

GERMAN

Dear Customer,

We are pleased that you have chosen a product from our range. Our name stands for high-quality and thoroughly tested quality products in the areas of heat, weight, blood pressure, body temperature, pulse, gentle therapy, massage, beauty, baby and air. Please read these instructions for use carefully, keep them for later use, make them accessible to other users and follow the instructions.

With kind regards
Your Beurer team

1. Scope of delivery

- 1 PO 80 Pulsioximeter
- 1 lanyard 1 data cable
- 1 USB charger
- 1 belt pouch
- 1 This user manual

2. Intended use

Only use the Beurer PO 80 pulse oximeter on humans to measure arterial oxygen saturation (SpO₂) of hemoglobin and heart rate (pulse rate). The pulse oximeter is suitable for use both in the private sphere (at home) and in the medical sector (hospitals, medical facilities).

3. To get to know each other

The Beurer PO 80 pulse oximeter is used for non-invasive measurement of arterial oxygen saturation (SpO₂) and heart rate (pulse rate). The oxygen saturation indicates what percentage of the hemoglobin in the arterial blood is loaded with oxygen. It is therefore an important parameter for assessing respiratory function. If you fall below or exceed your individually set alarm limits, you will receive an acoustic warning. The integrated memory enables continuous recording of up to 24 hours. The pulse oximeter can be connected to a PC via the integrated USB port. The "SpO₂

Assistant" Software.
The pulse oximeter uses two light beams of different wavelengths to measure, which hit the finger inside the housing.

A low oxygen saturation value is mainly due to diseases (respiratory diseases, asthma, cardiac insufficiency, etc.). The following symptoms occur more frequently in people with low oxygen saturation values: shortness of breath, heart rate increase, loss of performance, nervousness and sweating. A chronic and known reduced oxygen saturation requires monitoring by your pulse oximeter under medical supervision. An acutely reduced oxygen saturation, with or without accompanying symptoms, must be clarified immediately by a doctor, it can be a life-threatening situation. The pulse oximeter is therefore particularly suitable for high-risk patients such as people with heart disease and asthmatics, but also for athletes and healthy people who move at high altitudes (e.g. mountaineers, skiers or sports pilots).

4. Explanation of symbols

The following symbols are used in the instructions for use, on the packaging and on the type plate of the device:

	WARNING Warning of the risk of injury or danger to Your Health		Manufacturer
	DANGER Safety notice regarding possible damage to the device/ Accessories		Applied part type BF
	a notice Note on important information		serial number
	Follow the instructions		CE marking This product meets the requirements of the applicable European and national directives.
	Arterial oxygen saturation of hemoglobin (in Percent)	IP22	Device protected against foreign objects >12.5 mm and against sloping dripping water
	PR bpm pulse rate (beats per minute)		Permissible storage and transport temperature and humidity
	Disposal in accordance with waste electrical and electronic equipment EG-Richtlinie WEEE (Waste Electrical and Electronic Equipment)		Permissible operating temperature and humidity

5. Warnings and Precautions

Read these instructions for use carefully! Failure to observe the following instructions can cause personal injury or damage to property. Keep the instructions for use and make them accessible to other users. Pass on these operating instructions if the device is passed on.

- WARNING**
- Check that all parts specified in the scope of delivery are included.
 - Before use, make sure that the device and accessories do not show any visible damage. If in doubt, do not use it and contact your dealer or the specified customer service address.
 - Do not use any additional parts that are not recommended by the manufacturer or offered as accessories.
 - Under no circumstances may you open or repair the device, as otherwise it cannot be guaranteed that it will function properly. In case of non-compliance the guarantee expires. For repairs, contact Beurer customer service or an authorized dealer.

