences like, "My left hand feels warm...it feels even warmer now..." Feel free to experiment.
3. As with every activity, regular practice is the key to success. You should be able to raise your skin temperature by several degrees, unless your baseline is already at 33-34°C / 91-93°F. The colder your hands are in the first place, the more potential you have to raise their temperature. In general, your hands can reach a temperature of more than 36°C / 97°F, which is the temperature of your body's core.

Third stage (transfer; relaxation without feedback)

1. Now you can check if a state of deepened relaxation, and the corresponding rise in skin temperature, can already be achieved without feedback. After measuring the baseline as usual, you should alternate between watching and not watching the feedback (two minutes each way). The longer and more often you can keep the temperature up without the feedback, the better your self-control has already become. When you are not using the feedback, don't look at the values in the app.
2. Perform multiple sessions in third stage. When you can keep your skin temperature up for a prolonged time and mainly without feedback, you have successfully completed this stage.
3. Our eSense app offers not only free training but procedures as well. These are ready-made training programs that you can customize according to your wishes. For the best comparability of training sessions, these should always be performed under identical conditions (same time of day, electrode position and type) and of approximately identical duration. The procedures are a great help. For more information, see the relevant section of this manual.

Fourth stage (deliberate provocation, relaxation and stress coping)

1. Finally, you should check if you have acquired improved stress resilience. Start a session with the baseline as usual, then keep your skin temperature on elevated levels (well above 30°C / 86°F) for a couple of minutes.
2. Try to bring yourself into a strenuous situation. You can recall previously memorized everyday situations in which you had cold hands, or situations that made you tense and angry. You can also move to a stressful environment or ask another person to exert a stressful stimulus upon you. Keep the stress situation short and do not overload your ability to cope with it.
3. Now under stress, observe if the temperature drops, and still try to keep the temperature at a high level and avoid temperature drops. Always change phases of stress and targeted relaxation.
4. If you can sustain elevated levels of skin temperature during strenuous situations, ideally at levels above your personal maximum in the first stage, you have learned to remain relaxed and calm even in difficult and stressful situations. You have fully reached the goal of hand warming training!

Functions of the Mindfield eSense App

The eSense comes with the eSense app which you can load for free in the Google Play Store (Android) or Apple App Store (iOS).

It offers a wealth of features for effective biofeedback training in a modern design. Essential functions are the display of measured values as bar graph and oscilloscope, feedback via video, music, sound, vibration and new: light with the help of smart bulbs (Magic Blue and Philips Hue). You receive a comprehensive evaluation after each measurement and can compare measurements with each other in the archive and export them as CSV files.

The app is available in English, German, Spanish, French, Italian, Portuguese, Ukrainian, Russian, Turkish, Dutch, Japanese and Chinese. The language is chosen automatically according to the set language of the smartphone or tablet.

Download Links



iOS: <https://itunes.apple.com/us/app/mindfield-esense/id1141032160?mt=8>

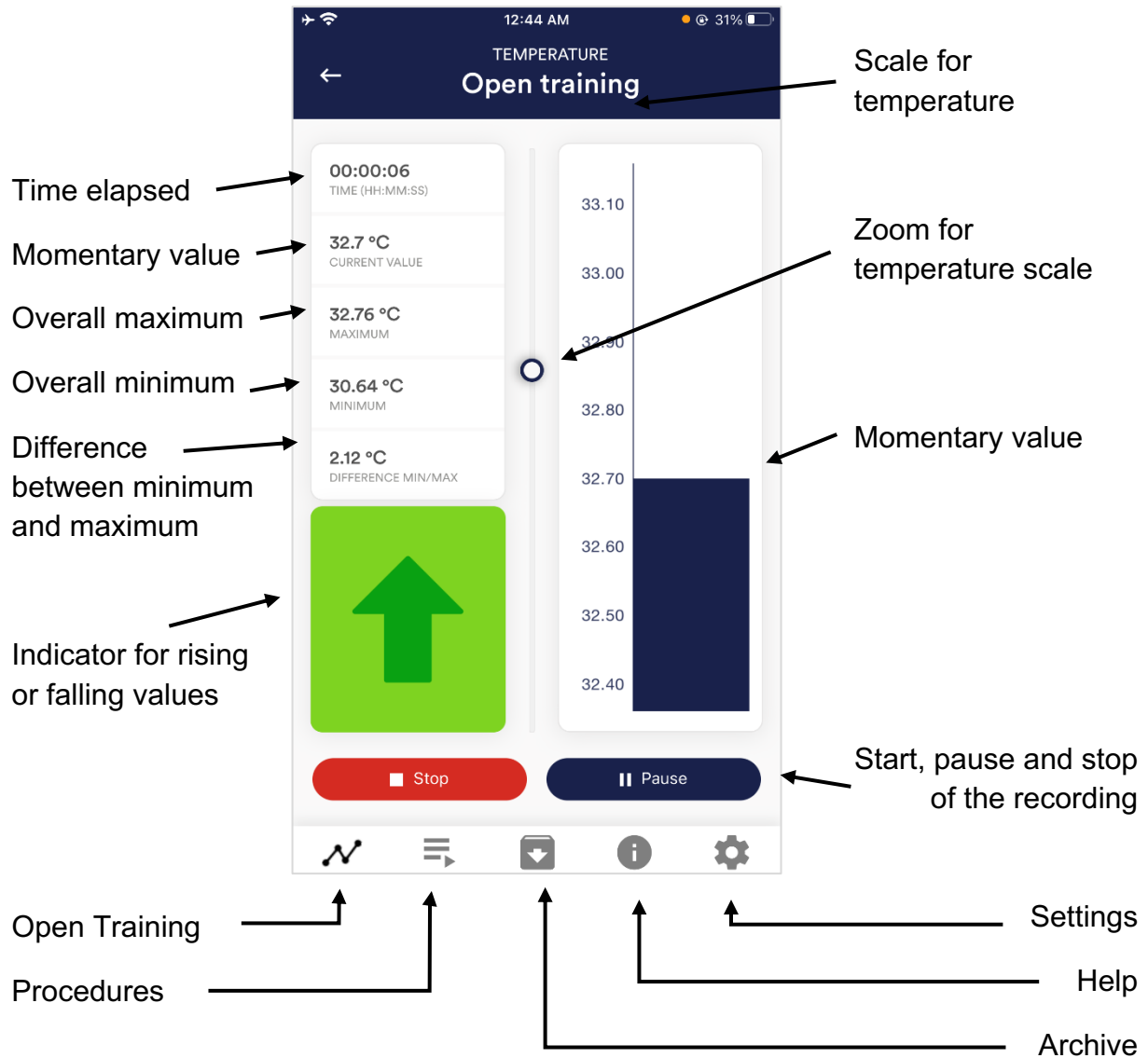
Android: <https://play.google.com/store/apps/details?id=com.mindfield.boisystem.esense>

General notes

- If the text on your Android device is sometimes cut off the reason can be a larger font in the system settings (especially for Huawei). In the Android settings, there is usually a way to adjust the font size and display size. It's best to set this to "standard" or "default", otherwise it can cause problems with app.
- For data files which you can load as own media into the eSense App, the general limitations by Android and iOS apply. We have successfully tested the following:
 - Images: PNG and JPG (GIF can be loaded but isn't animated)
 - Audio: MP3, WMA and WAV (Android) and MP3, WAV and AAC (iOS)
 - Videos: MOV, MP4 and 3GP (Android) and MOV, MP4 and M4V (iOS)

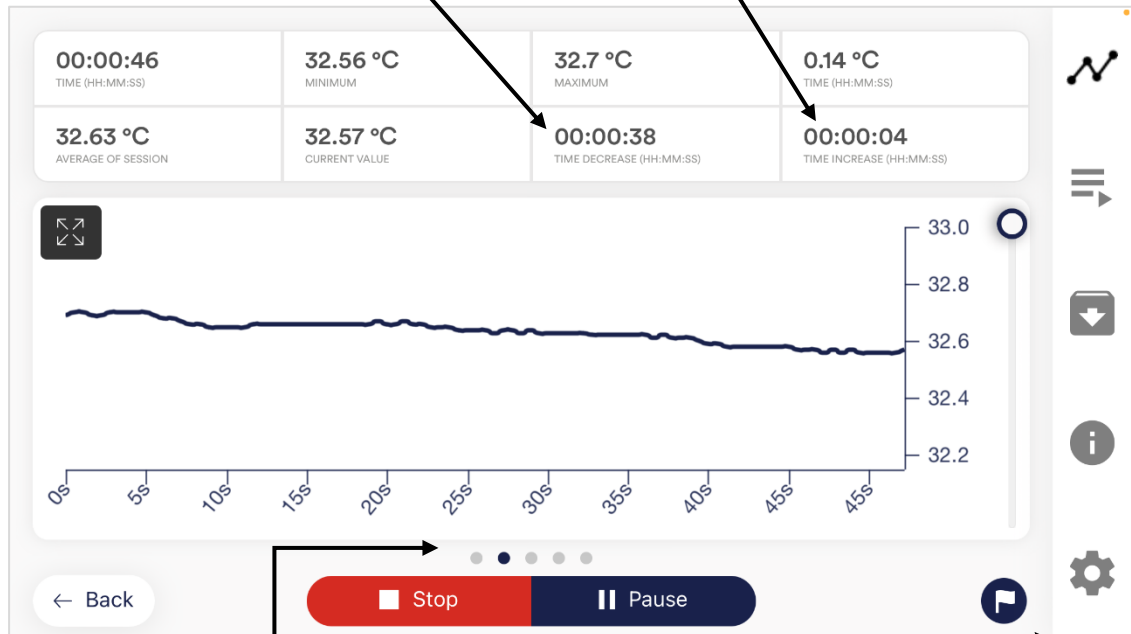
- If your audios or images are in other formats you simply can convert the files on your computer. Just use a free tool like Free Audio Converter (https://www.freemake.com/free_audio_converter/) or Free Video Converter (https://www.freemake.com/free_video_converter/)
- An additional tip: You can also directly download videos from YouTube and bring them in the correct format (MP4) with tools like <https://notube.net/en>

General view & Open Training



Absolute decrease of measured values

Absolute increase of measured values

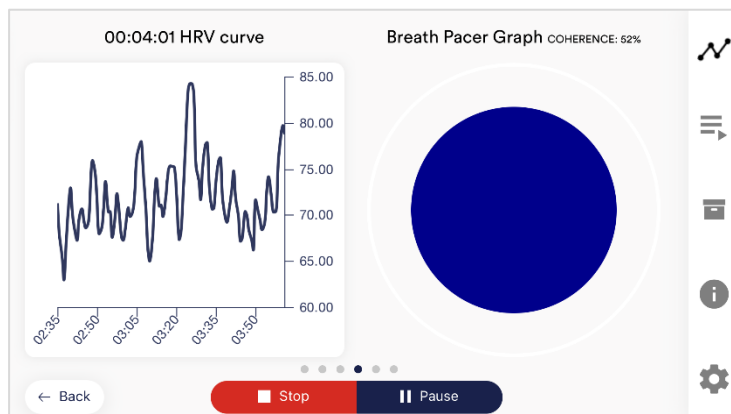


Set marker

Swipe the screen to the left or right to change between this main screen and the other views. After the measurement, you can also swipe to the pie charts.

