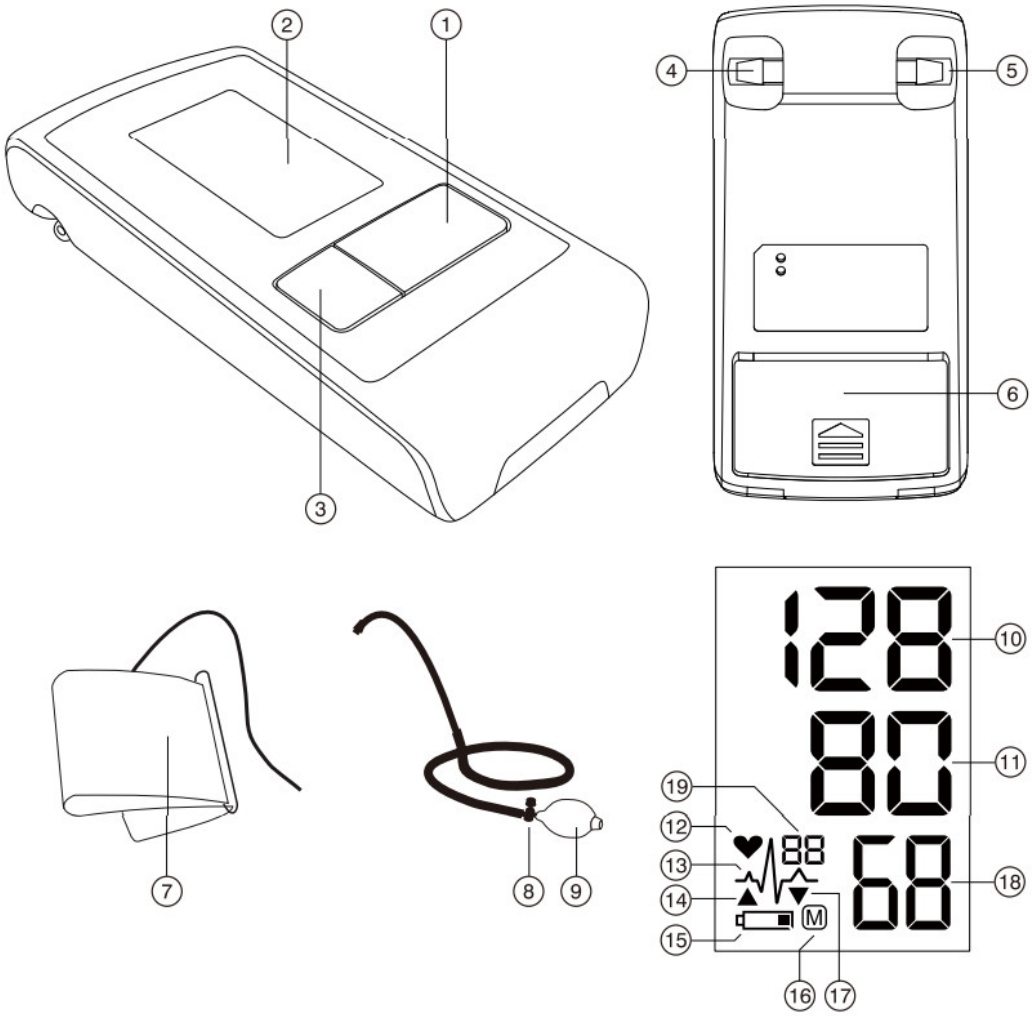
microlife BP N1 Basic Arterial Meter Instruction Manual

microlife®

BP N1 Basic

Contents

BP N1 Basic Arterial Meter



1. ON/OFF button
2. Display
3. M-button (memory)
4. Pump Ball Pin
5. Cuff Pin
6. Battery Compartment

7. Cuff
8. Quick-acting Discharge Valve
9. Pump ball

Display

10. Systolic Value
11. Diastolic Value
12. Pulse and Hypertension Indicator
13. Pulse Arrhythmia Indicator (PAD)
14. Air Pump-up
15. Battery Display
16. Stored Value
17. Air Discharge
18. Pulse Rate
19. Memory Number

Dear Customer,

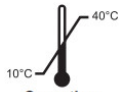
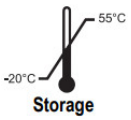
This device was developed in collaboration with physicians and clinical tests carried out prove its measurement accuracy to be of a very high standard.*

If you have any questions, problems or want to order spare parts please contact your local Microlife-Customer Service. Your dealer or pharmacy will be able to give you the address of the Microlife dealer in your country. Alternatively, visit the internet at **www.microlife.com** where you will find a wealth of invaluable information on our products.

