

Operating  0°C 40°C 100%	Permissible operating temperature and humidity	IP 22	Device protected against foreign objects ≥12.5 mm and against water dripping at an angle
Disposal 	Disposal in accordance with the Waste Electrical and Electronic Equipment EC Directive – WEEE		

5. Warnings and safety notes

Read these instructions for use carefully! Non-observance of the following information may result in personal injury or material damage. Store these instructions for use and make them accessible to other users. Make sure you include these instructions for use when handing over the device to third parties.

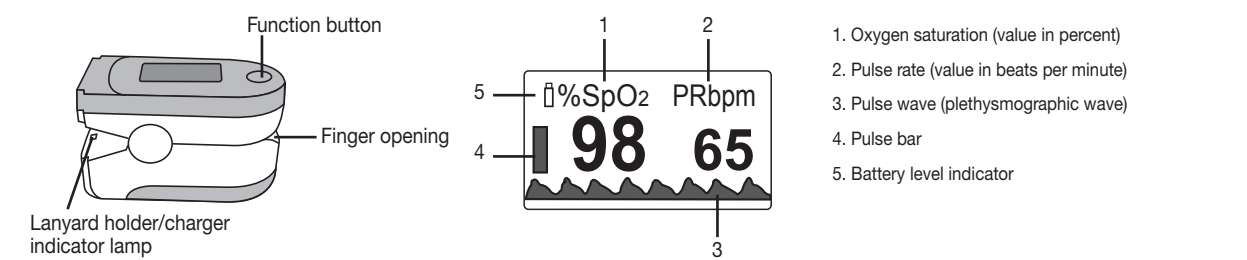
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WARNING
- Check to ensure that the package contains all the parts that should be included in the delivery.
 - Check the pulse oximeter regularly before use to ensure that there is no visible damage to the device and the batteries are still sufficiently charged. In case of doubt, do not use the device and contact Beurer customer services or an authorised retailer.
 - Do not use any additional parts that are not recommended by the manufacturer or offered as equipment.
 - Under no circumstances should you open or repair the device yourself, as faultless functionality could no longer be guaranteed thereafter. Failure to comply will result in voiding of the warranty. For repairs, please contact Beurer customer services or an authorised retailer.

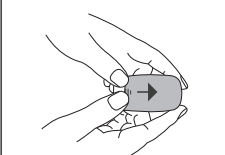
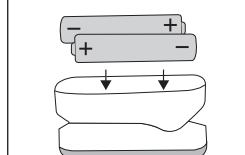
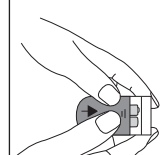
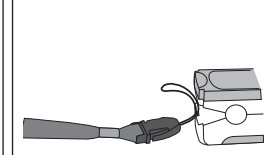
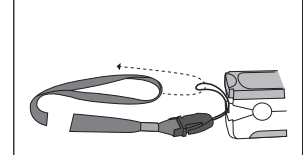
- Do NOT use the pulse oximeter
- If you are allergic to rubber products.
 - if the device or the finger you are using is damp.
 - on small children or babies.
 - during an MRI or CT scan.
 - whilst taking a blood pressure measurement on the same arm using a cuff.
 - on fingers that have nail varnish on, are dirty or have a plaster or other dressing on them.
 - on large fingers that do not fit into the device easily (fingertip: width approx. > 20 mm, thickness approx. >15 mm).
 - on fingers with anatomical changes, oedemas, scars or burns.
 - on fingers that are too small, as with small children for example (width approx. < 10 mm, thickness approx. < 5 mm).
 - on patients who are not steady at the site of application (e.g. trembling).
 - near flammable or explosive gas mixtures.
 - Using the pulse oximeter for long periods may cause pain for people with circulatory disorders. Therefore do not use the pulse oximeter for longer than approx. 2 hours on one finger.
 - The pulse oximeter displays an instantaneous measurement but cannot be used for continuous monitoring.
 - The pulse oximeter does not have an alarm function and is therefore not suitable for evaluating medical results.
 - Do not self-diagnose or self-medicate on the basis of the measurements without consulting your doctor. In particular, do not start taking any new medication or change the type and/or dosage of any existing medication without prior approval.
 - Do not look directly inside the housing during the measurement. The red light and the invisible infra-red light in the pulse oximeter are harmful to your eyes.
 - This device is not intended for use by people (including children) with restricted physical, sensory or mental skills or a lack of experience and/or a lack of knowledge, unless they are supervised by a person who has responsibility for their safety or they receive instructions from this person on how to use the device. Supervise children around the device to ensure they do not play with it.
 - The display for the pulse wave and pulse bar do not allow the strength of the pulse or circulation to be evaluated at the measurement site. Rather, they are exclusively used to display the current visual signal variation at the measurement site and do not enable reliable diagnostics for the pulse.

