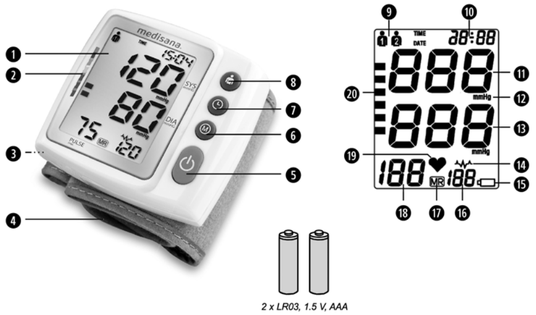
medisana®

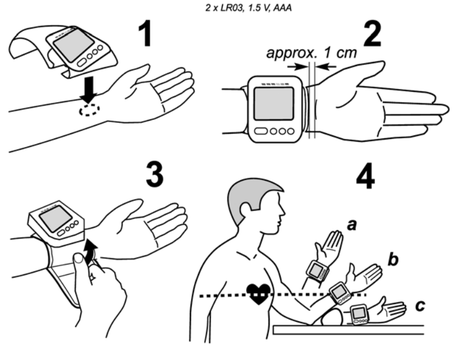
Blood Pressure Monitor BW 315

Instruction manual - *Please read carefully!*

GB Unit and LC-Display



2 x LR03, 1.5 V, AAA



Proper use

- This fully automatic electronic blood pressure monitor is intended for measuring the blood pressure at home. It is a non-invasive blood pressure measurement system to measure the diastolic and systolic blood pressure and pulse of an adult using a non-invasive technique by means of a cuff, which needs to be fitted on the wrist.

Contraindications

- The device is not suitable for measuring the blood pressure of children. Ask your doctor before using it on older children.
- This item is not suitable for persons who suffer from a strong arrhythmia.

Explanation of symbols

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

WARNING
These warning notes must be observed to prevent any injury to the user.

CAUTION
These notes must be observed to prevent any damage to the device.

NOTE
These notes give you useful additional information on the installation or operation.

Device classification: type BF applied part

Not to be used by very young children (0-3 years)!

Keep dry

LOT number

Manufacturer

Date of manufacture

Scope of supply

Please check first of all that the unit is complete.
The following parts are included as standard:
- 1 **medisana** Blood Pressure Monitor **BW 315**
- 2 batteries (type AAA, LR03) 1.5 V
- 1 storage box
- 1 instruction manual

Please contact your supplier if you notice any transport damage on unpacking the unit.

Common factors of wrong measurements

- Please keep quiet for 5-10 minutes and avoid eating, drinking alcohol, smoking, exercising and bathing before taking a measurement. All these factors will influence the measurement result.
- Remove watches or other spruce from your wrist before measurement.
- Always measure on the same wrist (normally left).
- Measurements should be taken regularly at the same time of each day, as the blood pressure varies even during the day.
- Any effort to support the arm during measurement may increase the measured blood pressure.
- Make sure, you are in a comfortable, relaxed position and do not move or constrict your muscles during measurement. Use a cushion to support your arm if necessary.
- Extreme temperatures, humidity or altitudes may impair the performance of the device.
- If the wrist is not at heart level, a false reading may be obtained.
- A loose or open cuff causes false readings.
- With repeated measurements, blood accumulates in the wrist, what may lead to false readings. Consecutive blood pressure measurements should be carried out after a 3-minute pause or after the arm has been held up in order to allow the accumulated blood to flow normally.

48628_BW 315_manual_GB_TW_202302_L3

CE 0297

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 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.
- Please consult your doctor prior to using the unit if you suffer from illnesses such as arterial occlusive disease.
- The unit may not be used to check the heart rate of a pacemaker.
- Pregnant women should take the necessary precautions and pay attention to their individual circumstances. Please consult your doctor if necessary.
- If you experience discomfort during a measurement, such as pain in the wrist or other complaints, press the ⏻ - button ❺ to release the air immediately from the cuff. Loosen the cuff and remove it from your wrist.
- Blood pressure measurements in high repetition rates may lead to unwanted side effects, e.g. nerval compression or blood clots.
- Blood pressure measurements - especially if executed frequently - may lead to temporary marks on the skin and / or to blood circulation disorders. If necessary, contact your physician to get more information.
- This device is not designed to be used by persons with limited physical, sensory or mental abilities, or by persons with insufficient experience and/or knowledge, unless under observation by a person responsible for their safety, or unless they have been instructed in the use of the device.
- This device is intended to be used by adults. The unit is unsuitable for children or babies. Contact your doctor, if you want to use this device on young persons.
- Do not allow children to use the unit. Medical products are not toys!
- Please ensure that the unit is kept away from the reach of children.
- The swallowing of small parts like packaging bag, battery, battery cover and so on may cause suffocation.
- The user needs to check that the equipment functions properly and that it is in proper working condition before being used.
- The device may not be operated in rooms with high levels of radiation or in the vicinity of high-radiation devices, such as radio transmitters, mobile telephones or microwaves or together with HF surgical equipment, as this could cause functional defects or incorrect measurements.
- Do not use the equipment where flammable gas (such as anaesthetic gas, oxygen or hydrogen) or flammable liquids (such as alcohol) are present.
- Do not take measurements, if any other equipment is applied to the same limb for monitoring. This could lead to disturbances or failures.
- Never apply the cuff over hurt skin, in case of an inserted catheter or after a mastectomy.
- In cases of cardiac irregularity (arrhythmia) only use this device after consultation of your doctor.
- No modification of this unit/device is allowed.
- Please do not attempt to repair the unit yourself in the event of malfunctions, since this will void all warranty claims. Only have repairs carried out by authorised service centres.
- Only use original additional or spare parts from the manufacturer. Other parts could damage the device or could lead to personal injury.
- Protect the unit against moisture. If liquid does manage to penetrate into the unit, remove the batteries immediately and do not continue to use the unit. In this case contact your specialist dealer or notify us directly.
- The cuff is very sensitive and needs to be handled with care. Only inflate the cuff when it is properly positioned on the wrist.
- Protect the device from dirt, direct sunlight and extreme temperatures.
- Please do not use a dilution agent, alcohol or petrol to clean the unit.
- Please do not hit the device heavily or let if fall down from a high place.
- If the unit is not going to be used for a long period, please remove the batteries.