Stay healthy – Microlife AG!

* This device uses the same measuring technology as the
«BP 3BTO-H» model tested according to the protocol of the European Society for Hypertension (ESH).

Explanation of Symbols

	Batteries and electronic devices must be disposed of in accordance with the locally applicable regulations, not with domestic waste.
	Read the instructions carefully before using this device.
	Type BF applied part
	Keep dry
	Conformity mark
	Type approval of measuring device
	Serial number
	Catalogue number
	Manufacturer
	Class II equipment
	Operating temperature restriction 10 – 40 °C
	Storage temperature restriction -20 – +55 °C
	CE Marking of Conformity

Important Facts about Blood Pressure and SelfMeasurement

- Blood pressure is the pressure of the blood flowing in the arteries generated by the pumping of the heart. Two values, the systolic (upper) value and the diastolic (lower) value, are always measured.
- The device indicates the pulse rate (the number of times the heart beats in a minute).
- Permanently high blood pressure values can damage your health and must be treated by your doctor!
- Always discuss your values with your doctor and tell him/her if you have noticed anything unusual or feel unsure. Never rely on single blood pressure readings.
- There are several causes of excessively high blood pressure values. Your doctor will explain them in more detail and offer treatment where appropriate. Besides medication, weight loss and exercise can also lower your blood pressure.
- Under no circumstances should you alter the dosages of drugs or initiate a treatment without consulting your doctor.
- Depending on physical exertion and condition, blood pressure is subject to wide fluctuations as the day progresses. You should therefore take your measurements in the same quiet conditions and when you feel

relaxed! Take at least two readings every time (in the morning and in the evening) and average the measurements.

- It is quite normal for two measurements taken in quick succession to produce significantly different results.
- Deviations between measurements taken by your doctor or in the pharmacy and those taken at home are quite normal, as these situations are completely different.
- Several measurements provide much more reliable information about your blood pressure than just one single measurement.
- Leave a small break of at least 15 seconds between two measurements.
- If you suffer from an irregular heartbeat (arrhythmia, see «Section 5.»), measurements taken with this device should be evaluated with your doctor.
- The pulse display is not suitable for checking the frequency of heart pacemakers!
- If you are pregnant, you should monitor your blood pressure regularly as it can change drastically during this time.

☞ This monitor is specially tested for use in pregnancy and pre-eclampsia. When you detect unusual high readings in pregnancy, you should measure after a short while again (eg. 1 hour). If the reading is still too high, consult your doctor or gynecologist.

How do I evaluate my blood pressure?

Table for classifying home blood pressure values in adults in accordance with the international Guidelines (ESH, ESC JSH). Data in mmHg.

Range		**Systolic**	**Diastolic**	**Recommendation**
1	blood pressure normal	< 120	< 74	Self-check
2	blood pressure optimum	120 – 129	74 – 79	Self-check
3	blood pressure elevated	130 – 134	80 – 84	Self-check
4	blood pressure too high	135 – 159	85 – 99	Seek medical advice
5	blood pressure dangerously hig h	≥ 160	≥ 100	Urgently seek medical advice!

The higher value is the one that determines the evaluation.
Example: a blood pressure value of 140/80 mmHg or a value of 130/90 mmHg indicates «blood pressure too high».

Using the Device for the First Time

Inserting the batteries

After you have unpacked your device, first insert the batteries. The battery compartment 6 is at the back of the device. Insert the batteries (2 x 1.5 V, size AAA), thereby observing the indicated polarity.

Selecting the correct cuff

Microlife offers different cuff sizes. Select the cuff size to match the circumference of your upper arms (measured by close fitting in the centre of the upper arm).

