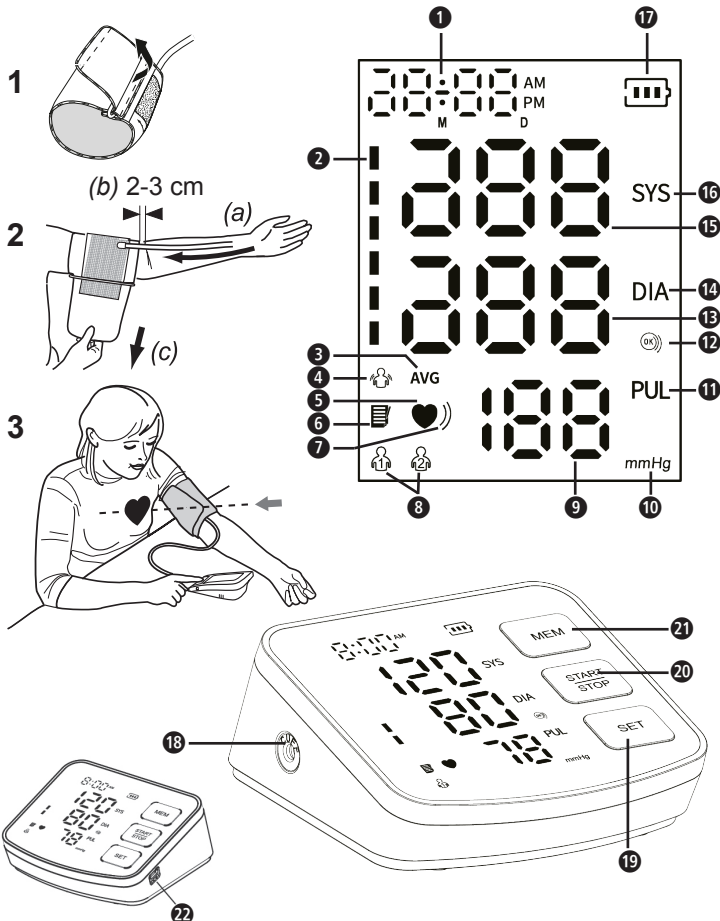


GB Instruction manual
Upper Arm Blood Pressure Monitor
BU 520



Intended use
The Arm Blood Pressure Monitor is intended to measure the systolic pressure and diastolic pressure, as well as the pulse rate of adult person via non-invasive oscillometric technique at medical facilities or at home.

Intended users
1. Lay or experienced users
2. People who can read and understand the instruction manual

Clinical benefit
The traditional auscultation method needs to learn to determine the level of blood pressure through the sound, it has high requirements for the user, requiring the user to accurately hear the Kirknoise and make a judgment, and this method judges the value by human vision and hearing, with subjective factors, unless professional doctors, it is difficult for ordinary people to obtain accurate blood pressure values, and it is not very convenient to carry the stethoscope. However the upper arm blood pressure monitor based on the principle of non-invasive oscillometric method is easy to operate, and the reading is obvious and intuitive. Patients can monitor systolic pressure, diastolic pressure and pulse rate at home at any time, greatly reducing the number of visits to the hospital, reducing the risk of travel and improving the quality of patient's life.

Contraindications
Do not use this device if the patient's condition meets the following contraindications, to avoid inaccurate measurements or injuries.
1. The device is not suitable for use on patients with implanted, electrical devices, such as cardiac pacemakers, and defibrillators.
2. Avoid taking measurement on the arm on the side of a mastectomy or lymph node clearance.
3. The device measures blood pressure using a pressurized cuff. If the measuring limb suffers from injuries (for example open wounds) or under conditions or treatments (for example intravenous drip) making it unsuitable for surface contact or pressurization, do not use the device, to avoid worsening of the injuries or conditions.
4. Avoid taking measurements of patients with conditions, diseases, and susceptible to environmental conditions that lead to uncontrollable motions (e.g. trembling or shivering) and inability to communicate clearly (for example children and unconscious patients).
5. The device uses oscillometric method to determine blood pressure. The arm being measure should have normal perfusion. The device is not intended to be used on a limb with restricted or impaired blood circulation. If you suffer with perfusion or blood disorders, consult your doctor

Explanation of symbols
The warnings and illustrations in these instructions for use are intended to enable you to use the product safely and correctly and thus avoid harm to yourself and others.

