



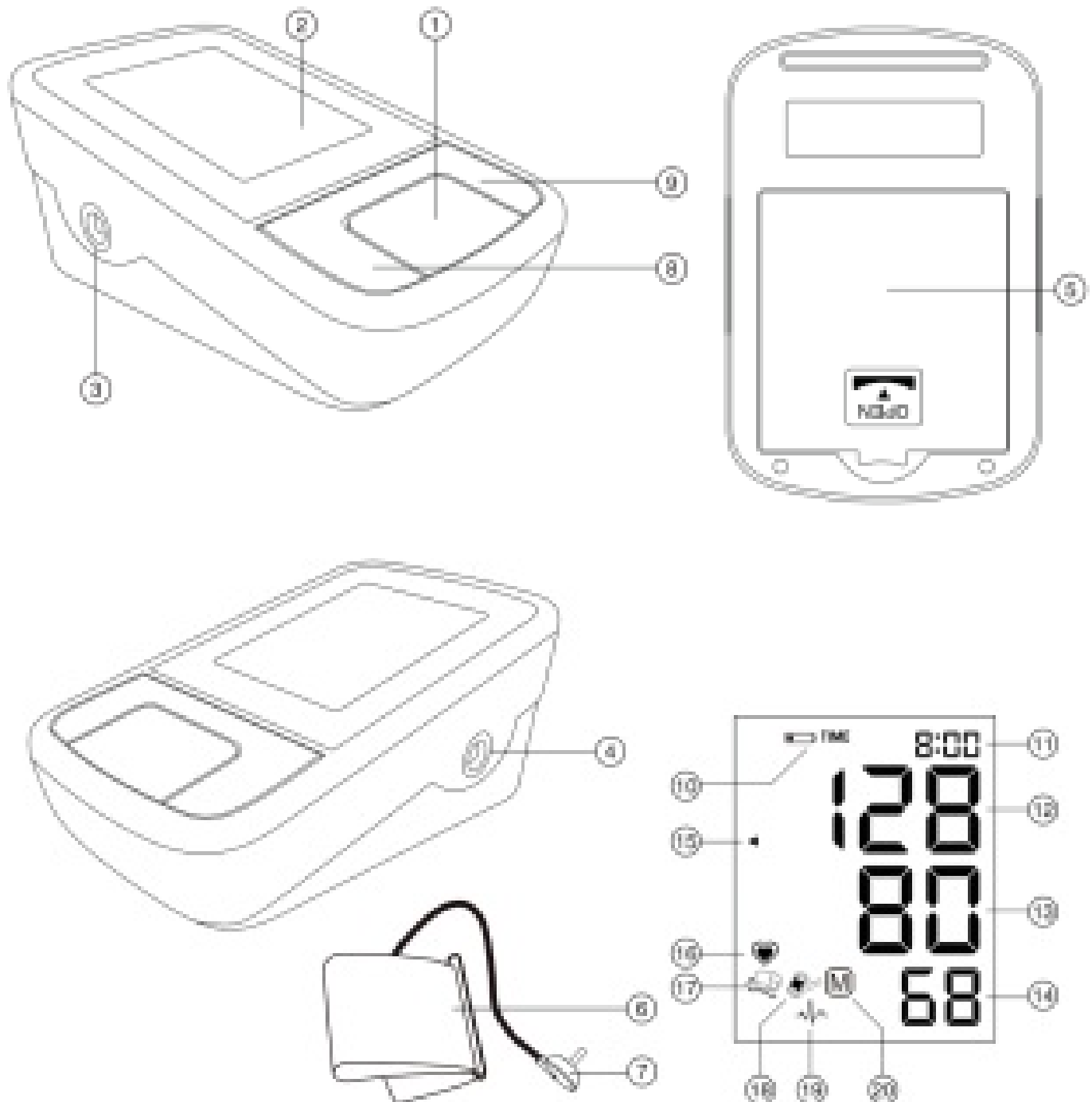
Microlife BP A2 Basic Instruction Manual

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microlife[®]