Cuff size	for circumference of upper arm
S	17 – 22 cm
M	22 – 32 cm
L	32 – 42 cm

☞ Only use Microlife cuffs.
☞ When using an L cuff with this device, be sure to only use it with the corresponding black deflation valve.
▶ Contact your local Microlife Service if the enclosed cuff 7 does not fit.
▶ Connect the cuff tube to the cuff pin 5 as far as it will go.

Connecting the pump ball

Connect the tube of the pump ball 9 to the pump ball pin 4.
☞ The pump ball and cuff can be placed on either pin 4 or 5.

Taking a Blood Pressure Measurement

Checklist for taking a reliable measurement

1. Avoid activity, eating or smoking immediately before the measurement.
2. Sit down on a back-supported chair and relax for 5 minutes.
   Keep the feet flat on the floor and do not cross your legs.
3. Always measure on the same arm (normally left). It is recommended that doctors perform double arm measurements on a patients first visit in order to determine which arm to measure in the future. The arm with the higher blood pressure should be measured.
4. Remove close-fitting garments from the upper arm. To avoid constriction, shirt sleeves should not be rolled up – they do not interfere with the cuff if they are laid flat.
5. Always ensure that the correct cuff size is used (marking on the cuff).
   – Fit the cuff closely, but not too tight.
   – Make sure that the cuff is positioned 1-2 cm above the elbow.
   – The artery mark on the cuff (ca. 3 cm long bar) must lie over the artery which runs down the inner side of the arm.
   – Support your arm so it is relaxed.
   – Ensure that the cuff is at the same height as your heart.
6. Switch on the device and wait until «0» appears in the display and the arrow «▲» AN starts to flash.
7. Take the pump ball in your free hand (the arm you are not measuring from) and pump up the cuff. Watch the pressure indication in the display and pump approx. 40 mmHg higher than the expected systolic value (the upper value). If you have not pumped enough, a flashing arrow «▲» AN will appear telling you to pump higher.
8. After pumping, the measurement is taken automatically. Relax, do not move and do not tense your arm muscles until the measurement result is displayed. Breathe normally and do not talk.
9. During the measurement, the pulse indicator AL flashes in the display.
10. The result, comprising the systolic AT and the diastolic AK blood pressure and the pulse rate AR is displayed. Note also the explanations on further display symbols in this booklet.
11. When the measurement has finished, press the quick-acting discharge valve 8 in order to release any remaining air in the cuff. Remove the cuff.
12. Switch off the device with ON/OFF button 1. (The monitor does switch off automatically after approx. 1 min.).

How not to store a reading
As soon as the reading is displayed press and hold the ON/OFF button 1 until «M» AP is flashing. Confirm to delete the reading by pressing the M-button 3.
☞ You can interrupt the measurement at any time by pressing the quick-acting discharge valve 8 (e.g. if you feel uneasy or notice an unpleasant pressure sensation).

Appearance of the Heart Arrhythmia Indicator for early Detection

This symbol AM indicates that certain pulse irregularities were detected during the measurement. In this case, the result may deviate from your normal blood pressure – repeat the measurement. In most cases, this is no cause for concern. However, if the symbol appears on a regular basis (e.g. several times a week with measurements taken daily) we advise you to tell your doctor. Please show your doctor the following explanation:
Information for the doctor on frequent appearance of the Arrhythmia indicator
This device is an oscillometric blood pressure monitor that also analyses pulse frequency during measurement. The device is clinically tested.
The arrhythmia symbol is displayed after the measurement, if pulse irregularities occur during measurement. If the symbol appears more frequently (e.g. several times per week on measurements performed daily) we recommend the patient to seek medical advice.
This device does not replace a cardiac examination, but serves to detect pulse irregularities at an early stage.