**IMPORTANT!** Follow the instructions for use! Non-observance of these instructions can result in serious injury or damage to the device.

**Caution**

**Type BF applied part**

**Symbol for the marking of electrical and electronic devices according to Directive 2012/19/EU.**

**Keep dry**

**Vertical upward**

**Keep away from sunlight**

**Low voltage prompt**

**CE mark**

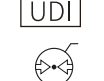
**Manufacturer**

**Date of manufacture**

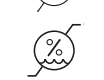
**Serial number**

**Batch code**

**Medical device**

**Authorized representative in the European Community / in Switzerland**

**Unique device identifier**

**Ambient pressure limitation**

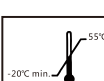
**Temperature range**

**Humidity range**

**Importer**

**Recycling symbols/codes:**
These are used to provide information about the material and its proper use and recycling.

**Temperature range**

**Temperature range**

**Humidity range**

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These are used to provide information about the material and its proper use and recycling.

**Temperature range**

GB Safety instructions

Read the instruction manual carefully before using this device, especially the safety instructions, and keep the instruction manual for future use. Should you give this device to another person, it is vital that you also pass on these instructions for use.



- The unit is intended only for use in the home. Consult your doctor prior to using the upper arm blood pressure monitor if you are concerned about health matters.
- Only use the unit for its intended purpose in accordance with the instructions for use. Warranty claims become void if the unit is misused.
- Pregnant women should observe the necessary precautions and their individual exercise tolerance; consult your doctor should you use.
- If discomfort such as pain in the upper arm or other discomfort occurs during a measurement, press the START/STOP button  to deflate the cuff immediately. Loosen the cuff and remove it from the upper arm.
- No maintenance or servicing during use.
- Too frequent measurements can lead to injuries to the patient due to blood flow disturbances.
- Consult your physician before using this monitor on an arm where there is an intravascular access or therapy or an arterio-venous (AV) shunt, otherwise temporary impairment of blood flow may occur, which could result in injury.
- Consult your doctor before using the device if you have had a mastectomy or lymph node removal.
- Consult your doctor before using this device if you suffer from severe circulatory problems or blood disorders, as inflating the cuff may cause bruising.
- Do not use the device at the same time as other devices on the same limb. This could cause a temporary loss of function or an inaccurate measurement.
- Observe the affected limb to determine whether the use of this device will result in prolonged impairment of the patient's blood circulation.
- Please use the components supplied by the manufacturer (e.g. cuff). Otherwise the measurement accuracy will be impaired.
- No modifications may be made to this device.
- Do not leave the small parts where children can reach them. Children could swallow them. If a child accidentally swallows the battery cover, please contact a doctor immediately.
- The cuff complies with the requirements of ISO 10993-5, ISO 10993-10, ISO 10993-23, but some sensitive individuals may experience allergic reactions.
- DO NOT use this monitoring device on an arm that is injured or undergoing medical treatment.
- Caution! Do not perform measurements more frequently than necessary as blood flow may be impaired and bruising may occur.
- Maintenance should be performed as recommended by the manufacturer.
- If the ambient temperature is below 5°C, move the device to a location where the ambient temperature is between 5°C and 40°C for at least 1 hour. If the ambient temperature is above 40°C, move the device to a location where the ambient temperature is between 5°C and 40°C for at least 2 hours.
- DO NOT use this monitor for infants, toddlers, children or people who cannot articulate themselves.
- DO NOT take medication based on the device's readings. Consult your physician for specific information about your blood pressure. The patient should not self-diagnose or self-medicate based on the readings. Please follow the instructions of your doctor or healthcare provider.
- DO NOT use the device if you are on an intravenous drip or receiving a blood transfusion.
- DO NOT use the device in areas where high frequency (HF) surgical equipment, magnetic resonance imaging (MRI) or computerised tomography (CT) scanners are located. This may result in incorrect operation of the monitor and/or inaccurate readings.
- Ensure that the cuff is not applied to an arm where arteries or veins are being medically treated, e.g. by intravascular access or therapy or an arteriovenous (AV) shunt.
- Consult your doctor before using this monitor if you suffer from frequent arrhythmias such as premature atrial or ventricular beats or atrial fibrillation, arteriosclerosis, poor perfusion, diabetes, pregnancy, pre-eclampsia or kidney disease.
- Discontinue use of this device and consult your doctor if you experience skin irritation or discomfort.
- DO NOT use this device for any purpose other than measuring blood pressure and pulse rate.
- DO NOT disassemble or attempt to repair the meter or other components. This may result in inaccurate readings.
- DO NOT use the device in a location where it is damp or where there is a risk of water splashing onto the device. This may damage the monitor.
- DO NOT use the device in a moving vehicle, e.g. in a car.
- DO NOT drop the monitor or subject it to strong shocks or vibrations.
- DO NOT use or store the monitor outside the conditions specified by the manufacturer (extremely high or low temperatures and humidity) as this may affect performance or cause inaccurate measurements.
- If the performance changes (e.g. inaccurate measurements or abnormal display), please stop operation immediately and contact customer service personnel in a timely manner.
- Never use thinner (solvent), alcohol or petrol to clean the device.
- Remove the batteries if you will not be using the device for a longer period of time (> 3 months).