- Non-observance of the following instructions can lead to incorrect or failed measurements.
- There must not be any nail varnish, artificial nails or other cosmetics on the finger to be measured.
 - Ensure that the finger nail on the finger to be measured is short enough that the fingertip covers the sensor elements in the housing.
 - Keep your hand, finger and body steady during the measurement.
 - For people with cardiac arrhythmia, the measurement values of SpO₂ and the heart rate may be incorrect or the measurement may not be possible at all.
 - In cases of carbon monoxide poisoning, the pulse oximeter displays a measurement value that is too high.
 - To avoid falsifying the measurement, there should not be any strong light sources (e.g. fluorescent lamps or direct sunlight) in the immediate vicinity of the pulse oximeter.
 - People with low blood pressure, who suffer from jaundice or take medication for vascular contraction, may experience incorrect or falsified measurements.
 - Incorrect measurements are likely for patients who have been administered medical dye in the past or for those who have abnormal haemoglobin levels. This applies in particular for cases of carbon monoxide poisoning and methaemoglobin poisoning, which can occur for example from the administration of local anaesthetics or from an existing methaemoglobin reductase deficiency.
 - Protect the pulse oximeter from dust, shocks, moisture, extreme temperatures and explosive materials.
- Notes on handling batteries**
- If your skin or eyes come into contact with battery fluid, rinse the affected areas with water and seek medical assistance.
 - Choking hazard! Small children may swallow and choke on batteries. Store the batteries out of the reach of small children.
 - Observe the plus (+) and minus (-) polarity signs.
 - If a battery has leaked, put on protective gloves and clean the battery compartment with a dry cloth.
 - Protect batteries from excessive heat.
 - Risk of explosion! Never throw batteries into a fire.
 - Do not charge or short-circuit batteries.
 - If the device is not to be used for a relatively long period, take the batteries out of the battery compartment.
 - Use identical or equivalent battery types only.
 - Always replace all batteries at the same time.
 - Do not use rechargeable batteries.
 - Do not disassemble, open or crush the batteries.

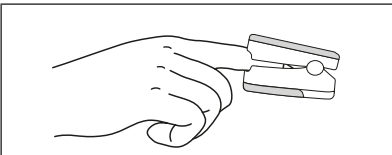
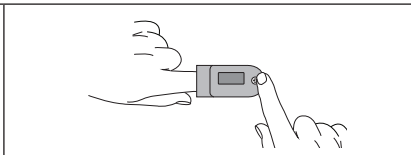
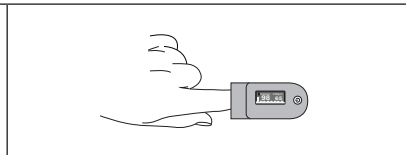
6. Unit description



7. Initial use

7.1 Inserting the batteries			7.2 Attaching the lanyard	
To transport the pulse oximeter more easily you can attach a lanyard to the device.				
				
1. Slide the battery compartment lid open.	2. Insert the two supplied batteries into the pulse oximeter battery compartment following the correct polarity as shown.	3. Close the battery compartment cover again.	1. Insert the narrow end of the lanyard through the holder as shown.	2. Draw the other end of the lanyard through the loop at the narrow end and tighten.