Appearance of the Hypertension Indicator

This symbol AL flashes at the end of the measurement, if either your systolic or diastolic blood pressure is higher than the recommended values in accordance with the international guidelines (ESH, ESC JSH).
Systolic blood pressure: >135 mmHg
Diastolic blood pressure: > 85 mmHg

Data Memory

This device automatically stores the last 30 measurement values.
Viewing the stored values
Press the M-button 3 briefly, when the device is switched off. The display first shows the last stored result.
Pressing the M-button again displays the previous value. Pressing the M-button repeatedly enables you to move from one stored value to another.
Memory full
☞ Pay attention that the maximum memory capacity of 30 memories is not exceeded. When the 30 memory is full, the oldest value is automatically overwritten with the 31st value. Values should be evaluated by a doctor before the memory capacity is reached – otherwise data will be lost.
Clearing all values
⚠ All memory data are cleared when batteries are taken out of the device.

Battery Indicator and Battery change

Low battery
When the batteries are approximately ¾ empty the battery symbol AO will flash as soon as the device is switched on (partly filled battery displayed). Although the device will continue to measure reliably, you should obtain replacement batteries.
Flat battery – replacement
When the batteries are flat, the battery symbol AO will flash as soon as the device is switched on (flat battery displayed). You cannot take any further measurements and must replace the batteries.

1. Open the battery compartment 6 at the back of the device.
2. Replace the batteries – ensure correct polarity as shown by the symbols in the compartment.

Which batteries and which procedure?

☞Use 2 new, long-life 1.5 V, size AAA alkaline batteries.

☞Do not use batteries beyond their date of expiry.

☞Remove batteries if the device is not going to be used for a prolonged period.

Using rechargeable batteries

You can also operate this device using rechargeable batteries.

☞ Only use «NiMH» type reusable batteries.

☞ Batteries must be removed and recharged when the flat battery symbol appears. They should not remain inside the device as they may become damaged (total discharge as a result of low use of the device, even when switched off).

☞ Always remove the rechargeable batteries if you do not intend to use the device for a week or more.

☞ Batteries cannot be charged in the blood pressure monitor. Recharge batteries in an external charger and observe the information regarding charging, care and durability.

Error Messages

If an error occurs during the measurement, the measurement is interrupted and an error message, e.g. «ERR 3», is displayed.

Error	Description	Potential cause and remedy
«ERR 1»	Signal too weak	The pulse signals on the cuff are too weak. Re-position the cuff and repeat the measurement.*
«ERR 2»	Error signal	During the measurement, error signals were detected by the cuff, caused for instance by movement or muscle tension. Repeat the measurement, keeping your arm still.
«ERR 3»	No pressure in the cuff	An adequate pressure cannot be generated in the cuff. A leak may have occurred. Check that cuff and pump ball are correctly connected and that the cuff is not fitted too loosely. Replace the batteries if necessary. Repeat the measurement.
«ERR 5»	Abnormal result	The measuring signals are inaccurate and no result can therefore be displayed. Read through the checklist for performing reliable measurements and then repeat the measurement.*
«HI»	Pulse or cuff pressure too high	The pressure in the cuff is too high (over 299 mmHg) OR the pulse is too high (over 200 beats per minute). Relax for 5 minutes and repeat the measurement.*
«LO»	Pulse too low	The pulse is too low (less than 40 beats per minute). Repeat the measurement.*

* Please immediately consult your doctor, if this or any other problem occurs repeatedly.

☞ If you think the results are unusual, please read through the information in «Section 2.» carefully.

Safety, Care, Accuracy Test and Disposal

⚠ Safety and protection

- Follow instructions for use. This document provides important product operation and safety information regarding this device. Please read this document thoroughly before using the device and keep for future reference.
- This device may only be used for the purposes described in these instructions. The manufacturer cannot be

held liable for damage caused by incorrect application.

- This device comprises sensitive components and must be treated with caution. Observe the storage and operating conditions described in the «Technical Specifications» section.
- Protect it from:
  – water and moisture
  – extreme temperatures
  – impact and dropping
  – contamination and dust
  – direct sunlight
  – heat and cold
- The cuffs are sensitive and must be handled with care.
- Do not exchange or use any other kind of cuff for measuring with this device.
- Only pump up the cuff once fitted.
- Do not use this device close to strong electromagnetic fields such as mobile telephones or radio installations. Keep a minimum distance of 3.3 m from such devices when using this device.
- Do not use this device if you think it is damaged or notice anything unusual.
- Never open this device.
- If the device is not going to be used for a prolonged period the batteries should be removed.
- Read the additional safety information provided within the individual sections of this instruction manual.
- The measurement results given by this device is not a diagnosis. It is not replacing the need for the consultation of a physician, especially if not matching the patient's symptoms. Do not rely on the measurement result only, always consider other potentially
  occurring symptoms and the patient's feedback. Calling a doctor or an ambulance is advised if needed.