- Use the pulse oximeter
- NOT if you are allergic to rubber products.
 - NOT if the device or the application finger is wet.
 - NOT on small children or infants.
 - NOT during an MRI or CT scan.
 - NOT during a blood pressure measurement on the arm side with cuff application.
 - NOT on fingers with nail polish, dirt or plaster bandages.
 - NOT on thick fingers that cannot be easily inserted into the device (fingertip: width approx. > 20 mm, thickness >15 mm).
 - NOT on fingers with anatomical changes, edema, scars or burns.
 - NOT on fingers that are too thin and too small, such as those found on small children (width approx. < 10 mm, thickness < 5 mm).
 - NOT on patients who are restless at the application site (eg tremors).
 - NOT in the vicinity of flammable or explosive gas mixtures.

- Prolonged use of the pulse oximeter may cause discomfort or pain for people with circulatory disorders. Therefore, do not use the pulse oximeter on one finger for more than 2 hours.
- Do not carry out any self-diagnosis or treatment based on the measurement results without consulting your doctor. In particular, do not start a new medication on your own and do not make any changes to the type and/or dosage of an existing medication.

- Do not look directly into the inside of the housing during the measurement process. The red light and the invisible infrared light of the pulse oximeter are harmful to the eyes.
- This device is not intended to be used by people (including children) with restricted physical, sensory or mental abilities or lack of experience and/or knowledge, unless they are supervised by a person responsible for their safety or received instructions from her on how to use the device. Children should be supervised to ensure they do not play with the device.

- The display of the pulse wave and the pulse column do not allow any assessment of the pulse or blood flow strength at the measurement location, but only serve to display the current optical signal variation at the measurement location, but they do not enable reliable pulse diagnostics.

- Failure to follow the instructions below may result in inaccurate or erroneous measurements.
- There should be no nail polish, artificial nails or other cosmetics on the measuring finger. • When using the measuring finger, ensure that the fingernail is short enough for the fingertip to cover the sensor elements in the housing.
 - Keep your hand, fingers and body still during the measurement process.
 - In the case of people with cardiac arrhythmias, the measured SpO₂ and heart rate values may be incorrect or the measurement may not be correct at all only possible.
 - Pulse oximeter readings are too high in case of carbon monoxide poisoning.
 - In order not to falsify the measurement result, there should be no strong light sources in the immediate vicinity of the pulse oximeter (e.g fabric lamp or direct sunlight).
 - People who have low blood pressure, suffer from jaundice, or are taking medication to cause vasoconstriction may experience erroneous or falsified measurements.

- In patients who have received clinical dyes in the past and in patients with abnormal hemoglobin levels a false measurement is to be expected. This applies in particular to carbon monoxide poisoning and methaemoglobin poisoning, which are caused, for example, by the administration of local anesthetics or when there is a methaemoglobin reductase deficiency.
- Protect the pulse oximeter from dust, shock, moisture, extreme temperatures and explosive substances.

Notes on handling rechargeable batteries

- If liquid from a battery cell contacts your skin or eyes, wash the affected area with water and get medical attention visit.
- **Danger of swallowing!** Small children could swallow batteries and choke on them. Therefore, keep batteries out of the reach of small children!
- Pay attention to the plus (+) and minus (-) polarity markings.
- If a battery leaks, put on protective gloves and clean the battery compartment with a dry cloth.
- Protect batteries from excessive heat.
- **Danger of explosion!** Do not throw batteries into fire.
- Do not disassemble, open or shred batteries.
- Use only the chargers specified in the instructions for use.
- Batteries must be properly charged before use. The manufacturer's instructions and the information in these instructions for use for the correct loads must always be observed.
- Fully charge the battery before using it for the first time.
- In order to achieve the longest possible battery life, fully charge the battery at least twice a year.

6. Device Description

1. function key
2. finger opening
3. USB port
4. Lanyard Holder / charging indicator light

Display description

1. Alarm icon (crossed out = alarm disabled)
2. Pulse tone icon (crossed out = pulse tone disabled)
3. Time
4. Akku-Anzeige
5. Pulses
6. Pulse rate (value in bpm)
7. Pulsweite
8. SpO₂ alarm (low limit)
9. Oxygen saturation (value in %)
10. Record

7. Commissioning 7.1

Charging the pulse oximeter

If the battery indicator on the display shows a low battery level, you need to charge the pulse oximeter. You can charge the pulse oximeter in two different ways.