Breath Pacer (optional)

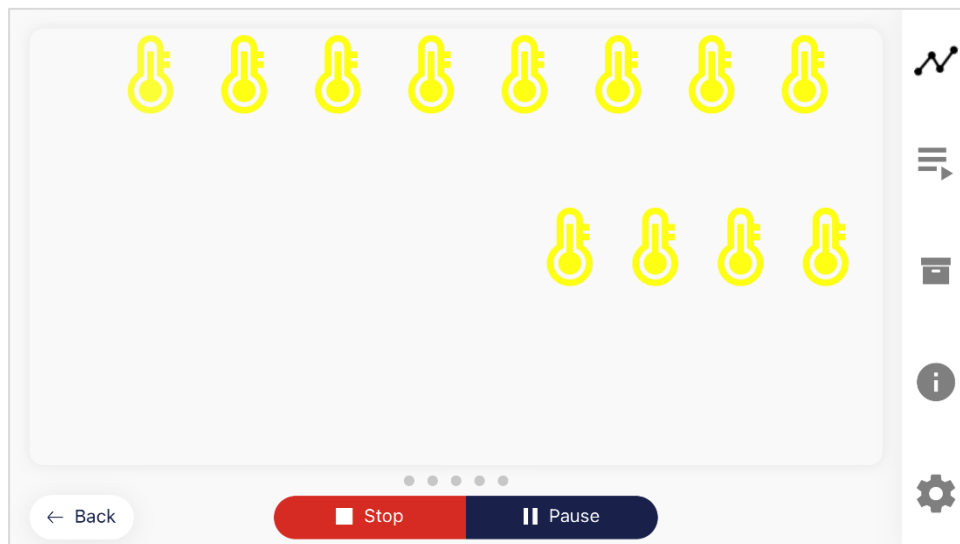
If you have toggled this option on in the settings, you can have the Breath Pacer displayed. In the settings you can choose between line or sphere.



Breath Pacer as sphere

You can configure the breath pacer in the settings. There you can freely choose inhalation time, hold, exhalation and hold in 0.1s increments.

Biofeedback Snake



Biofeedback Snake for the Temperature

You can also display the Biofeedback snake as an additional option. At the top left are appearing symbols which vary in color depending on the current measured value. After 10 green symbols you will also be rewarded with a star and after 50 green symbols even with a shooting star. If the snake goes over the entire screen you will see the last 5 minutes.

In detail, the symbols are calculated as follows.

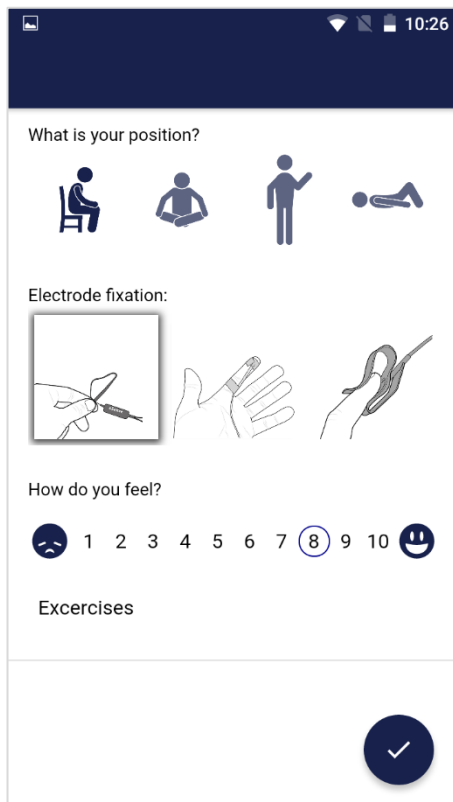
During the last 5 seconds of measurement, if...

- ...the value is $> 35^{\circ}\text{C}$, the thermometer is always green
- ...the value rises for 3-5 seconds, the thermometer is green
- ...the value rises for < 3 seconds and the temperature is $> 33^{\circ}\text{C}$, the thermometer is green
- ...the value rises for < 3 seconds and the temperature is $< 33^{\circ}\text{C}$, the thermometer is yellow
- ...the value rises for < 3 seconds and the temperature is $> 30^{\circ}\text{C}$, the thermometer is yellow
- ...the value rises for < 3 seconds and the temperature is $< 30^{\circ}\text{C}$, the thermometer is orange

- ...the value rises for < 3 seconds and the temperature is > 25°C, the thermometer is orange
- ...the value rises for < 3 seconds and the temperature is < 25°C, the thermometer is red

Survey (optional)

If you have toggled this option on in the settings, a survey will appear after each measurement. This enables you to archive reproducible measurements and to document changes in your measurements (if you f.i. change the electrodes type or if you start to use the eSense while lying down instead of sitting).



The screenshot shows a survey form with the following sections:

- What is your position?** with icons for sitting, legged/yoga sitting, standing, and laid.
- Electrode fixation:** with three images showing different ways to fixate the electrode: holding the sensor, adhesive tape, and a finger clip.
- How do you feel?** with a scale from 1 (sad face) to 10 (happy face), where 8 is selected.
- Exercises** with a large blue checkmark button.

What is your position?

Choose between sitting, legged/yoga sitting, standing or laid.

Electrode fixation

The first image represents holding the sensor, the second image represents adhesive tape, and the third image represents the finger clip.

How do you feel?

Here you set your mood after the session. This enables you to save your mood in connection with the measurements for the long-term.

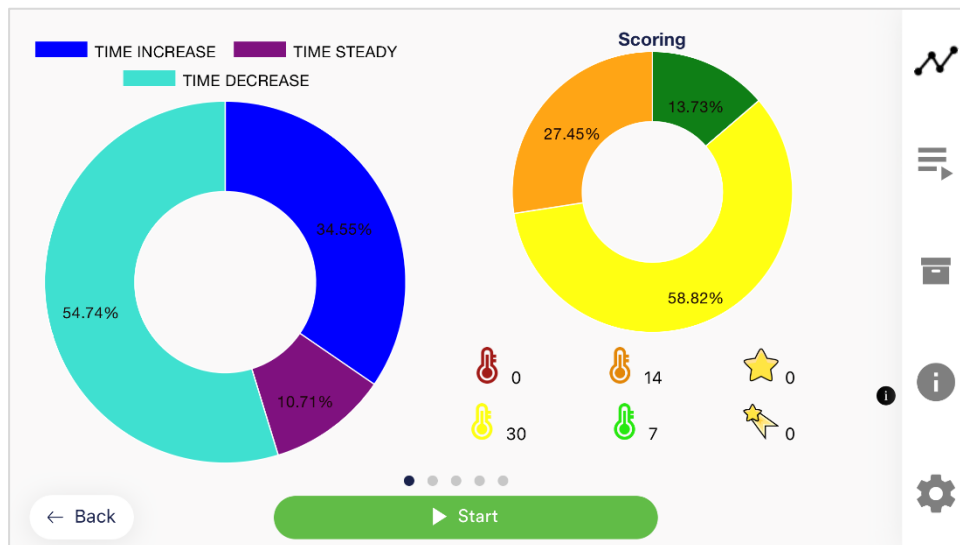
Note (here “Test tone and tactile”)

Here you can simply note a free text to the measurement. We suggest noting down special circumstances so that you can classify measurements with a lot of stress or relaxation even much later in time.

Pie charts (after a measurement)

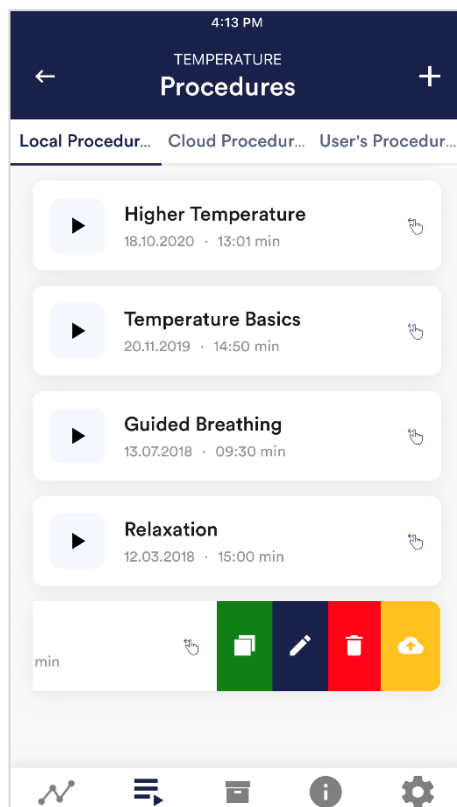
After the measurement (and optional survey), in the landscape mode, a survey appears with a chart: the time proportions of rising, falling or steady values (see screenshot).

Here too you can swipe the screen to the left or right to change between the pie chart and the graph of your measurement.



The pie charts after a measurement

Procedures



Edit or delete procedure

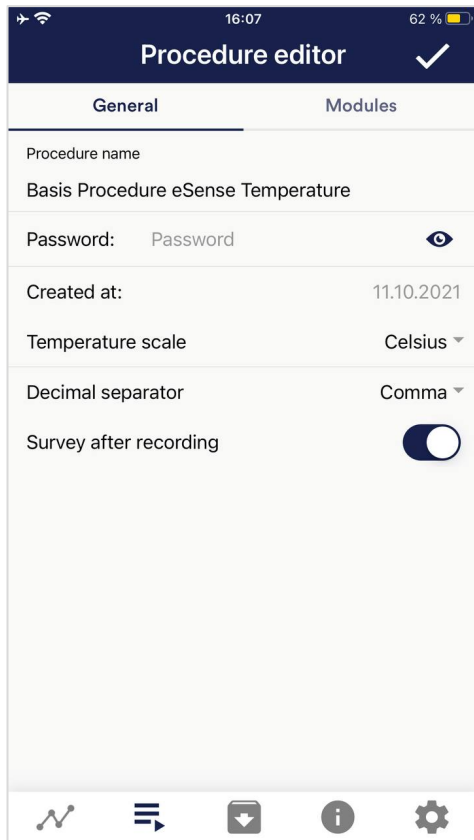
To edit a procedure, simply swipe it to the left in the overview.

You can then tap the blue pen-symbol to edit the module.

If you want to copy the procedure, tap on the green copy-symbol.

By touching the red trash symbol, you can delete the module.