SAFETY NOTES FOR BATTERIES

- Do not disassemble batteries!
- Replace the new batteries if the unit display a low battery symbol.
- Never leave any low battery in the battery compartment since they may leak and cause damage to the unit.
- Increased risk of leakage, avoid contact with skin, eyes and mucous membranes! If battery acid comes in contact with any of these parts, rinse the affected area with copious amounts of fresh water and seek medical attention immediately!
- If a battery has been swallowed seek medical attention immediately!
- Replace all of the batteries simultaneously!
- Only replace with batteries of the same type, never use different types of batteries together or used batteries with new ones!
- Insert the batteries correctly, observing the polarity!
- Please take off the battery if you won't use in 3 months!
- Remove the batteries from the device if it is not going to be used for an extended period!
- Keep batteries out of children's reach!
- Do not attempt to recharge these batteries! Do not short circuit! Do not throw into a fire! **There is a danger of explosion!**
- Do not throw used batteries into the household refuse; put them in a hazardous waste container or take them to a battery collection point, at the shop where they were purchased!

Unit and LC display

**1** Date and Time

**3** AVG (Display of average values)

**5** Heartbeat icon

**7** Irregular Heartbeat icon

**9** Pulse rate value

**11** Pulse rate icon

**13** Diastolic Blood Pressure Value

**15** Systolic Blood Pressure Value

**17** Battery icon

**19** SET button

**21** MEM button (Memory recall)

**2** Blood pressure indicator

**4** "Keep still" indication

**6** Memory icon

**8** User icon

**10** Unit of blood pressure

**12** Cuff worn detection

**14** Diastolic Blood Pressure icon

**16** Systolic Blood Pressure icon

**18** Plug connection for air hose

**20** START/STOP button

**22** USB-C connection

Scope of supply

First check that the device is complete. The scope of delivery includes

- 1 **medisana** Upper Arm Blood Pressure Monitor **BU 520**
- 1 cuff 22-42 cm with air hose
- 1 pouch
- 1 USB Powering cable
- 4 batteries (type AA, LR6) 1.5V
- 1 instruction manual

If you notice any transport damage during unpacking, please contact your dealer immediately.

Product composition: This product is composed of the main body and cuff.

Blood pressure classification:

WARNING: If the blood pressure display is red, this means that you have high blood pressure. Please consult your doctor immediately. Low blood pressure is also a health risk! Dizzy spells can lead to dangerous situations (e.g. on stairs or in traffic)!

Display color	BP Classification	Systolic Blood Pressure (mmHg)	Diastolic Blood Pressure (mmHg)
red	Serious hepertension	≥180	≥110
orange	Moderate hypertension	160-179	100-109
orange	Mild hypertension	140-159	90-99
green	High normal value	130-139	85-89
green	Normal blood pressure	120-129	80-84
green	Optimal blood pressure	<120	<80

Influencing and analysing the measurements

- Measure your blood pressure several times, save the results and then compare them with each other. Do not draw conclusions from a single result.
- Your blood pressure values should always be assessed by a doctor who is also familiar with your medical history. If you use the device regularly and record the values for your doctor, you should also inform your doctor of the progress from time to time.
- Measure your blood pressure before meals.
- Before taking your blood pressure, you should rest for at least 5-10 minutes.
- If the systolic or diastolic value of the measurement appears unusual (too high or too low) despite correct handling of the device and this is repeated several times, inform your doctor. This also applies if, in rare cases, an irregular or very weak pulse makes it impossible to take measurements.