8. Operation

		
1. Insert one finger into the finger opening of the pulse oximeter as shown and hold it steady.	2. Press the function button. The pulse oximeter begins its measurement. Do not move during the measurement.	3. Your measurement values will appear on the screen after a few seconds.

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Note
- When you remove your finger from the pulse oximeter, the device will automatically switch off after approx. 10 seconds.

Function button

- The function button on the pulse oximeter has four functions in total:
- Switch-on function:** When the pulse oximeter is switched off you can hold down the function button briefly to switch it on.
 - Data transfer plus synchronisation of time and date:** When the pulse oximeter is switched off you can hold down the function button (for at least 5 seconds) to transfer the data to the app.
 - Display function:** To select your desired display format (vertical format, horizontal format), hold down the function button briefly during operation.
 - Brightness function:** To select your desired display brightness, hold down the function button for slightly longer during operation.

9. System requirements for the Beurer HealthManager PC software.

- Supported operating systems:
 - Windows XP SP3
 - Windows Vista SP1 or later
 - Windows 7
 - Windows 7 SP1
 - Windows 8
- Supported architectures:
 - x86 (32 bit)
 - x64 (64 bit)
- Hardware requirements:
 - Recommended: at least Pentium 1 GHz or faster with at least 1 GB RAM
 - Free memory on the primary partition of at least:
 - x86 – 600 MB
 - x64 – 1.5 GB
 - Graphic resolution at least: 1024 x 768 pixels

10. Transfer of measured values via Bluetooth® Smart

- It is also possible to transfer the measured values saved on the device to your smartphone via *Bluetooth®* Smart. You will need the Beurer HealthManager app for this. This is available for free in the App Store and from Google Play. Proceed as follows to transfer values:
- Activate *Bluetooth®* in your smartphone settings and open the app.
 - With the device switched off, hold down the function button for 5 seconds. "SYNC" will flash on the display.
 - The device now attempts to connect to the app for approx. 10 seconds.
 - "SYNC" stops flashing as soon as a connection is established.
 - All measurement data in the memory is automatically transferred to the app. The device will then switch off automatically.

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Note
- Bluetooth®* is activated automatically.
 - The Beurer Health Manager app must be activated to allow data transfers.
 - Each time data is transferred, the time and date are synchronised with the smartphone.

11. Evaluating measurement results

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WARNING

The following table for evaluating your measurements does NOT apply to people with certain pre-existing conditions (e.g. asthma, heart failure, respiratory diseases) or whilst staying at altitudes above 1500 metres. If you have a pre-existing condition, always consult your doctor to evaluate your measurements.

SpO ₂ (oxygen saturation) measurement in %	Classification/measures to be taken
99-94	Normal range
94-90	Decreased range: Visit to the doctor recommended
< 90	Critical range: Seek medical attention urgently

Decline in oxygen saturation depending on altitude

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Note

The following table informs you of the effects of various altitudes on oxygen saturation value and its impact on the human body. The following table does NOT apply to people with certain pre-existing conditions (e.g. asthma, heart failure, respiratory diseases etc.). People with pre-existing conditions can show signs of illness (e.g. hypoxia) at lower altitudes.

Altitude	Expected SpO ₂ value (oxygen saturation) in %	Impact on human body
1500-2500 m	> 90	No altitude sickness (normally)
2500-3500 m	~90	Altitude sickness, acclimatisation recommended
3500-5800 m	<90	Very frequent altitude sickness, acclimatisation absolutely essential
5800-7500 m	<80	Severe hypoxia, only limited length of stay possible
7500-8850 m	<70	Immediate, acute danger to life

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

12. Maintenance/cleaning

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IMPORTANT:
- Do not use high-pressure sterilisation on the pulse oximeter! Under no circumstances should you hold the pulse oximeter under water, as this can cause liquid to enter and damage the pulse oximeter.
- Clean the housing and the interior rubber surface with a soft cloth dampened with medical alcohol after each use.
 - If a low battery status appears on the display of the pulse oximeter, change the batteries.
 - If you are not going to use the pulse oximeter for more than one month, remove both batteries from the device to avoid possible leaking.