Procedure editor



The screenshot shows the 'Procedure editor' app interface. At the top, there's a status bar with signal, time (16:07), and battery (62%). Below is a dark blue header with 'Procedure editor' and a checkmark icon. The main area has two tabs: 'General' (selected) and 'Modules'. Under 'General', there are several fields: 'Procedure name' with the value 'Basis Procedure eSense Temperature', 'Password' with the value 'Password' and an eye icon, 'Created at' with the value '11.10.2021', 'Temperature scale' with a dropdown menu set to 'Celsius', 'Decimal separator' with a dropdown menu set to 'Comma', and 'Survey after recording' with a toggle switch turned on. At the bottom, there's a navigation bar with five icons: a line graph, a list, a download arrow, an information 'i' icon, and a settings gear icon.

Procedure name

Here you can name your procedure with a suitable name (in this example, it is simply "test").

Temperature scale

Set the unit to Celsius or Fahrenheit

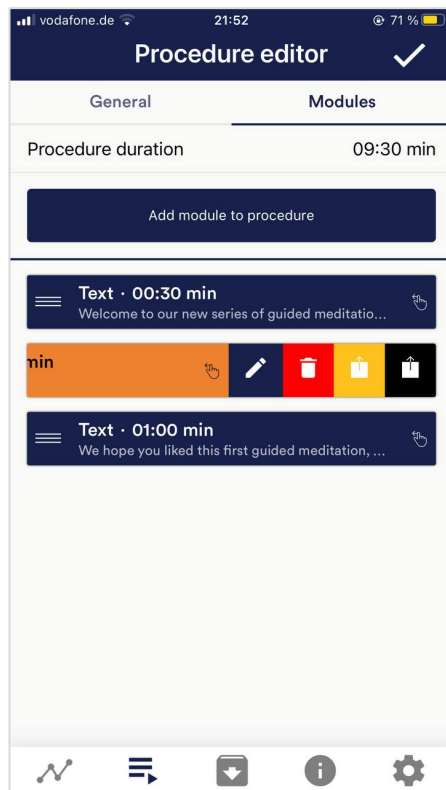
Decimal separator

You can choose between point or comma as separator of values in CSV export of procedures.

Survey after recording

Here you can activate/deactivate the survey (position, mood, notes) after each measurement.

Add new module



In the procedure editor, select the "Modules" tab.

Add module to procedure

Click on this button to add another module.

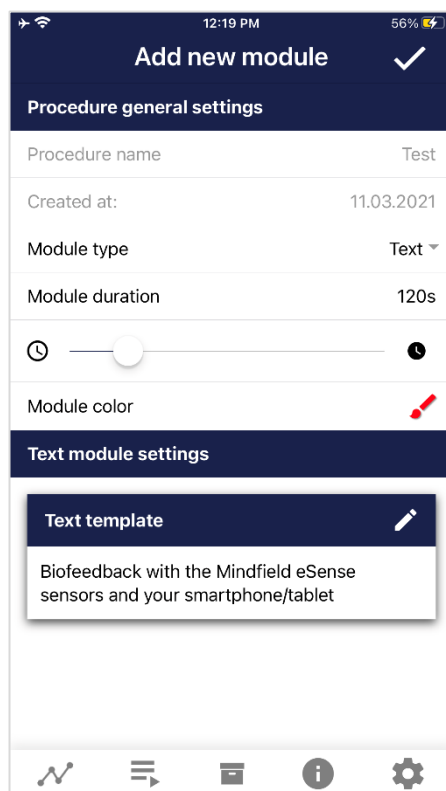
Edit module

Slide the module to the left and tap on the blue pencil symbol to edit.

To delete a module, tap the red trash can icon.

To duplicate a module within the procedure, click on the yellow sharing symbol.

To duplicate a module to another procedure, click on the black sharing icon and select the procedure from the following popup.



Module Type

You can choose between a text, a fixation cross, an image, a video, an audio file, an arrow, a bar graph, a smart bulb, a oscilloscope, a breath pacer or the biofeedback snake.

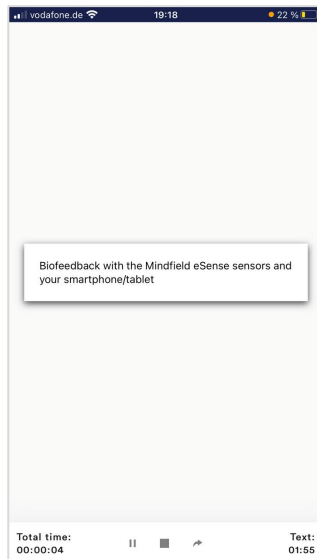
Module duration

Set how long the module shall last. Simply swipe the slider to the left or right.

Module color

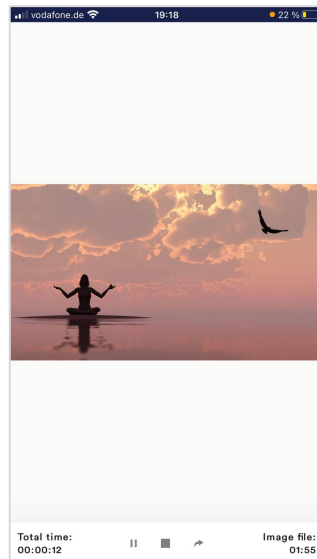
Determine the color of the module in the procedure editor.

Overview of the modules



Text module

This module shows a text which you can edit.



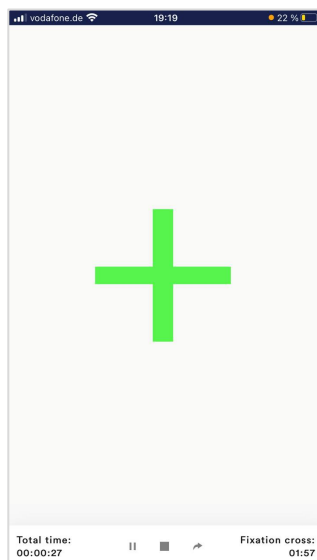
Picture module

The picture module shows either a standard picture from the app or a picture from your gallery.



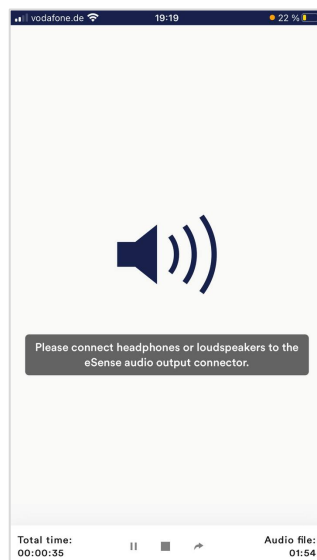
Video module

In the video module, you can choose either the standard video from the app or use your own video.



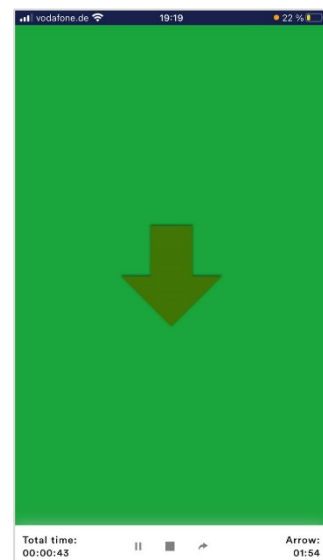
Fixation cross module

The cross changes its color depending on the conductance and provides direct biofeedback.



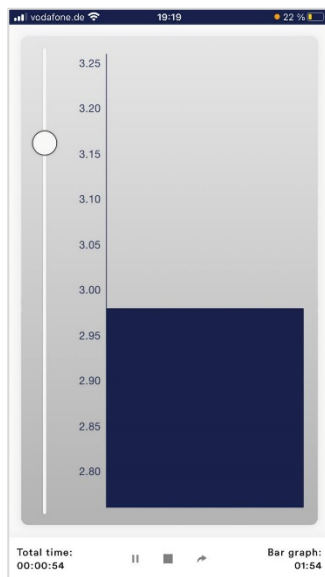
Audio module

The audio module is playing a relaxing song. You can choose your own music.



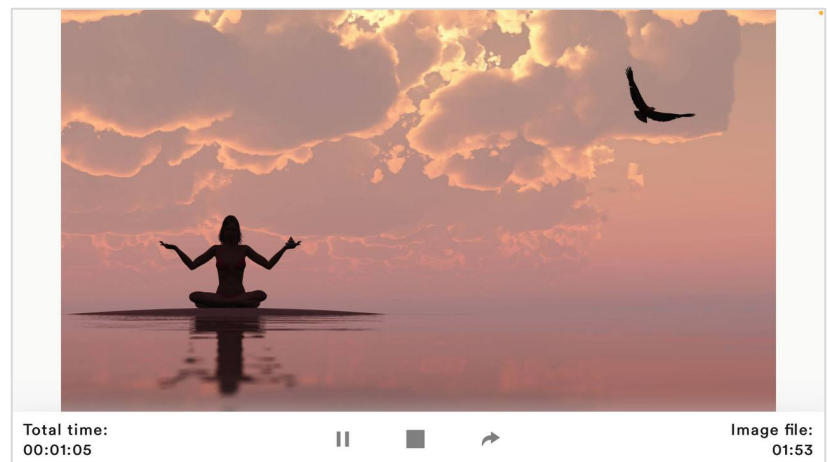
Arrow module

The arrow changes depending on relaxation and gives you direct biofeedback.



Bar graph module

The bar graph shows you your current value and gives you direct biofeedback.



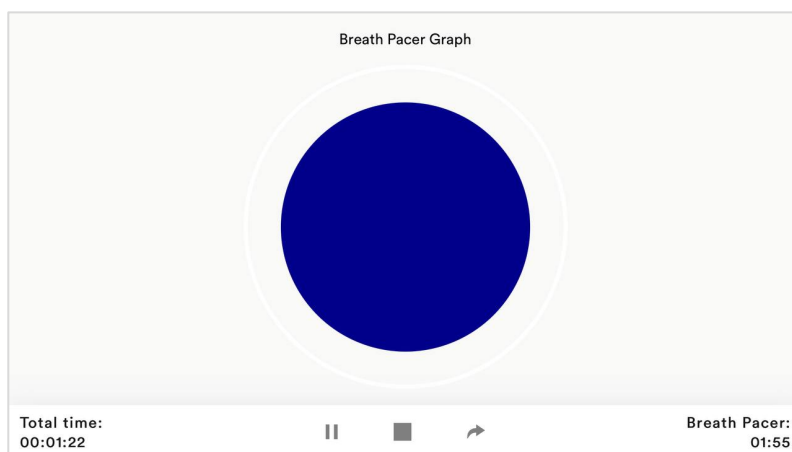
Picture module in landscape format

The procedures can be displayed also in landscape format.