Start-up

Inserting / changing batteries

Before you can use your device, you must insert the enclosed batteries. The battery compartment cover is located on the underside of the device. Open it and insert the 4 enclosed 1.5V batteries, type AA LR6. Pay attention to the polarity (as marked in the battery compartment). Close the battery compartment again. Replace the batteries if the battery icon  indicates low voltage or if nothing is shown on the display after the device has been switched on.

Use of an external power supply

Alternatively, you can also operate the device with a type C USB powering cable with external 5V==1A power supply (cable included), which you plug into the connection provided for this purpose (see drawing) on the side of the device. The batteries remain in the device. Inserting the plug on the side of the device mechanically disconnects the batteries. It is therefore necessary to first connect the connecting cable to the power supply and then to the device.

If the device is no longer being used, the plug must first be disconnected from the device and then the power supply. This will prevent you from having to re-enter the date and time each time.

Settings

1. User selection:

With the appliance switched off, press the SET button . Then use the SET button  to select the desired user (user symbol .

2. Date and time setting:

With the device switched off, press and hold the SET button  for approx. 3 seconds. Now use the MEM button  to set the current year, then press Set  to confirm and proceed in the same way with the settings for the month, day, hour and minute. If the battery is changed, the entries are lost and must be made again.

How to apply the arm cuff

- Before use, insert the end piece of the air hose into the opening on the left-hand side of the appliance .
- Push the open side of the cuff through the metal bracket so that the Velcro fastener is on the outside, creating a cylindrical shape (Fig. 1). Slide the cuff over your left upper arm.
- Place the air tube on the centre of the arm in extension of the middle finger (Fig. 2) (a). The lower edge of the cuff should be 2-3 cm above the crook of your elbow (b). Pull the cuff tight and close the Velcro fastening (c).
- Measure on the bare upper arm.
- Only if the cuff cannot be placed on the left arm, place it on the right arm. Measurements should always be taken on the same arm.
- Correct measuring position in a sitting position (Fig. 3). Sit on a comfortable chair and support your back and arms. Place your feet flat on the floor and do not cross your legs. The arm cuff should be placed on the arm at the level of the heart, with the arm resting comfortably on a table.

Remarks:

- Only use the cuff supplied by the manufacturer. Replacing the cuff with parts from other manufacturers will lead to inaccurate measurement results.
- A loose or open cuff will cause an incorrect measurement.
- Repeated measurements cause blood to build up in the arm, which can lead to an incorrect result. Successive blood pressure measurements should be taken with 2 to 3 minute breaks or after the arm has been held up so that the accumulated blood can flow out.
- Caution! Do not kink the connecting tube, as the resulting continuous cuff pressure can disrupt the blood flow and injure the patient.

Preparation before measurement

- Remove the clothing on your arm.
- Always measure on the same arm (usually the left arm).
- Keep still during the measurement and do not speak.
- Relax as much as possible.
- Measure your blood pressure at approximately the same time every day.
- Do not measure your blood pressure immediately after physical exertion or a bath. Rest for 20-30 minutes before taking the measurement.
- Measurements under the conditions listed below can influence the results: Eating, drinking wine, coffee, tea, exercise, talking, nervousness, agitated mood, leaning forward, exercise, drastic change in room temperature, in a moving vehicle, repeated and continuous measurements.

Taking a measurement

Once you have put the cuff on correctly, you can start the measurement.

- Press the START/STOP button . The device inflates the cuff and "00" appears in the display. The rising pressure is shown on the display.
- After the measurement, the values for systolic and diastolic blood pressure and the pulse value appear on the display. According to the blood pressure classification, the blood pressure indicator  appears next to the corresponding coloured bar. If the device has detected an irregular pulse, the symbol  also appears.

Notes:

- If you feel unwell during the measurement, press the START/STOP button  immediately to end the measurement. When the air pressure is filled to a certain level, the value on the screen drops slowly and at a certain rate and the heartbeat symbol flashes. When the measurement is complete, the systolic pressure, diastolic pressure and pulse measurement are displayed on the screen.
- Contact your doctor if you get unexpected readings.