13. Storage

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IMPORTANT:
- Store the pulse oximeter in a dry place (relative humidity ≤ 95%). If the humidity is too high it may shorten the service 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.

14. Disposal

- The empty, completely flat batteries must be disposed of through specially designated collection boxes, recycling points or electronics retailers. You are legally required to dispose of the batteries.
 - The codes below are printed on batteries containing harmful substances:
 - Pb = Battery contains lead,
 - Cd = Battery contains cadmium,
 - Hg = Battery contains mercury
- For environmental reasons, do not dispose of the device in the household waste at the end of its useful life. Dispose of the device at a suitable local collection or recycling point. Dispose of the device in accordance with EC Directive – WEEE (Waste Electrical and Electronic Equipment). If you have any questions, please contact the local authorities responsible for waste disposal.



15. What if there are problems?

Problem	Possible cause	Solution
The pulse oximeter is not displaying measurement values.	The batteries in the pulse oximeter are empty.	Replace the batteries.
	Batteries not inserted correctly.	Reinsert the batteries. If after reinserting the batteries correctly there are still no measurement values displayed, contact customer services.
The pulse oximeter is displaying measurement interruptions or high measurement value jumps.	Insufficient circulation in the measurement finger.	Observe the warnings and safety notes in section 5.
	Measurement finger is too large or too small.	Fingertip must have the following measurements: Width between 10 and 20 mm. Thickness between 5 and 15 mm.
	Finger, hand or body is moving.	Keep your finger, hand and body still during the measurement.
	Cardiac arrhythmia.	Seek medical attention.
No data transfer possible for measured values.	Beurer HealthManager app is not activated or <i>Bluetooth®</i> is switched off in the smartphone settings.	Activate <i>Bluetooth®</i> on the smartphone and start the app.
	The batteries in the pulse oximeter are too low or are empty.	Replace the batteries.

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16. Technical data

Model No.	PO 60
Measurement method	Non-invasive measurement of arterial oxygen saturation of haemoglobin and pulse rate in finger
Measurement range	SpO ₂ 0 – 100%, pulse 0 – 254 beats/minute
Accuracy	SpO ₂ 70 – 100%, ±2%, pulse 30 – 250 bpm, ±2 beats/minute
Dimensions	L 258 mm x W 32 mm x H 34 mm
Weight	Approx. 294 g (without batteries)
Sensor to measure SpO ₂	Red light (wave length 660 nm); infra-red (wave length 905 nm); silicon receiver diode
Permissible operating conditions	+10°C to +40°C, ≤ 75% relative humidity, 700 – 1060 hPa ambient pressure
Permissible storage conditions	-40°C to +60°C, ≤ 95 % relative humidity, 500 – 1060 hPa ambient pressure
Power supply	2 x 1.5V — — AAA batteries
Battery life	2 AAA batteries last for approx. 2 years of operation at 3 measurements per day (each of 60 seconds).
Classification	IP22, application part, type BF
Data transfer via <i>Bluetooth®</i> wireless technology	The pulse oximeter uses <i>Bluetooth®</i> Smart (low energy), 2.4 GHz frequency band, Compatible with <i>Bluetooth</i> 4.0 smartphones/tablets
	List of supported smartphones/tablets

Technical information is subject to change without notification to allow for updates.

- This device complies with European Standard EN60601-1-2 and is subject to particular precautions with regard to electromagnetic compatibility. Please note that portable and mobile HF communication systems may interfere with this unit. More details can be requested from the stated Customer Services address or found at the end of the instructions for use.
- This device complies with EU Directive 93/42/EC concerning medical devices, the Medizinproduktegesetz (German Medical Devices Act) and the DIN EN ISO 80601-2-61 standard (Medical electrical equipment – Particular requirements for the basic safety and essential performance of pulse oximeter equipment for medical use).
- We hereby guarantee that this product complies with the European R&TTE Directive 1999/5/EC. Please contact the specified service address to obtain more detailed information such as the CE conformity declaration.