Variant 1: Connect the supplied data cable to the USB port of the pulse oximeter. Plug the other (large) end of the data cable into the included charger. Plug the charger into the outlet.

Variant 2: Connect the supplied data cable to the USB port of the pulse oximeter. Plug the other (large) end of the data cable into your computer's USB port.

- a notice**
- During the charging process, the blue charging indicator light on the pulse oximeter lights up. As soon as the battery is fully charged, the blue charging indicator light goes out.

7.2 Install the "SpO₂ Assistant" software

You can transfer the measurement data from the pulse oximeter to your computer using the "SpO₂ Assistant" software. With the "SpO₂ Assistant" you can have your values displayed on the computer screen in real time during the measurement and transfer and manage the previously saved measurement data to the computer.

To install the software, perform the following steps:

- Download the free "SpO₂ Assistant" from our website (www.beurer.com) under Service > Download Center > Software
- Start the installation file "SpO₂Setup.exe"
- Follow the instructions during the installation process.

7.3 Fasten the neck strap

You can attach a lanyard to the device to make it easier to carry the pulse oximeter.

1. Slide the narrow end of the lanyard through the holder as shown.

2. Tighten the other end of the lanyard through the loop of the narrow end.

8. Service

1. Insert an appropriate finger into the finger hole of the pulse oximeter as shown. Keep your finger steady.

2. Press the function key. The pulse oximeter starts measuring. Do not move during the measurement process.

3. Appear on the screen after a few seconds your readings.

- a notice**
- If you pull your finger out of the pulse oximeter, the device switches off automatically after approx. 5 seconds.

8.1 Function Key

The function button of the pulse oximeter has a total of two functions:

- **Power on function:** When the pulse oximeter is off, you can turn it on by pressing the function button.
- **Settings menu function:** To enter the settings menu, first hold the pulse oximeter so that the display screen is in landscape format. To enter the settings menu, press and hold the function button during operation. In the settings menu you can set the following parameters: display brightness, alarm settings, time and data recording.

a notice

The orientation of the display (portrait, landscape) is done automatically. This allows you to read the values on the display at any time, no matter how you hold the pulse oximeter.

8.2 Display-Helligkeit („Brightness“)

- To adjust the display brightness, turn on the pulse oximeter and press and hold the function button. In the settings, select menu by briefly pressing the function key to select the "System" menu item. You confirm your selection by pressing and holding the function key. In the "System" menu item, select "Brightness" again. You can switch between different brightness levels by long pressing the function button.

- To exit the settings menu, use the function key to select the menu item "Exit" and confirm by pressing and holding the function key.

8.3 Alarm Settings ("Alarm")

- Turn on the pulse oximeter and press and hold the function button. The settings menu appears on the display.
- In the settings menu, use the function button to select the menu item "Sound" and confirm by pressing and holding the function button.
- Use the function key to select your desired parameter and set your desired value by pressing and holding the function key a.

In the alarm menu you can set the following parameters:

„Direction“	Here you can set whether the setting value runs up ("up") or down ("down") when setting the alarm limits in the alarm menu. Changing the setting direction is necessary if limit values are to be increased ("up") or decreased ("down").
„SPO2 ALM HI“	Here you can set an upper limit for the oxygen saturation. If a measurement exceeds the set limit, the saturation value will turn yellow and a beep will sound (if alarm is enabled).
„SPO2 ALM LO“	Here you can set a lower limit for the oxygen saturation. If a measurement falls below the set limit, the saturation value appears in yellow and a beep sounds (if alarm is activated).
PR ALM HI“	Here you can set an upper limit for the heart rate. If a measurement exceeds the set limit, the pulse rate will appear in yellow and a beep will sound (if alarm is enabled).
PR ALM LO“	Here you can set a lower limit for the heart rate. If a measurement falls below the set limit, the pulse rate appears in yellow and a beep sounds (if alarm is activated).
„Alarm“	Here you can activate ("on") or deactivate ("off") the alarm. If you have activated the alarm and one of the set upper or lower limit values is exceeded or not reached, a signal tone sounds.
„Pulse Sound“	Here you can activate ("on") or deactivate ("off") the pulse tone. If you have activated the pulse tone, a signal tone sounds during the measurement with each pulse beat.