Memory function

- This device has 2 separate memories, each with a capacity of 199 memory locations. The results are automatically stored in the selected memory after each measurement. If 199 measured values are stored in the memory and a new value is stored, the oldest value is deleted.
- To call up the stored measured values, press the MEM button  when the device is switched off. The average values of the last three measurements appear first (AVG symbol  lights up). If you now press the MEM button  again, the last stored measurement appears. Pressing the MEM button  again will display the previous or subsequent measured values.
- Delete saved values: With the appliance switched off, press the SET button  and select the desired user whose saved values are to be deleted. Press the START/STOP button  to switch off the appliance and then press the MEM button  to activate the display. Press and hold the MEM button  for approx. 3 seconds to delete the user's stored data - 'NO' appears on the display.

Further displays

Cuff worn detection : The symbol is always displayed when the cuff is correctly applied. If the cuff is too loose, the symbol flashes - if necessary, stop a measurement in progress (press START/STOP button  and correct the fit.

'Do not move' symbol : This symbol flashes if you move your body or shake your arm during the measurement, which can lead to incorrect measurement results. Please correct your posture and measure again.

Irregular heartbeat display : Detection of an irregular heartbeat. Please discuss the results with your doctor.

Switch off the device

Press the START/STOP button  to switch off the appliance. The appliance also switches off automatically after approx. 1 minute.

Errors and rectification

Error displays - The following messages appear in the event of unusual measurements:

Symbol	Cause	Solution
Er U	The pressure has not reached 30 mmHg (4 kPa) within 12 seconds.	Apply the cuff correctly. Repeat the measurement correctly.
Er H	Inflation reaches 295 mmHg.	Apply the cuff correctly. Repeat the measurement correctly.
Er 1	Pulse rate is not detected correctly.	Apply the cuff correctly. Repeat the measurement correctly.
Er 2	External, strong interference (movement, conversation or magnetic interference during a measurement).	The measurement may be faulty in the vicinity of a mobile phone or other high-frequency device. Do not move or talk during a measurement.
Er 3	Abnormal measurement result.	Apply the cuff correctly. Repeat the measurement correctly.
Er 23 / Er 24	Systolic pressure < 57 mmHg or > 255 mmHg	Repeat the measurement after a 30-minute rest period. If you get unusual results 3 times in a row, talk to your doctor.
Er 25 / Er 26	Diastolic pressure < 25 mmHg or > 195 mmHg	Repeat the measurement after a 30-minute rest period. If you get unusual results 3 times in a row, talk to your doctor.

Troubleshooting

Problem	Check	Cause and solution
Failure to power on	Check the power supply. Check the position of the batteries.	Insert new batteries. Insert the batteries according to the instructions.
No pressurizing	Check whether the connection is seated correctly and whether the connection is broken or leaking.	Insert the connection firmly. Use a new cuff.
Err appears & measurement is interrupted	Movement or speaking during measurement.	Do not move or speak during the measurement.
Cuff leaks	Check whether the cuff is damaged or too loose.	Wrap the cuff tightly. Change cuff.

Please contact the customer service if you can't solve the problem. Do not disassemble the unit by yourself.

Cleaning and care

Remove the batteries before cleaning the appliance. The device can be cleaned with a soft, clean cloth moistened with a small amount of neutral detergent or water. It is recommended to clean the appliance before and after each use. Carry out cleaning within 3 minutes. The number of repeated cleanings should not exceed 3 times.

 Do not use corrosive cleaning agents. When cleaning, ensure that no part of the appliance is immersed in liquid to prevent liquid from entering the appliance.

Disinfection

Recommended disinfectant: 75% medical alcohol

Steps:

- Carefully wipe the device with a soft, clean cloth moistened with a small amount of the above disinfectant and dry immediately with a soft, clean, dry cloth.
- The housing of the device can also be cleaned with a soft, clean cloth that has been moistened with a small amount of 75% medical alcohol for disinfection.

 Do not disinfect using methods such as high-temperature vapour or ultraviolet radiation. These could damage the appliance and shorten its service life. It is recommended to disinfect the appliance before and after each use. Each disinfection must be completed within 1 minute. The number of repeated disinfections must not exceed 2 times.