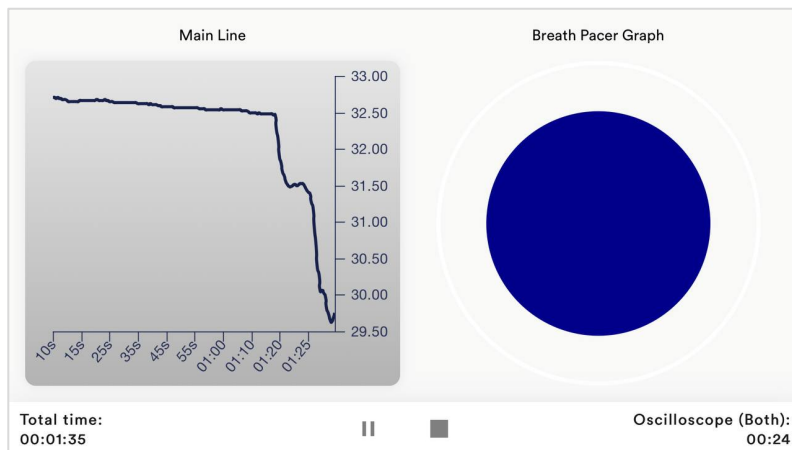
Breath Pacer module in landscape format

The procedures can be displayed also in landscape format.



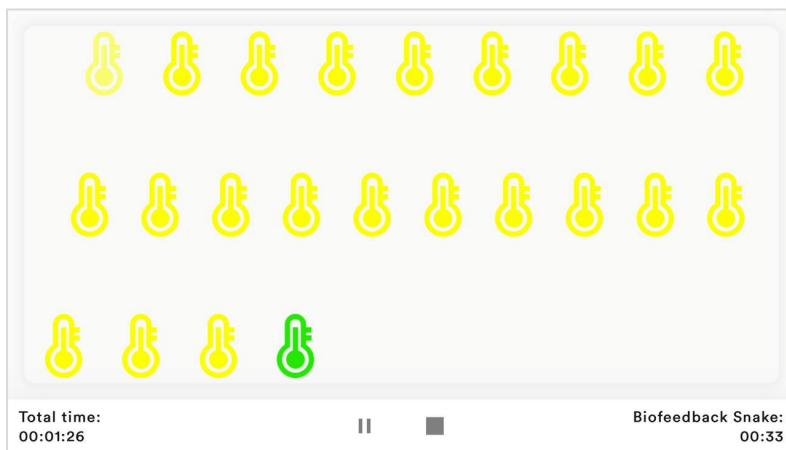
Oscilloscope Type Breath curve (Sphere)

The circle leads the breathing rhythm. When the blue circle contracts, breathe out. When he expands, inhale. You can also set holding phases between inhaling and exhaling.



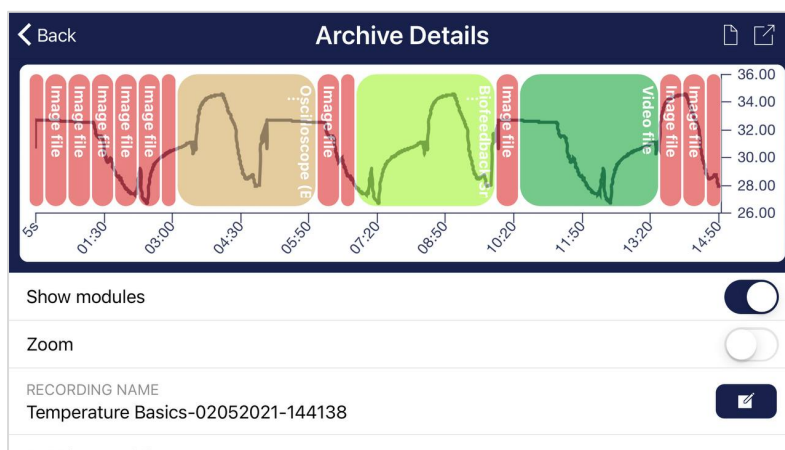
Oscilloscope Type Both

This is a combination of the graph to the left and the breathing aid to the right \. You can see the measured values while following the breathing aid.



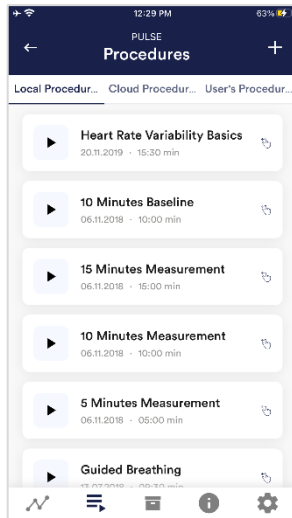
Biofeedback Snake

The Biofeedback Snake is also available as module.

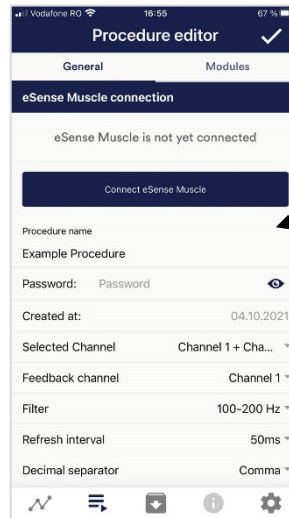


Procedure in the archive

Creation of a procedure

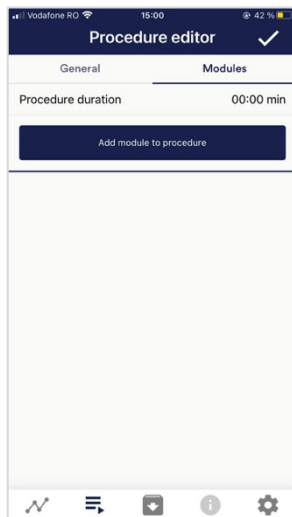


1) Tap on the plus icon to create a new procedure.

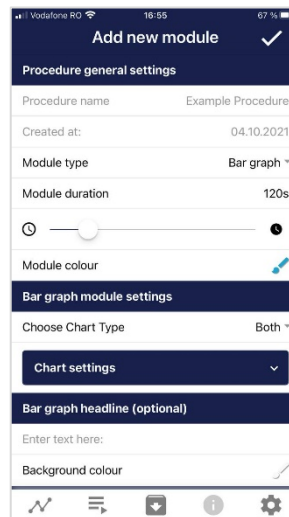


2) Give the procedure a name (here "Example Procedure").

You can simply accept all other default settings for this example.

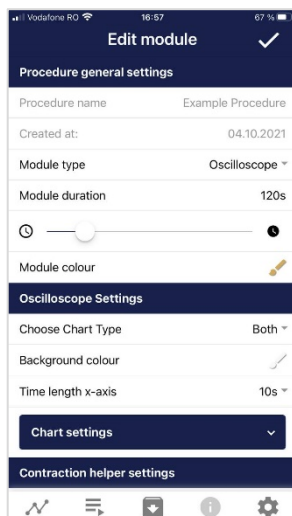


3) Select the upper tab "Module" and tap on the button "Add module".



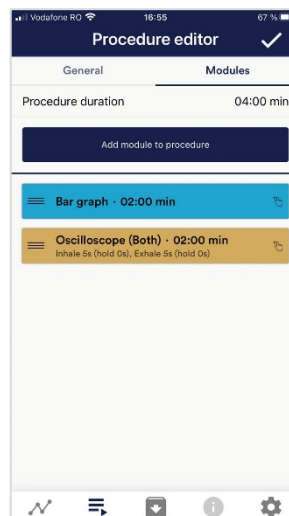
4) Select a bar graph module and tap the check mark.

Here, too, you can accept the default settings.

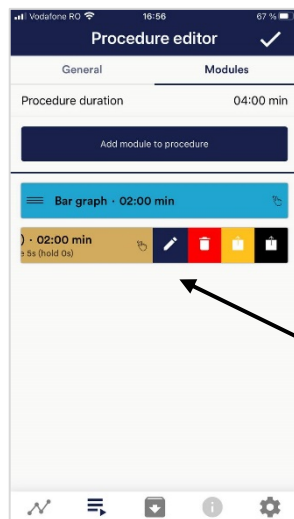


5) Then add an Oscilloscope and breath pacer module

Here, too, you can accept the default settings.

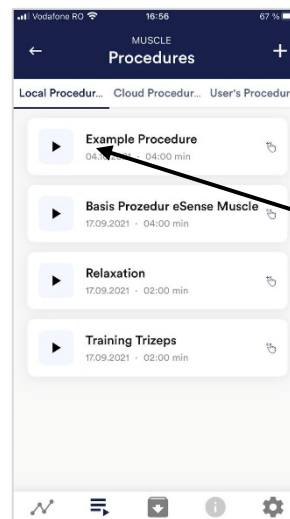


6) Your procedure should now look like this.



7) If you want to change something at a later date on one of the modules, you can swipe the corresponding module to the left and tap on the blue pencil symbol.

Otherwise you can now tap the tick at the top right.



8) Start the procedure by tapping the play button.

Have fun!

Meditations

You can also choose one of our guided meditations as a procedure. The breathing meditation is already included in the eSense app. We will also offer more meditations shortly as new free cloud procedures for users with account.

The meditations thus offer you an easy way to train your awareness and attention and, at the same time, receive biofeedback.

Own media (photos, videos and audios)

You can use your own pictures in the picture module, your own videos in the video module or your own music or melodies in the audio module in the procedures.

Android usually enables this without any further problems. As long as you allow the eSense app to access your files on your device, you can upload them to the eSense app.

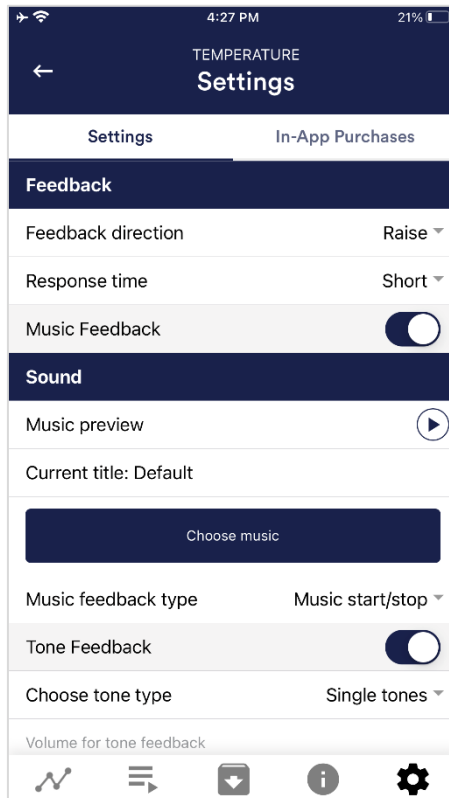
iOS is a bit more restrictive. As usual, you can use your pictures from your device in the iCloud for pictures and videos.

For audio files you need iTunes (or an alternative such as "CopyTrans Manager"). This is where your music or melody must be. You can find your music in iTunes (or CopyTrans Manager) under the tab "My Sound" and insert it into your procedures.