- To exit the alarm menu, use the function key to select the menu item "Exit" and confirm by pressing and holding the function onstaste.

8.4 Set time

You have two options to set the time:

Option 1: Synchronize device time via connection with PC software
After you have connected the device to the "SpO₂ Assistant" software according to the "PC Software" chapter, select "Options" and "Synchronize Device Time" in the PC software to synchronize the device time.

Option 2: Set device time manually
From the main menu, press the function button until "Clock" is selected, then hold to enter the sub-menu.

Press the function button until the desired option is selected, then hold to change the value.

"Set Time": set the time, "yes": allow, "no": prohibit
"Set Year": set the year
"Set Month": set month
"Set Day": set day
"Set Hour": set the hour
"Set Minute": set the minute

After setting, press the function button until "Exit" is selected, then hold to exit the time setting and return to the main menu.

8.5 System Settings

From the main menu, press the function button until System is selected, then hold to enter the system menu.

Press the function button until the desired option is selected, then hold to change the value.

"Hard.Ver.": Hardware-Version
"Soft.Ver.": Software-Version
"ID": username
"Demo": set demo mode; "on": activate demo mode, "off": deactivate demo mode
"Sound Volume": Set the volume in the range 1-3

Once set, press the function button until "Exit" is selected, then hold to exit the system menu and return to the main menu.

8.6 Recording measurement data ("Record")

With the pulse oximeter PO 80 you can record your measurement data over a period of up to 24 hours. If you wish, you can save the recorded measurement data on the computer or print it out as a report.

In the main menu, press the function button until "Record" is selected, then hold it down to enter the "Record Menu". When measuring, if the red dot "Rx" flashes, it means that the device records.

Press the function button until the desired option is selected, then hold to change the value.

"Mode": Selection of the recording mode from "Auto" (automatic) and "Manual" (manual) In manual mode, recording can be (de)activated using "Record".

Automatic recording starts as soon as stable data is acquired and ends when the finger is pulled out (maximum 99 data groups). The maximum recording time is 72 hours.

In manual recording, up to 24 hours can be recorded.

If the memory is full, "Memory is full!" will be displayed and the device will go into standby mode after a few seconds. After the next exit from the standby mode, "Memory is full!" is displayed to alert the user that the memory is full. Press the function button again to go to the measurement screen.

- a notice**
- When you start a new recording, the previous recording is automatically and **irrevocably overwritten**. The maximum recording time is 24 hours.

8.7 PC Software ("SpO₂ Assistant")

With the PC software "SpO₂ Assistant" you can transfer your stored data as well as display and record a current measurement.

To do this, connect the pulse oximeter to your PC using the supplied USB data cable. Start the program on your PC. You can download the "SpO₂ Assistant" PC software from connect.beurer.com/download. The corresponding system requirements can be found at: <https://www.beurer.com/web/de/im-fokus/connect/systembedingungen.php> Further application details for the software can be found in the software under the "Instructions" tab.

9. Assess measurement results

WARNING
The following table for assessing your measurement results does NOT apply to people with certain pre-existing conditions (e.g. asthma, cardiac insufficiency, respiratory diseases) and those staying at altitudes over 1500 meters. If you have any pre-existing conditions, always consult your doctor to evaluate your readings.