Maintenance and servicing

- Always keep the appliance clean and tidy to prolong its service life.
- If the device is dirty, please wipe it with a dry, soft cloth or a soft cloth soaked in water or a neutral cleaning agent.
- We recommend calibrating the device at least once a year. If necessary, please contact the manufacturer or a representative.

Warning: Do not allow water or other liquids to flow into the appliance. The appliance may no longer be used if liquid has entered.

 **Disposal:** This product must not be disposed of together with domestic waste. All users are obliged to hand in all electrical or electronic devices, regardless of whether or not they contain toxic substances, at a municipal or commercial collection point so that they can be disposed of in an environmentally acceptable manner. Remove the batteries before disposing of the device/unit. Do not dispose of old batteries with your household waste, but at a battery collection station at a recycling site or in a shop. Consult your local authority or your supplier for information about disposal.

Declaration

The BU 520 upper arm blood pressure monitor has been tested in accordance with the recommendations of Technical Report IEC TR 60601-4-2: Medical electrical equipment - Part 4-2: Guidance and interpretation - Electromagnetic immunity; performance of medical electrical equipment and medical electrical systems.

Technical specifications

Name and model	: medisana Upper Arm Blood Pressure Monitor BU 520
Display system	: Digital display
Memory slots	: 2 x 199 for measurement results
Measuring method	: Oscillometric measurement
Power supply	: 6V ==, 4 x 1.5V batteries AA LR6 or 5V == / 1A via USB-C cable
Low battery	: Autom. switch-off at < 4V ± 0.1V
Measurement range blood pressure	: Systole: 57-255 mmHg Diastole: 25 - 195 mmHg
Pulse measuring range	: 40 - 199 beats/min.
Maximum measuring deviation of static pressure	: ± 3 mmHg (± 0.4 kPa)
Maximum measuring deviation of pulse values	: ± 5 %
Autom. switch-off	: After approx. 1 minute
Anti Electronic Shock Degree	: Type BF
Operation mode	: Continuous operation
Protection Against Harmful Ingress of Water or Particular Matter	: IP21
Monitor service life	: 5 years
Cuff service life	: 10,000 times
Protection against electric shock	: Internally powered ME equipment
Operating environment	: +5 °C to +40 °C, min. 15 to 90 % max. relative humidity, air pressure 70kPa to 106kPa
Storage/transport conditions	: -20 °C to +55 °C, min. 10 to 93 % max. relative humidity, air pressure 70kPa to 106kPa without corrosive gases and with good ventilation. Avoid strong shocks, direct impacts, exposure or rain during transport. Store the device and components in a clean, safe place. Remove the arm cuff. Carefully fold the air carefully into the arm cuff.
Dimensions (L x W x H)	: approx. 130 x 111.5 x 56 mm
Cuff	: 22 - 42 cm for adults
Weight (device unit)	: approx. 260 g without batteries
Item number	: 50145
EAN number	: 48971 38 50145 7

In accordance with our policy of continual product improvement, we reserve the right to make technical and visual changes without notice.

The current version of this instruction manual can be found under www.medisana.asia

Clinical precision

The product has been clinically tested according to the requirements of ISO 81060-2. Essential performance:
1. measurement range (blood pressure): SYS: 57-255mmHg / DIA: 25-195 mmHg
Pulse rate: 40-199 bpm
2. measurement accuracy: blood pressure: ±3 mmHg (±0.4 Kpa) / pulse rate: ±5%.

Warranty and repair terms

Your statutory warranty rights are not restricted by our guarantee below. Please contact your dealer or the service centre in case of a claim under the warranty. If you have to return the unit, please enclose a copy of your receipt and state what the defect is. The following warranty terms apply:

1. The warranty period for **medisana** products is 5 years from date of purchase. In case of a warranty claim, the date of purchase has to be proven by means of the sales receipt or invoice.

2. Defects in material or workmanship will be removed free of charge within the warranty period.

3. Repairs under warranty do not extend the warranty period either for the unit or for the replacement parts.

4. The following is excluded under the warranty:
a. All damage which has arisen due to improper treatment, e.g. non-observance of the user instructions.
b. All damage which is due to repairs or tampering by the customer or unauthorised third parties.
c. Damage which has arisen during transport from the manufacturer to the consumer or during transport to the service centre