We have a detailed video at https://www.youtube.com/watch?v=A_CRbmBeBBc where we show all the steps.

On **iOS**, the **power saving mode** must also be deactivated, otherwise the videos in the procedures cannot be played.

Settings (Overview)



Feedback Direction

Select the direction in which you want the feedback to react to. It can respond either to an increase or decrease in the measured values.

Response time

The default setting is "Short", which allows feedback to respond quickly to changes in readings. For longer measurements we recommend "Medium" or "Long", then the reaction time will be slightly delayed and the eSense will no longer react to every small change of the measured values.

Music Feedback

If the value moves in the unwanted direction (e.g. lower values), the music will become quieter or change its speed depending on the type of feedback you choose.

Music Preview

Tab the play button to listen to the selected song.

Choose music

You can choose default or your own music.

Music feedback type

You can optionally choose between music start/stop, volume feedback or playback rate feedback. Note: For iOS are the Restricted options.

Tone Feedback

In the background, you can hear sounds from other apps.

Choose tone type

You can choose between single or continuous tones.

Auto Mode

When this is activated, the range in which the sound changes is automatically adjusted. The minimum and maximum values of the set time window are automatically used for the lower and upper limits of the following interval.

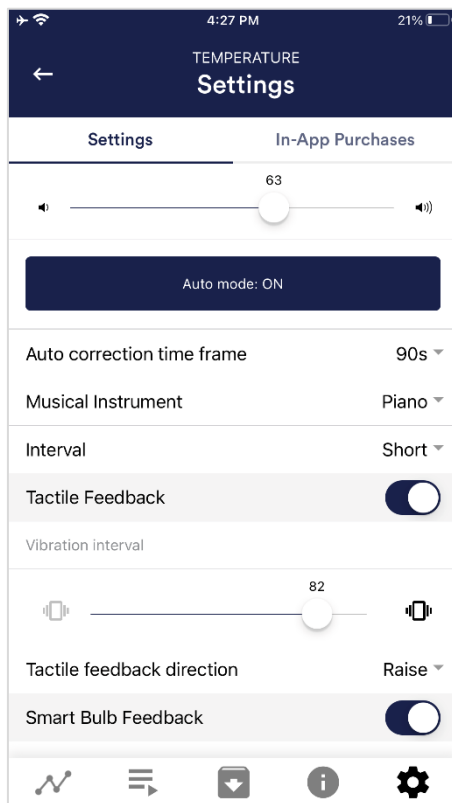
Value range from-to (Not visible when auto mode is enabled) You can set the area in which the feedback is active. We recommend selecting the range wide at the beginning and to set it smaller over time if necessary. Alternatively, you can use the automatic mode.

Auto correction time frame (Only visible when auto mode is enabled)

You can specify the time window in which the automatic mode adjusts itself each time.

Musical instrument

You can choose from various preset instruments.



Interval

Set an interval for the tone feedback.

Tactile Feedback

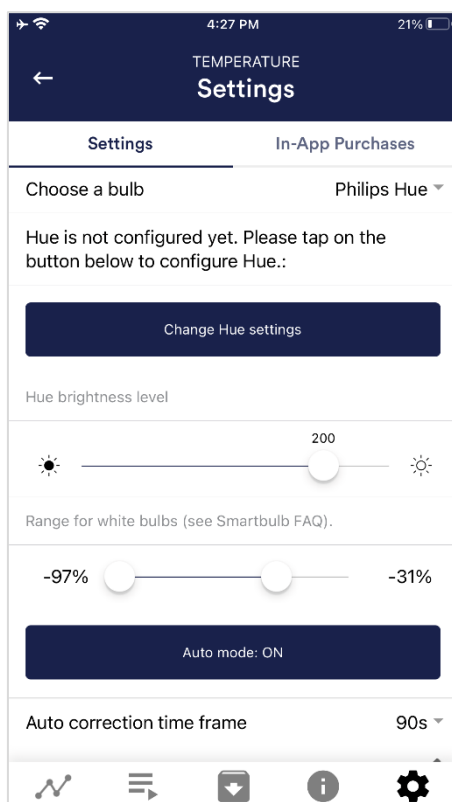
Your device will vibrate to provide feedback. Only smartphones support this feature, tablets do not have a vibration motor.

Tactile feedback direction

Decide whether decreasing ("Decrease") or increasing ("Increase") tactile feedback values should be considered a success.

Smart bulb feedback

The light bulb changes its color depending on the values.

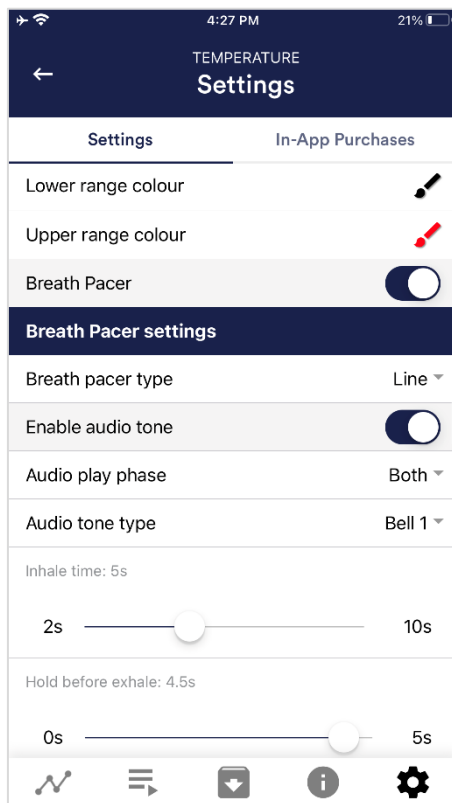


Choose a bulb

Choose between Magic Blue or Phillips Hue.

Connection test

With this option, the bulb changes color if the connection is successful.



Breath Pacer

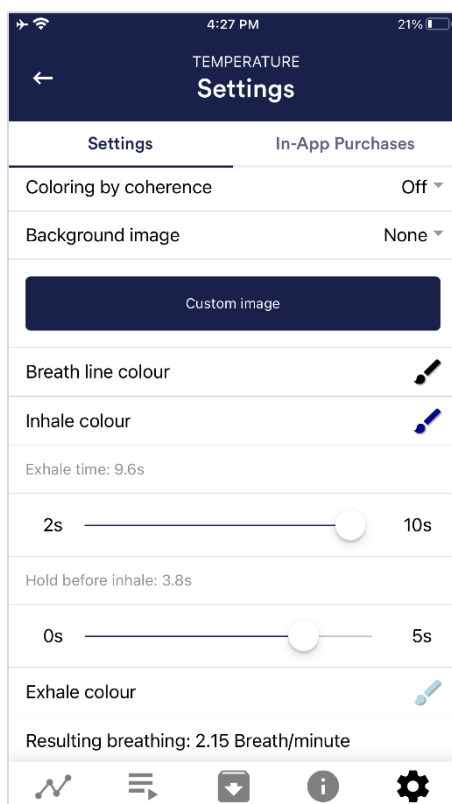
If activated, a breathing aid is displayed during the measurement.

Breath pacer type

You can choose between line and sphere.

Enable audio tone

Tones can also be added as auditory breathing aids.



Inhale time / exhale time

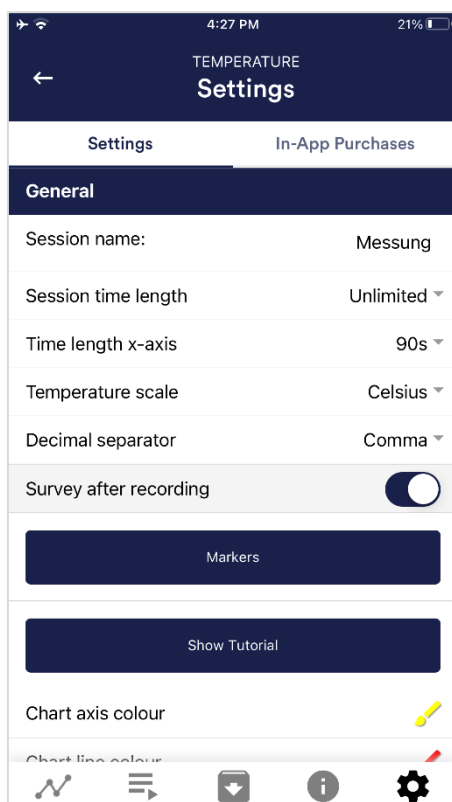
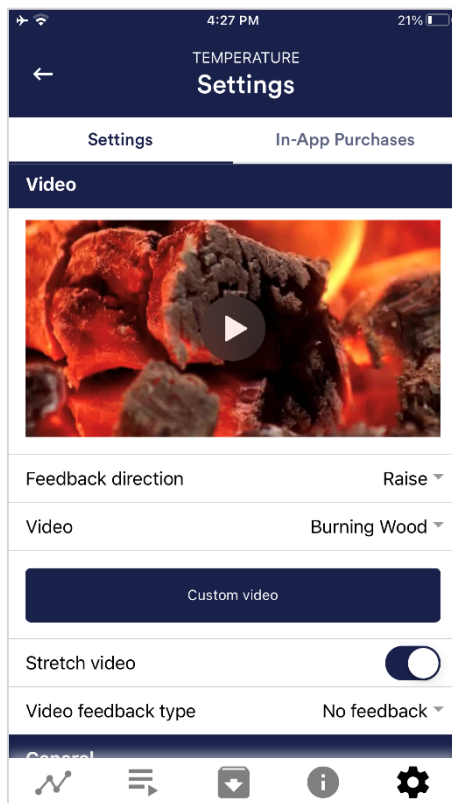
Select the seconds for each inhalation breath and exhalation breath to display the breathing aid.

Hold before inhale / exhale

Select the seconds between inhalation and exhalation breaths

Inhale color / exhale color

Select the color for each inhalation and exhalation stroke of the bar or ball.



Video

Choice: In the dropdown menu, you can select from included videos and "Select your own video". You can select your own videos from your device.

Video Feedback Type

Effects can be applied to the video as feedback. You can choose between Start/Stop, Sharpness, Brightness and Saturation. In addition, the automatic or manual mode for selecting the upper and lower limits is then available for sharpness, brightness, and saturation. In between is then interpolated. "No feedback" is also possible, then the video is simply played.

Session name

Enter the name of your session which will be displayed in the archive here.

Session time length

You can automatically time-limit normal measurements. They stop automatically after the set time.

Time length X-Axis

You can set the time displayed on the X-axis of the oscilloscope. We recommend 90 seconds.

Temperature scale

Set the unit to Celsius or Fahrenheit

Decimal separator

You can choose between comma or dot.

Survey after recording

Here you can activate/deactivate the survey (position, electrode type, mood, notes) after each measurement.

Markers

If enabled, you can define markers by tapping the + button. These are the markers you can set during a measurement. (See also 'Set Marker' in Landscape mode of the general view above).