IB BP A2 Basic S-V11 2721
Revision Date: 2021-06-23



Name of Purchaser

Serial Number

Date of Purchase

Specialist Dealer

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Microlife BP A2 Basic

- 1. ON/OFF button
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Display

- 10. AT Battery Display
- 11. AK Date/Time
- 12. AL Systolic Value
- 13. AM Diastolic Value
- 14. AN Pulse Rate
- 15. AO Traffic Light Indicator
- 16. AP Pulse Indicator
- 17. AQ Cuff Check Indicator
- 18. AR Arm Movement Indicator
- 19. AS Irregular Heartbeat (IHB) Symbol
- 20. BT Stored Value

Intended use:

This oscillometric blood pressure monitor is intended for measuring non-invasive blood pressure in people aged 12 years or older. It is clinically validated in patients with hypertension, hypotension, diabetes, pregnancy, pre-eclampsia, atherosclerosis, end-stage renal disease, obesity, and the elderly.

Dear Customer,

This device was developed in collaboration with physicians and clinical tests were carried out to 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 award-winning «BP 3BTO-A» model tested according to the British and Irish Hypertension Society (BIHS) protocol.



Read the instructions carefully before using this device.



Type BF applied part



Keep dry

BP A2 Basic

Important Facts about Blood Pressure and Self -Measurement

- 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 a cardiac arrhythmia consult with your doctor before using the device. See also chapter «Appearance of the Irregular Heartbeat (IHB) Symbol» of this user manual.
- 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 high	≥ 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 5 is on the bottom of the device. Insert the batteries (4 x 1.5 V, size AA), thereby observing the indicated polarity.

Setting the date and time

1. After the new batteries are fitted, the year number flashes in the display. You can set the year by pressing the M-button 9. To confirm and then set the month, press the time button 8.
2. Press the M-button to set the month. Press the time button to confirm and then set the day.
3. Follow the instructions above to set the day, hour, and minutes.
4. Once you have set the minutes and pressed the time button, the date and time are set and the time is displayed.
5. If you want to change the date and time, press and hold the time button down for approx. 3 seconds until the year number starts to flash. Now you can enter the new values as described above.

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 center of the upper arm).

Cuff size	for the circumference of the upper arm
S	17 – 22 cm
M	22 – 32 cm
M – L	22 – 42 cm
L	32 – 42 cm
L – XL	32 – 52 cm



Pre-shaped cuffs are optionally available.



Only use Microlife cuffs.

- Contact your local Microlife Service if the enclosed cuff 6 does not fit.
- Connect the cuff to the device by inserting the cuff connector 7 into the cuff socket 3 as far as it will go.

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 patient's 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. Press the ON/OFF button 1 to start the measurement.
7. The cuff will now pump up automatically. Relax, do not move, and do not tense your arm muscles until the measurement result is displayed. Breathe normally and do not talk.
8. When the correct pressure is reached, the pumping stops and the pressure falls gradually. If the required pressure was not reached, the device will automatically pump some more air into the cuff.
9. During the measurement, the pulse indicator AP flashes in the display.
10. The result, comprising the systolic AL and the diastolic AM blood pressure and the pulse rate AN is displayed.
11. When the device has finished measuring, remove the cuff.

12. Switch off the device. (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» BT is flashing. Confirm to delete the reading by pressing the M-button 9.



You can stop the measurement at any time by pressing the ON/OFF button (e.g. if you feel uneasy or an unpleasant pressure sensation).



If the systolic blood pressure is known to be very high, it can be an advantage to set the pressure individually. Press the ON/OFF button after the monitor has been pumped up to a level of approx. 30 mmHg (shown on the display). Keep the button pressed until the pressure is about 40 mmHg above the expected systolic value – then release the button.

The appearance of the Irregular Heartbeat (IHB) Symbol

This symbol AS indicates that an irregular heartbeat was detected. In this case, the measured blood pressure may deviate from your actual blood pressure values. It is recommended to repeat the measurement.

Information for the doctor in case of repeated appearance of the IHB symbol:

This device is an oscillometric blood pressure monitor that also measures the pulse during blood pressure measurement and indicates when the heart rate is irregular.