Measurement result SpO ₂ (oxygen saturation) in %	classification / Actions to take
99-94	normal range
94-90	Degraded area: Doctor visit recommended
< 90	Critical area: Consult a doctor urgently

Source: Based on "Windisch W et al. S2k guideline: Non-invasive and invasive ventilation as therapy for chronic respiratory insufficiency Revision 2017; Pneumology 2017; 71: 722795"

Altitude dependent drop in oxygen saturation		
a notice		
The table below informs you about the effects of different altitudes on the oxygen saturation value and their consequences for the human organism. The table below does NOT apply to people with certain pre-existing conditions (e.g. asthma, cardiac insufficiency, respiratory diseases, etc.). Symptoms (e.g. hypoxia) can already occur at lower altitudes in persons with pre-existing conditions.		
altitude	to be expected SpO ₂ value (oxygen saturation) in %	consequences for humans
1500-2500 m	> 90	No altitude sickness (in the Rule)
2500-3500 m	~90	Altitude sickness, adaptation recommended
3500-5800 m	<90	Very frequent occurrence of a Altitude sickness, adaptation mandatory
5800-7500 m	<80	Severe hypoxia, only temporary stay possible
7500-8850 m	<70	Immediate acute danger to life

Quelle: Hackett PH, Roach RC: High-Altitude Medicine. In: Auerbach PS (ed): Wilderness Medicine, 3rd edition; Mosby, St.Louis, MO 1995; 1-37.

10. Cleaning / Maintenance

- CAUTION:**
- Do not use high-pressure sterilization on the pulse oximeter!
- Never hold the pulse oximeter under water, otherwise liquid can penetrate and damage the pulse oximeter.
- After each use, clean the housing and the rubberized inner surface of the pulse oximeter with a soft, medical-grade alcohol get a damp cloth.

11. Retention

DANGER:

Store the pulse oximeter in a dry environment (relative humidity > 95%). Excessive humidity can shorten the life of the pulse oximeter or damage it. Store the pulse oximeter in a place where the ambient temperature is between -40°C and 60°C.

12. Disposal

General disposal In the interest of environmental protection, the device must not be disposed of with household waste at the end of its service life. Disposal can take place at appropriate collection points in your country. Dispose of the device in accordance with the EC directive for waste electrical and electronic equipment – WEEE (Waste Electrical and Electronic Equipment). If you have any questions, please contact the local authority responsible for disposal.

battery disposal

- You must take the used, completely discharged batteries to specially marked collection containers, hazardous waste collection points or dispose of via the electronics retailer. You are legally obliged to dispose of the batteries.
- You will find these symbols on batteries containing harmful substances:
Pb = battery contains lead,
Cd = battery contains cadmium,
Hg = battery contains mercury.

13. What to do in case of problems?

Problem	Possible Cause	fix
The pulse oximeter shows no readings	The battery of the pulse oximeter is empty	Charge the battery via the USB port
Pulse oximeter shows measurement interruptions or high jumps in measured values	Insufficient blood flow to the measuring finger	Observe the warnings and safety instructions in Chapter 5
	Measuring finger is too big or too small	Fingertip must have the following dimensions: Width between 10 - 22 mm Thickness between 5-15mm
	Finger, hand or body is inside Movement cardiac arrhythmias	Keep your fingers, hand and body still during the measurement Consult a doctor

14. Specifications

Model no.	AFTER 80
measurement method	Non-invasive fingertip measurement of arterial hemoglobin oxygen saturation and pulse rate
measuring range	SpO ₂ 0 – 100%, Pulse 30-250 beats/minute
accuracy	SpO ₂ 70 – 100%, ±2%, Pulse 30 - 250 bpm, ±2 beats/minute
Dimensions	L 57 mm x B 32 mm x H 30 mm
Weight	Approx.
Sensor technology for measuring SpO ₂	42 g red light (wavelength 660 nm); infrared (wavelength 905 nm); Silicon receiver diode
Permissible operating conditions	+10°C to +40°C, γ 75% relative humidity, 700–1060 hPa ambient pressure
Permitted Storage Conditions	-40°C to +60°C, γ 95% relative humidity, 500–1060 hPa ambient pressure
power supply	Built-in rechargeable lithium battery 500mAh / 3.7V
classification	IP22, type BF applied part
System requirements for software	Supported operating systems: from Windows 8.1

The serial number can be found on the device or in the battery compartment.