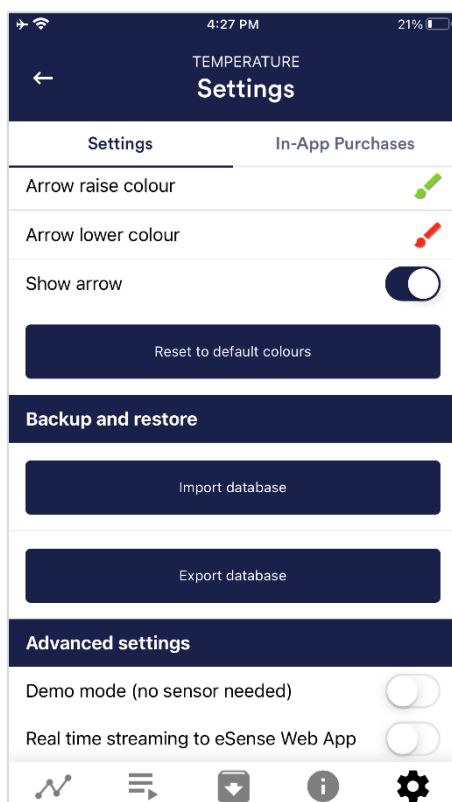
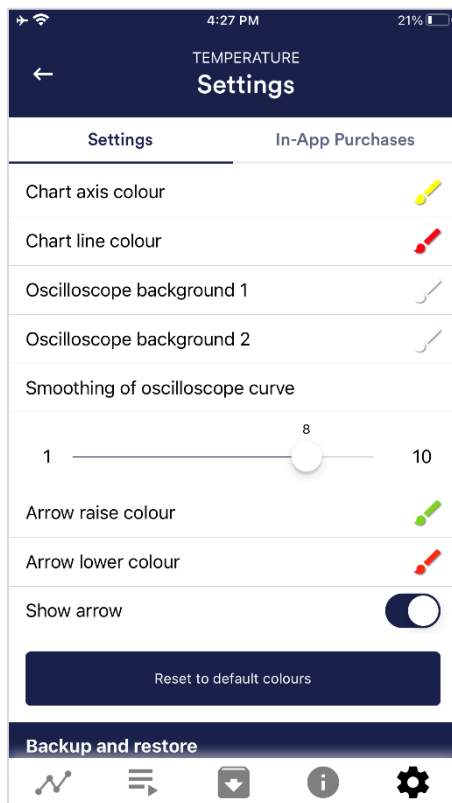
Show tutorial

You can watch the tutorial again at any time from the first start of the app.

Chart settings

You can change the colors of the chart and oscilloscope in the general view.

Chart settings



You can change the colors of the graph and the oscilloscope in the general view.

Chart axis color

You can change the color of the chart axis in the main view.

Chart line color

You can change the color of the chart line in the main view.

Oscilloscope background 1&2

You can change the background color of the oscilloscope in the main view.

Smoothing of oscilloscope curve

You can adjust the smoothing of the curve in the oscilloscope between 1 (hardly) and 10 (very strong).

Arrow raise / lower color

You can change the color of the arrow in the main view.

Show arrow

You can also disable the arrow in the main view.

Reset to standard colors

You can restore the default colors for the graph at any time.

Backup & Restore

You can export and import your procedures and measurements. More about this in our FAQ

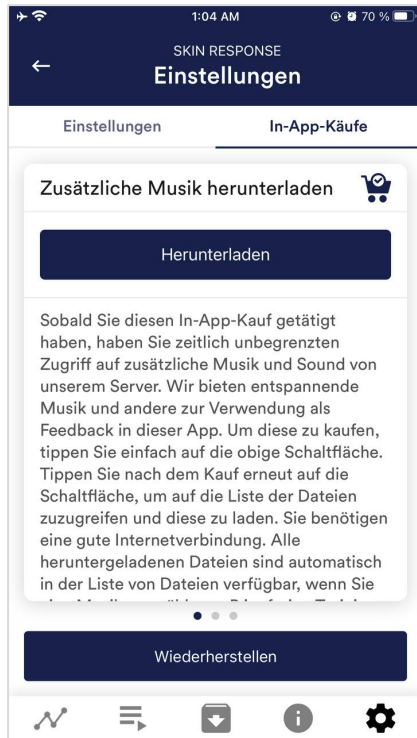
Demo Mode

A saved measurement is played back automatically. A real sensor is not needed.

Real time streaming to eSense Web App

This allows you to stream the data live to the eSense Web App. More information in the Account and Cloud section.

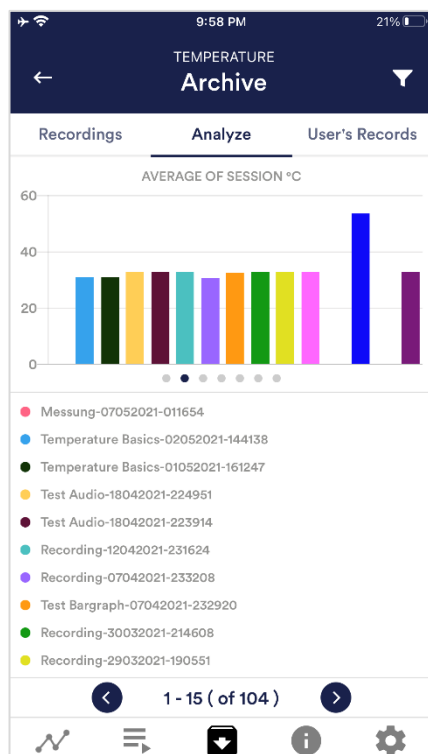
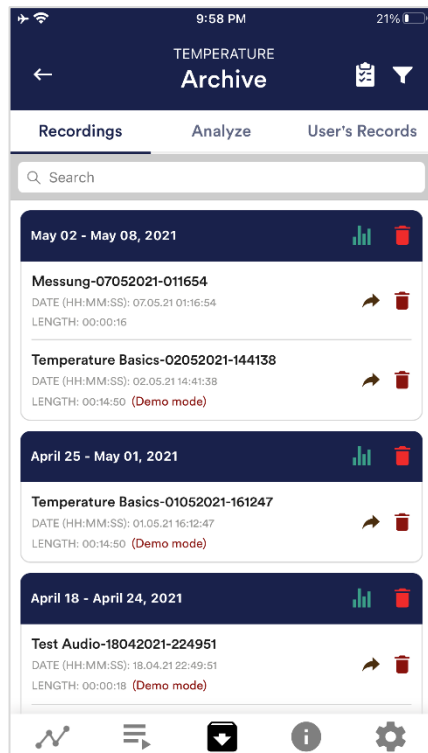
In App Purchases



In-App Purchases

Additional to the option to use your own music or videos in the eSense App you can also purchase additional music or videos. We regularly extend the offer.

Archive (overview)



The app also contains an archive, in which you can save your measurements and export them as well. You can watch those in detail again, compare them to each other and export them individual or all together (as ZIP file).

Recordings

Here you can see your measurements listed. You can view a single measurement by tapping on it.

If you click on the clipboard symbol at the top right, you can mark one, several or all measurements. You can then export, analyze or delete the exported measurement (s).

On the filter symbol you can choose whether you want to sort the measurements by name, date, length in ascending or descending order.

If you want to delete a single measurement from this list, you can also tap on the trash can symbol to the right of the measurement.

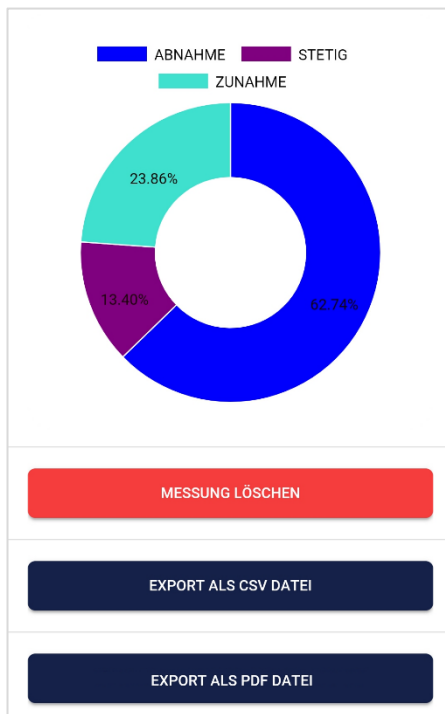
Analyze

Here all measurements are listed according to the following factors:

Time, Average of Session °C, Minimum °C, Maximum °C, Difference Min/Max °C, Time Decrease, Time Increase.

With this, you can recognize trends over time and over several measurements (if, for example, your % of SCR of Session decreases by regular training, you can see this here immediately).

Archive (individual view)



Export data

If you click on the export symbol on the top right, you can export the measurements as a .csv-file with all common apps (f.i., send over the Messenger, WhatsApp, email etc.) or simply save them on your device or in your cloud.

The data are exported as a .csv-file (comma separated values). This format can be opened f.i. with Microsoft Excel or Open Office Calc (for free).

If you like to work with Google, Google Sheets can be an alternative to Excel for you. You can open your exported .csv-files and visualize and access them via the cloud easily from several devices. Google Sheets has almost the same functions as Excel, and the interface is very similar as well.

Notice: We have also created a detailed guide for the CSV export and the processing of your data in a separate guide. This can be found under the following link:

www.mindfield.de/esense-csv-guide

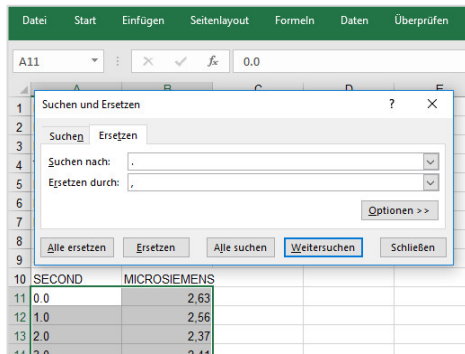
Parts of increase/decrease/steady

In the pie chart you can see the parts in which the measured values were increasing, decreasing or steady.