Guidance and manufacture's declaration-electromagnetic emission for all EQUIPMENT and SYSTEMS

Guidance and manufacture's declaration –electromagnetic emission		
The PO60 Pulse Oximeter is tended for use in the electromagnetic environment specified below. The customer of the user of the PO60 Pulse Oximeter should assure that it issued in such an environment.		
RF emissions CISPR 11	Group 1	The PO60 Pulse Oximeter uses RF energy only for their internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment.
RF emissions CISPR 11	Class B	The PO60 Pulse Oximeter is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.
Harmonic emissions IEC 61000-3-2	Not applicable	
Voltage fluctuations/ flicker emission IEC 61000-3-3	Not applicable	

Guidance and manufacture's declaration-electromagnetic immunity for all EQUIPMENT and SYSTEMS

Guidance and manufacture's declaration-electromagnetic immunity			
The PO60 Pulse Oximeter is intended for use in the electromagnetic environment specified specified below. The user of PO60 Pulse Oximeter should assure that it is used in such an environment.			
Immunity test	IEC60601 test level	Compliance level	Electromagnetic environment-guidance
Electrostatic discharge (ESD) IEC 61000-4-2	±6kV contact ±8kV air	±6kV contact ±8kV air	Floors should be wood, concrete or ceramic tile. If floor are covered with synthetic material, the relative humidity should be at least 30%.
Power frequency (50Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital environment

Guidance and manufacture's declaration-electromagnetic immunity for EQUIPMENT and SYSTEMS that are not LIFE-SUPPORTING

Guidance and manufacture's declaration-electromagnetic immunity			
The PO60 Pulse Oximeter is intended for use in the electromagnetic environment specified below. The customer or the user of PO60 Pulse Oximeter should assure that it is used in such an environment.			
Immunity test	IEC60601 test level	Compliance level	Electromagnetic environment -guidance
Radiated RF ICE 61000-4-3	3V/m 80MHz to 2.5GHz	3V/m	Portable and mobile RF communication equipment should be used no closer to any part of the PO60 Pulse Oximeter, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. recommended separation distance $d = \left[\frac{3.5}{E_1} \right] \sqrt{P} \quad 80\text{MHz to } 800\text{MHz}$ $d = \left[\frac{7}{E_1} \right] \sqrt{P} \quad 800\text{MHz to } 2.5\text{GHz}$ Where <i>P</i> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and <i>d</i> is the recommended separation distance in meters (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, * should be less than the compliance level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol: 
NOTE 1 At 80MHz and 800MHz, the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			
* Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which The PO60 Pulse Oximeter is used exceeds the applicable RF compliance level above, the PO60 Pulse Oximeter should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the PO60 Pulse Oximeter.			
° Over the frequency range 150 KHz to 80 MHz, field strengths should be less than 3V/m.			

Recommended separation distances between portable and mobile RF communications equipment and the EQUIPMENT or SYSTEM for EQUIPMENT or SYSTEM that not LIFE-SUPPORTING

Recommended separation distances between portable and mobile RF communications equipment and the PO30 Pulse Oximeter			
The PO60 Pulse Oximeter is intended for use in the electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the PO60 Pulse Oximeter can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the PO60 Pulse Oximeter as recommended below, according to the maximum output power of the communications equipment.			
Rated maximum output power of transmitter (W)	Separation distance according to frequency of transmitter (m)		
	150KHz to 80MHz	80MHz to 800MHz	800MHz to 2.5GHz
	$d = \left[\frac{3.5}{E_1} \right] \sqrt{P}$	$d = \left[\frac{3.5}{E_1} \right] \sqrt{P}$	$d = \left[\frac{7}{E_1} \right] \sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.37	0.37	0.74
1	1.17	1.17	2.33
10	3.69	3.69	7.38
100	11.67	11.67	23.33
For transmitters rated at a maximum output power not listed above, the recommended separation distanced in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where <i>P</i> is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.			
NOTE 1 At 80MHz and 800MHz, the separation distance for the higher frequency range applies. NOTE 2 These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.			