- Specifications are subject to change without notice for update reasons.
- This device conforms to European standards EN 60601-1 and EN 60601-1-2 (compliance with CISPR 11, CISPR 22, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, IEC 61000-4-11) and is subject to special precautions regarding electromagnetic compatibility . Please note that portable and mobile HF communications equipment can affect this device. You can request more detailed information from the customer service address provided.
 - The device meets the requirements of the European Medical Devices Directive 93/42/EEC, the Medical Devices Act. According to the "Operator Regulations for Medical Devices", regular metrological checks must be carried out if the device is used for commercial or economic purposes. Even for private use, we recommend that you have a metrological check at the manufacturer's every 2 years.

Notes on Electromagnetic Compatibility

- WARNING**
- The device is suitable for use in all environments specified in this user manual, including domestic ones
 - Vicinity.
 - The device may have limited usability in the presence of electromagnetic disturbances. As a result, error messages or a failure of the display/device may occur.
- The use of this device adjacent to other devices or stacked with other devices should be avoided as it may result in improper operation. If use of the prescribed type is nevertheless necessary, this device and the other devices should be observed to ensure that they are working properly.
- The use of accessories other than those specified or provided by the manufacturer of this device can result in increased electromagnetic interference emissions or reduced electromagnetic interference immunity of the device and lead to incorrect operation.
- Keep portable RF communications equipment (including peripherals such as antenna cables or external antennas) at least 30cm away from any part of the equipment, including any cables provided. Non-observance can lead to a reduction in the performance characteristics of the device.
- Non-observance can lead to a reduction in the performance characteristics of the device.

15. Warranty/Service

Beurer GmbH, Söflinger Straße 218, D-89077 Ulm (hereinafter referred to as "Beurer") grants a guarantee for this product under the following conditions and to the extent described below.

The following warranty conditions do not affect the statutory warranty obligations of the seller from the purchase contract with the buyer.

The guarantee also applies without prejudice to mandatory statutory liability regulations.

Beurer guarantees the flawless functionality and completeness of this product.

The worldwide guarantee period is 5 years from the start of the purchase of the new, unused product by the buyer.

This guarantee only applies to products that the buyer has purchased as a consumer and uses exclusively for personal purposes within the framework of domestic use. German law applies.

If this product proves to be incomplete or defective in terms of functionality during the guarantee period in accordance with the following provisions, Beurer will carry out a replacement delivery or repair free of charge in accordance with these guarantee conditions.

If the buyer would like to report a warranty claim, they should first contact Beurer Customer Service: Beurer GmbH, Service Center Tel: +49 731 3989-144

For speedy processing, please use our contact form on the website www.beurer.com under the heading "Service".

The buyer then receives more detailed information on how to process the guarantee case, eg where to send the product free of charge and which documents are required.

A claim under the guarantee can only be considered if the buyer can present - a copy of the invoice/purchase receipt and - the original product to Beurer or an authorized Beurer partner.

Specifically excluded from this warranty are - wear and tear resulting from normal use or consumption of the product:
- accessories supplied with this product that wear out or are used up with proper use (e.g. batteries, rechargeable batteries, cuffs, seals, electrodes, lamps, attachments, inhaler accessories); - Products that have been used, cleaned, stored or serviced improperly and/or contrary to the provisions of the operating instructions, as well as products that have been opened, repaired or modified by the buyer or a service center not authorized by Beurer; - Damage occurring on the transport route between the manufacturer and the customer or between the service center and the customer

- Products purchased as 2nd choice or used items;
- Consequential damage based on a defect in this product (in this case, however, there may be claims from product liability or other mandatory statutory liability provisions).

Repairs or a complete replacement do not extend the warranty period under any circumstances.