Export as PDF File

You can export the measurement also as PDF alternatively. Note: This takes a moment

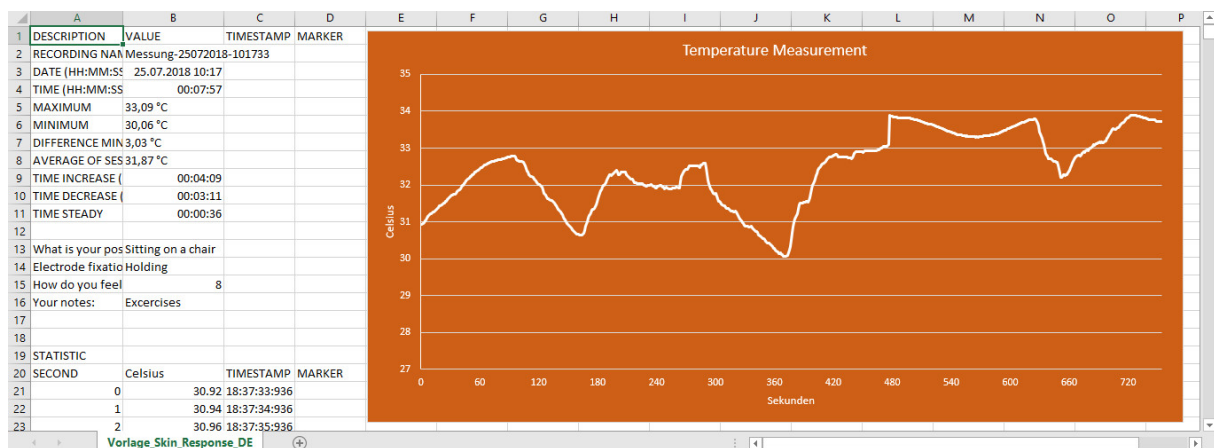
In Excel™ or Google Sheets™



Notice: If you open the .csv-file with Excel™ (or Google Sheets™) and your values make no sense, then there is usually a different set language in the eSense App and Excel™ and Sheets™.

Notice: We have also created a detailed guide for the CSV export and the processing of your data in a separate guide. This can be found under the following link:

www.mindfield.de/esense-csv-guide

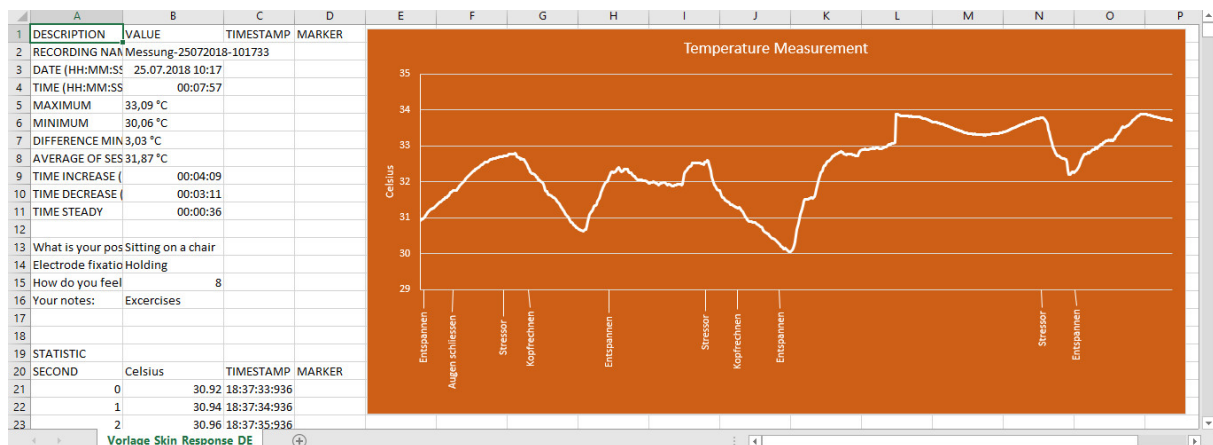


Exported data in Excel

Marker feature

You can also set markers during your measurements. For example, if you have a regular biofeedback exercise which involves breathing calm at a specific point, you can set a marker in that moment when you breath calmly. Later in the exported data, you can see the moment where you breathed calmly. Especially in longer measurements with several actions, this comes in handy.

The markers can be displayed especially well in Excel:



Exported measurement in Excel with markers

Account and Cloud

You can register your own, free account for the eSense app and book plans. You can also benefit from free, regularly added procedures without booking a plan. Thus, we recommend using the app with an account. With the plans you can mainly use the cloud and its functions and get also access to the eSense web app.

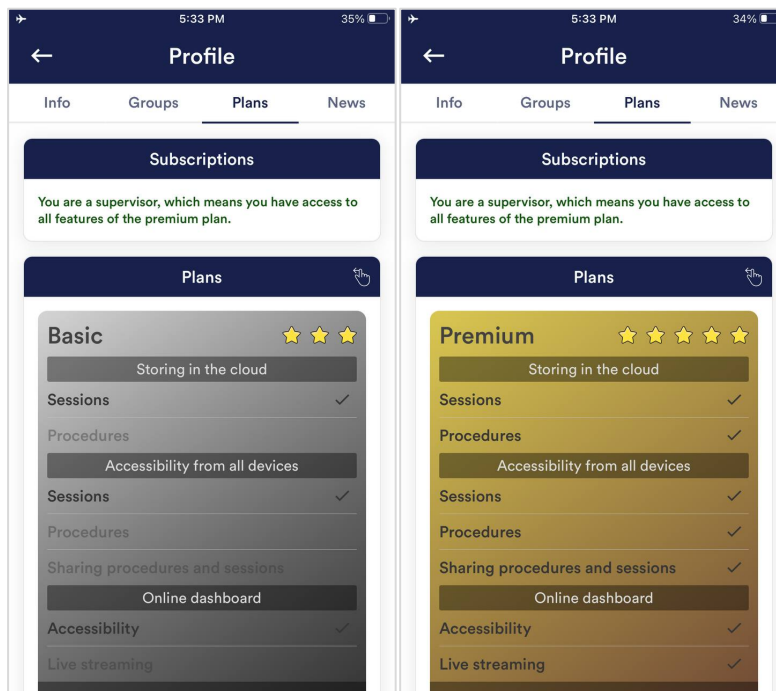
With the Basic plan, you can save your measurements locally and online in the cloud and thus access your measurements from all devices and from anywhere. You also get access to the eSense web app.

The Premium Plan includes all functions of the Basis Plan. In addition to your measurements, you can also save your custom procedures online in the cloud and thus access your procedures from all devices. (Attention: Technical limitations from Apple unfortunately do not allow the upload (and thus the synchronization) of audio files. The synchronization of picture and video files is possible, however).

You can also share your measurements with other users as Premium plan user. You also have the option to live stream your data to the eSense Web App in real time.

These plans can be used, among other things, to design a trainer's client's workflow. An overview of the account and the cloud in our separate PDF: <https://mindfield.de/dwnld.php?download=191>.

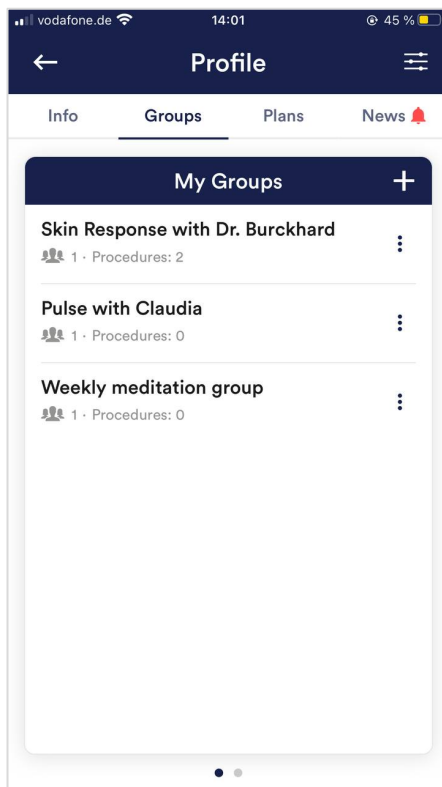
You can book the plans in our app in the profile tab:



Plans in Profile Tab

Groups

The accounts enable you to create your own groups or to join other groups. This allows you to share your recordings with your friends. Or you can work with a trainer as a client since you can share your recordings with the trainer.



Create a group

Tap on the plus symbol to create a group.

Edit a group

Tap on the 3 dots next to the group name. You can then (if authorized) view and remove the members of the group or add new members. You can also change the title of the group or delete the group.

eSense Web App

In addition to the app, we have also developed an eSense web app that mirrors and supplements the app. You can use this with the account and plans mentioned above.

You can analyze your recorded data (with the basic plan) or even transfer your data to a PC in real time (live streaming with the premium plan).

The main advantage of this is that you can see the graph even better with a large screen and enlarge individual areas and have more advanced analyze features.



eSense Web App with a live measurement with the eSense Pulse

With the eSense Web App, you can also view measurements from several and different eSense simultaneously and in real time, which allows a professional trainer client to design the workflow.

You can find the web app at www.esense.live. There you can login with the same account (username and password) as for the eSense app. You can find more information about the eSense Web App and its possibilities in our separate PDF for streaming data (<https://mindfield.de/dwnld.php/?download=187>) and our YouTube videos (https://www.youtube.com/channel/UCNFYv0kkoKQvGL-SGGbh_cw/).

Supported devices Android

- All Android Smartphones and Tablets from Android 7.0 (Nougat)
Your Android device requires a 3,5mm jack (headphone jack) for external microphones! For Android devices without a headphone jack, you can use an adapter with a DAC chip. We recommend this adapter on Amazon: <https://amzn.to/2SnAUA1>
- If you plan on purchasing a device for using the eSense, we suggest a Nokia 2.4 (<https://amzn.to/3oIUjyn>), a Nokia G20 (<https://amzn.to/35JPDvS>), a Motorola Moto E7i Power (<https://amzn.to/3GyOh3X>) or a Xiaomi Redmi 9a (<https://amzn.to/32WHvao>) as an inexpensive entry-level device.