Traffic Light Indicator in the Display

The bars on the left-hand edge of the display AO show you the range within which the indicated blood pressure value lies. Depending on the height of the bar, the readout value is either within the optimum (green), elevated (yellow), too high (orange), or dangerously high (red) range. The classification corresponds to the 4 ranges in the table as defined by the international guidelines (ESH, ESC, JSH), as described in «Section 1.».

Data Memory

This device automatically stores the last 30 measurement values.

Viewing the stored values

Press the M-button 9 briefly, when the device is switched off. The display first shows «M» BT and «A», which stands for the average of all stored values. 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

If you are sure that you want to permanently remove all stored values, hold down the M-button (the device must have been switched off beforehand) until «CL» appears and then release the button. To permanently clear the memory, press the M-button while «CL» is flashing. Individual values cannot be cleared.

Battery Indicator and Battery change

Low battery

When the batteries are approximately $\frac{3}{4}$ empty the battery symbol AT 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 AT will flashes 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 5 on the bottom of the device.
2. Replace the batteries – ensure correct polarity as shown by the symbols in the compartment.
3. To set a date and time, follow the procedure described in «Section 2.».



The memory retains all values although the date and time must be reset – the year number, therefore, flashes automatically after the batteries are replaced. Which batteries and which procedure?



Use 4 new, long-life 1.5 V, size AA 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.

Using a Mains Adapter

You can operate this device using the Microlife mains adapter (DC 6V, 600 mA).



Only use the Microlife mains adapter available as an original accessory appropriate for your supply voltage.



Ensure that neither the mains adapter nor the cable is damaged.

1. Plug the adapter cable into the mains adapter socket 4 in the blood pressure monitor.
2. Plug the adapter plug into the wall socket. When the mains adapter is connected, no battery current is consumed.

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» 18	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» 17	No pressure in the cuff	An adequate pressure cannot be generated in the cuff. A leak may have occurred. Check that the cuff is correctly connected and is not too loose. 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 1.» 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 it 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 the 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 or cuff connector 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 are not a diagnosis. It is not replacing the need for the consultation of a physician, especially if not watching 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!



WARNING: Do not dry the cuff cover in a tumble dryer!



WARNING: Under no circumstances may you wash the inner bladder!

Accuracy test

We recommend this device be tested for accuracy every 2 years or after mechanical impact (e.g. being dropped). Please contact your local Microlife-Service to arrange the test (see foreword).

Disposal



— Batteries and electronic devices must be disposed of in accordance with the locally applicable regulations, not with domestic waste.

Guarantee

This device is covered by a **5-year guarantee** from the date of purchase. During this guarantee period, at our discretion, Microlife will repair or replace the defective product free of charge. Opening or altering the device invalidates the guarantee. The following items are excluded from the guarantee:

- Transport costs and risks of transport.
- Damage caused by incorrect application or non-compliance with the instructions for use.
- Damage caused by leaking batteries.
- Damage caused by accident or misuse.
- Packaging/storage material and instructions for use.
- Regular checks and maintenance (calibration).
- Accessories and wearing parts: Batteries, power adapter (optional). The cuff is covered by a functional guarantee (bladder tightness) for 2 years. Should guarantee service to be required, please contact the dealer from where the product was purchased or your local Microlife service. You may contact your local Microlife service through our website: www.microlife.com/support. Compensation is limited to the value of the product. The guarantee will be granted if the complete product is returned with the original invoice. Repair or


replacement within the guarantee does not prolong or renew the guarantee period. The legal claims and rights of consumers are not limited by this guarantee.

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:	340 g (including batteries)
Dimensions:	135.5 x 82 x 57 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 display range:	0 – 299 mmHg
Resolution:	1 mmHg
Static accuracy:	pressure within ± 3 mmHg
Pulse accuracy:	± 5 % of the readout value
Voltage source:	4 x 1.5 V alkaline batteries; size AA Mains adapter DC 6V, 600 mA (optional)
Battery lifetime:	approx. 920 measurements (using new batteries)
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.

Documents / Resources

	microlife Microlife BP A2 Basic [pdf] Instruction Manual microlife, Microlife, BP, A2, Basic
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