Ensure that children do not use this device unsupervised; some parts are small enough to be swallowed. Be aware of the risk of strangulation in case this device is supplied with cables or tubes.

Device care

Clean the device only with a soft, dry cloth.

Cleaning the cuff

Carefully remove spots on the cuff with a damp cloth and soapsuds.

⚠ **WARNING:** Do not wash the cuff in a washing machine or dishwasher!

Accuracy test

We recommend this device is tested for accuracy every 2 years or after mechanical impact (e.g. being dropped). The verification time period is 2 years. Verification is carried out in accordance with the document P 1323565.2.001-2018 «State system for ensuring the uniformity of measurements. Non-invasive blood pressure meters. Verification Method» Confirmation of initial verification, an electronic version of the verification certificate, is on the website of the Federal Information Fund for Ensuring Uniformity of Measurements – **www.fgis.gost.ru**
Information on verification is on the company website – **www.microlife.ru**

Disposal

When the disposal of this device is required please contact a specialized organization, authorized to provide utilization according to the legislation of the Russian Federation.

Guarantee

This device is covered by a 5 year guarantee from the date of purchase. The guarantee is valid only on presentation of the guarantee card completed by the dealer (see back) confirming date of purchase or the receipt.

- Batteries and parts that become worn with use are not included.
- Opening or altering the device invalidates the guarantee.
- The guarantee does not cover damage caused by improper handling, discharged batteries, accidents or non-compliance with the operating instructions.
- The cuff has a functional guarantee (bladder tightness) for 2 years.
  Please contact your local Microlife-Service (see foreword).

Technical Specifications

Operating conditions:	10 – 40 °C / 50 – 104 °F 15- 95 % relative maximum humidity
Storage conditions:	20 – +55 °C / -4 – +131 °F 15- 95 % relative maximum humidity
Weight:	106 g (including batteries)
Dimensions:	115 x 59 x 30 mm
Measuring procedure:	oscillometric, corresponding to Korotkoff method: Phase I systolic, Phase V diastolic
Measurement range:	20 – 280 mmHg – blood pressure 40 – 200 beats per minute – pulse
Cuff pressure displayrange:	0 – 299 mmHg
Resolution:	1 mmHg
Static accuracy:	pressure within ± 3 mmHg
Pulse accuracy:	± 5 % of the readout value
Voltage source:	2 x 1.5 V alkaline batteries; size AAA
Battery lifetime:	approx. 780 measurements (using new batteries)
Included accessories:	Cuff Tube Instruction manual Warranty card Batteries Packaging Box
IP Class:	IP20
Reference to standards:	EN 1060-1 /-3 /-4; IEC 60601-1; IEC 60601-1-2 (EMC); IEC 60601-1-11
Expected service life:	Device: 5 years or 10000 measurements Accessories: 2 years

This device complies with the requirements of the Medical Device Directive 93/42/EEC.
Technical alterations reserved.
Date of production: first four digits of the serial number of the device. First and second digit – the week of the year / third and fourth digit – the year of production.

Place of production:
ONBO Electronic (Shenzhen) Co., Ltd., Китай
Адрес: ONBO Electronic (Shenzhen) Co., Ltd., No. 138, Huasheng Road, Langkou Community, Dalang Street, Longhua District, Shenzhen, China
Made in China

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Documents / Resources

	microlife BP N1 Basic Arterial Meter [pdf] Instruction Manual N1 Basic, BP N1 Basic, BP N1 Basic Arterial Meter, Arterial Meter, Meter

References

- Hypertension and Fever Management - Microlife AG
- Медицинское оборудование - Microlife / Микролайф