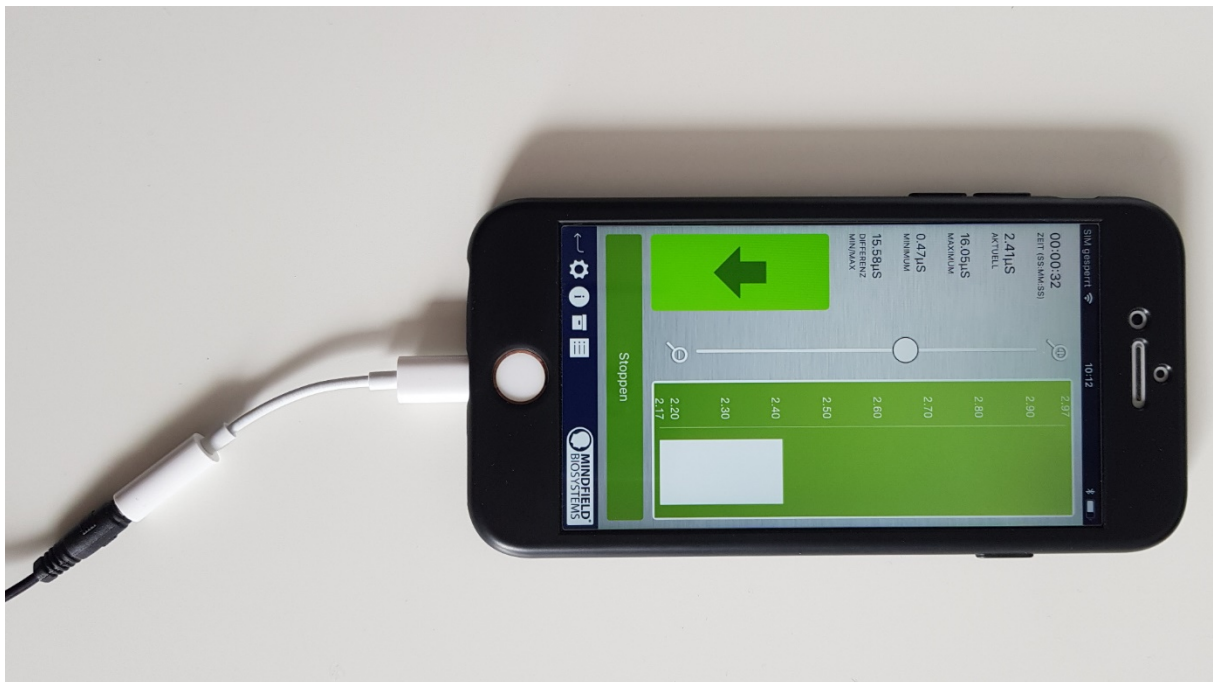
Supported devices iOS

- **All iOS devices from version 12.5 or higher, which are (in part):**
- Apple® iPhone® 5S, iPhone® 6 / 6S, iPhone® SE / SE 2, iPhone® 7/7 +, iPhone® 8/8 +, iPhone® X, iPhone® XR, iPhone® XS, iPhone® 11/11 Pro, iPhone® 12/12 Pro
- Apple® iPad® from 5th generation (iPad Air) or newer, including all iPad Mini from 2nd generation
- Apple® iPad® Pro from 1st generation or newer
- Apple® iPod Touch® from 6th generation or newer
- **Note:** Some newer iOS devices without the classic 3.5mm headphone jack and with the newer Lightning / USB-C connector also work perfectly with the eSense. You either need an original Apple USB-C (<https://amzn.to/2OQYssu>) or original Apple Lightning (<https://amzn.to/2SJvg37>) to 3.5 mm connection adapter (not included in the scope of delivery of the eSense). Alternatively, you also can use any other adapter with a DAC chip. We recommend this adapter on Amazon: <https://amzn.to/2SnAUA1>

Additional note Siri: Please note that Siri can NOT be activated while you do a measurement with the eSense app (this applies to all eSense sensors). Otherwise a running measurement can be disturbed and your values be wrong therefore. You have to deactivate Siri YOURSELF (our app can't do this due to the settings of Apple).

In order to deactivate Siri go Settings -> (General ->) Siri and deactivate Siri (the exact steps can vary depending on the version of iOS).

Additional note iOS 7 and higher: The eSense works through the microphone port. From iOS 7 or higher, you have to allow the eSense app to use the microphone port, otherwise it will not work. During installation, you will be asked for permission to use the microphone port. Please answer with "Yes" or "Allow". After installation, you can make this setting manually: Allow the eSense app to use the microphone port in the system settings of your iOS device: Settings -> Privacy -> Microphone.



Lightning to 3.5 mm Headphone Jack Adapter

Smart Bulb (optional)



eSense Skin response in use with the Magic Blue smart bulb

The eSense app can support biofeedback via smart bulbs. Smart bulbs can change their colors and brightness and can be controlled via Bluetooth. In combination with the eSense app, smart bulbs indicate your level of stress or relaxation via the light from the bulb.

Currently, the eSense app supports the Magic Blue and Phillips Hue smart bulbs. From within the eSense App, you can connect to the Magic Blue or the Phillips Hue and use the smart bulb in your biofeedback session.

We have more information about the smart bulbs in our FAQ:

<https://www.mindfield.de/dwnld.php/?download=163>

Magic Blue

You can buy the Magic Bulb at our shop at www.mindfield-shop.com/en/product/magic-blue-v2/.

Philips Hue

You should find the Phillips Hue in every well-sorted electronic store. You can also order online. A list of the on- and offline-merchants can be also found on the page of the Phillips Hue: <https://www2.meethue.com/en-us>

We suggest you use one of the starter kits from Phillips, with the eSense. This also contains a colored bulb ("Color Ambience"):

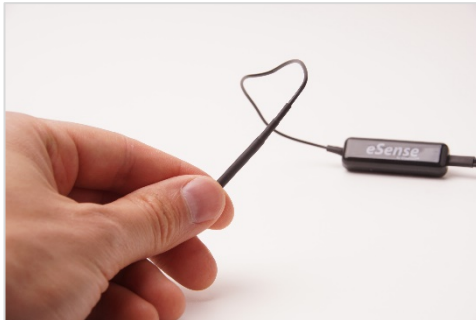
<https://www.amazon.com/dp/B06Y3QXSGX>

We recommend the Hue Color ambience for the best experience because with the colors, the feedback can be enhanced with different colors.

Options for fixation of sensor

You can simply hold the sensor, fixate it with a Leukosilk (medical tape) or use our Finger clip.

Holding



- ✓ Holding between index finger and thumb.
- ✓ No additional equipment necessary.

Leukosilk (medical tape)



- ✓ Mounting on a finger or the palm.
- ✓ Fixation with Leukosilk.
- ✓ More comfortable.

Finger Clip



- ✓ No sticking.
- ✓ No heat accumulation.
- ✓ Best fixation of temperature sensor.

Our recommendation

You can order the Finger Clip here:

www.mindfield-shop.com/en/product/innovative-finger-clip-for-temperature-sensor/

Extending the cord of the eSense

If you wish to use a longer cord between the eSense and your smart phone or tablet, you can extend the original cord of the eSense with a common, 4-pin, 3.5mm jack headset extension cord. We have tested three cords that have worked well:

2m cord: <http://amzn.to/2kJwqBM>

0,5m cord: <http://amzn.to/2kKEONs>

110cm cord: <http://amzn.to/2jJg1LZ>

All three suggested cords cost between £6-8 and are available from Amazon. Alternatively, you should be able to use other 4-pin cords as well.

Technical Data

Sampling frequency: 5 Hz (5 measured values per second).

The measured values are saved for exporting the data and can be exported as a CVS file in the app.

Resolution of the measured values: 18bit, rounded to 2 decimal places, i.e. 0.01 ° C in the data export without rounding

Absolute measurement error without calibration: + -0.5 ° C (applies from 15 ° C to 35 ° C)

Recommended measuring range: 15 ° C to 35 ° C

Maximum measuring range: 0 ° C to 85 ° C

EC Declaration of Conformity for the Mindfield eSense

In accordance with the following directive(s):

The Electromagnetic Compatibility Directive (EMC) (2004/108/EG)

RoHS - Restriction of (the use of certain) hazardous substances (2011/65/EU)

WEEE Waste Electrical and Electronic Equipment (2002/96/EG & 2008/34/EG)

The manufacturer

Mindfield Bio-systems Ltd.
Hindenburgring 4
D-48599 Gronau

Germany

WEEE-Reg.-Nr. DE 24465971

hereby declares that the following product:

“Mindfield® eSense Temperature”

complies with all applicable essential requirements of the directives.

It is in conformity with the applicable requirements of the following documents:

DIN EN 60950-1 Information technology equipment – Safety – Part 1: General requirements (2011-01)

DIN EN 55022 Information technology equipment - Radio disturbance characteristics - Limits and methods of measurement (2008-05)

DIN EN 55024 Information technology equipment - Immunity characteristics - Limits and methods of measurement (2011-09)

Place: Gronau

Date: 19th of August 2017



www.mindfield.de
A Better State of Mind

Niko Rockensüß, Managing Director



The Mindfield eSense has to be recycled as electrical waste according to the legal requirements.

WEEE-Reg.-Nr. DE 24465971

Privacy policy

The eSense App does not collect any personal data, such as name, gender, date of birth, etc..

Each recording of measurement data is done under a general prefix such as "measurement", supplemented by with the eSense sensor used, the current date and time of the measurement. The recorded measurement data cannot therefore be assigned to any person.

The prefix of a recording, e.g. "measurement", can be changed by the user in the settings and used for the assignment to a person. Users can decide whether to change this prefix to their name, for example. Then each measurement and also each CSV file exported from it contains the name of the user in the file name.

Access rights within the eSense App

1. Microphone input: Access to the microphone input is required to receive measurement data from the eSense sensor at all. This access is mandatory.
2. Access to media library: Access to photos, music, and videos is only required if you want to use your own photos, music, and/or videos in the eSense App. The eSense app should be used as feedback. It is also possible to use only the by the app supplied media.
3. Access to the location: The access to the location (activation of GPS) is only required for the Bluetooth connection to the Magic Blue bulb (optionally available) or the eSense Pulse. This is mandatory under Android and lies outside the possibilities of the publisher of the eSense App. No standard data is collected, the standard function is not used.
4. Access to Bluetooth: If the eSense app is used with the Magic Blue smart bulb to provide biofeedback by modifying the color and brightness of the light bulb, it needs to be connected via Bluetooth within the app. To do this, the Bluetooth function is used. For the eSense Pulse Sensor, Bluetooth is also required as it transmits the data via Bluetooth.

Transmission of anonymous usage data and crash reports

In order to improve the technical stability of the eSense App and the detection of code errors, we use the Sentry service. Sentry serves these purposes alone and does not evaluate any data for advertising purposes. The transmission takes place anonymously and only with an existing internet connection.

Processed data

Usage data, metadata (device ID, device data, IP address).

Special protective measures: IP masking, immediate deletion.

External Functional Software Disclosure: Functional Software Inc., Sentry, 132 Hawthorne Street, San Francisco, California 94107, USA.

Privacy Policy: <https://sentry.io/privacy/>.

Processing in third countries: USA

Warranty for processing in third countries: Privacy Shield, <https://www.privacyshield.gov/participant?id=a2zt0000000TNDzAAO&status=Active>.

Deletion of the data: Information on the device or time of error is collected anonymously and is not used for personal purposes and then deleted.

Medical information

The Mindfield eSense sensors are not medical devices and may therefore only be used to reduce stress.

If you suffer from an illness, do not carry out any treatment on your own and always consult a therapist.

Warranty by the manufacturer

The statutory warranty obligations apply to all our products. If you have any problems with our products, please contact us directly. See the "Contact" section of this manual.

Contact

Manufacturer

Mindfield® Bio-systems Ltd. · Hindenburgring 4 · D-48599 Gronau · Germany

Tel: + 49 (0)2565 406 27 27 · Fax: + 49 (0)2565 406 27 28 · E-Mail:
info@mindfield.de

For questions, problems and in case of warranty, please contact us via email or visit our website at www.mindfield.de for more information.

Please send never unprompted packages to us. Unfree returns will not be accepted and cannot be processed.

Your Notes