SAFETY NOTES FOR BATTERIES

- Do not disassemble batteries!
- Replace all batteries if the unit display shows the low battery symbol.
- Never leave any low battery in the battery compartment since it 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!
- Remove the batteries from the device if it is not going to be used for an extended period of 3 months or more!
- Keep batteries out of children›s reach!
- Do not attempt to recharge batteries! **There is a danger of explosion!**
- Do not short circuit! **There is a danger of explosion!**
- 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

❶ LC-display
❷ Blood Pressure Indicator (green - yellow - orange - red)
❸ Lid of the Battery Compartment
❹ Wrist cuff
❺ ⏻ - button (ON/OFF)
❻ Ⓜ - button (Memory recall)
❼ Ⓒ- Taste (Clock/Date)
❽ - button (User Setting)
❾ User memory 1/2
❿ Display of Clock / Date
⓫ Display of Systolic Pressure
⓬ Unit of measure
⓭ Display of Diastolic Pressure
⓮ Irregular heartbeat display
⓯ Change Battery symbol
⓰ Memory location number
⓱ Memory symbol
⓲ Display of Pulse Rate
⓳ Pulse symbol
⓴ Blood Pressure Indicator

What is blood pressure?

Blood pressure is the pressure created in the blood vessels by each heart beat. When the heart contracts (= systole) and pumps blood into the arteries, it brings about a rise in pressure. The highest value is known as the systolic pressure and is the first value to be measured. When the cardiac muscle relaxes to take in fresh blood, the pressure in the arteries also falls. Once the arteries are relaxed, a second reading is taken – the diastolic pressure.

Blood pressure classification

systolic mmHg	diastolic mmHg		Blood pressure indicator ❷/⓴
≥ 180	**≥ 110**	serious hypertension	red
160 - 179	100 - 109	medium hypertension	orange
140 - 159	90 - 99	mild hypertension	yellow
130 - 139	85 - 89	high-normal blood pressure	green
120 - 129	80 - 84	normal blood pressure	green
< 120	< 80	optimal blood pressure	green

WARNING
Blood pressure that is too low represents just as great a health risk as blood pressure that is too high! Fits of dizziness may lead to dangerous situations arising (e.g. on stairs or in traffic)!

Influencing and evaluating readings

- Measure your blood pressure several times, then record and compare the results. Do not draw any conclusions from a single reading.
- Your blood pressure readings should always be evaluated by a doctor who is also familiar with your personal medical history. When using the unit regularly and recording the values for your doctor, you should visit the doctor from time to time to keep him updated.
- When taking readings, remember that the daily values are influenced by several factors. Smoking, consumption of alcohol, drugs and physical exertion influence the measured values in various ways.
- Measure your blood pressure before meals.
- Before taking readings, allow yourself at least 5-10 minutes rest.
- If the systolic and diastolic readings seem unusual (too high or too low) on several occasions, despite correct use of the unit, please inform your doctor. This also applies to the rare occasions when an irregular or very weak pulse prevents you from taking readings.

Starting up

Insert / replace batteries

You must insert the batteries provided before you can use your unit. The lid of the battery compartment ❸ is located on the left hand side of the unit. Open it and insert the 2 AAA LR03 type 1.5 V batteries supplied. Ensure correct polarity when inserting the batteries (as marked inside the battery compartment).
Close the battery compartment. Replace the batteries immediately, if the change battery symbol ▭ ⓯ appears on the display ❶ or if nothing appears on the display after the unit has been switched on.

Setting (date, clock, mmHg/kPa)

After insertion of the batteries you need to set the date and clock. To enter the setting mode, press and hold the Ⓒ - button ❼ for approx. 3 seconds. Firstly, the user memory 1 or 2 ❾ is flashing. Now press the Ⓒ - button ❼ again to adjust the correct year figure. Adjust to correct year by pressing Ⓜ - button ❻ and press Ⓒ - button ❼ to confirm the setting. The device now switches to the month setting mode. Proceed accordingly (in the same way as with the year adjustment) to adjust the correct figures for month, day, hour and minute. Afterwards, the unit (mmHg/kPa) will be changed when press Ⓜ button each time. Press Ⓒ button to confirm the unit. Shortly, the current date appears and then the clock appears. If you want to look at the date later on, press the Ⓒ - button ❼ shortly. If the batteries are changed, the set information is lost and needs to be entered again.

Setting up the user memory

The **medisana** wrist blood pressure monitor **BW 315** gives you the opportunity to assign readings to one of two user memories, each of which provides 120 memory slots. Press - button ❽ to select the user memory or . Your selection will be saved by the device and will be considered in next blood pressure measurement respectively when the measurement result is saved. Your selection is valid until you make another selection.

Fitting the cuff

1. Attach the clean cuff to the left wrist which is free from clothing with the palm of the hand facing upwards (fig.**1**).
2. There should be a gap of approx. 1 cm between the cuff and the palm of the hand (fig.**2**).
3. Press the Velcro tape firmly around the wrist ensuring that it is not so tight that it could falsify the measured result (fig.**3**).

Correct position for taking readings

- Carry out the measurement whilst seated.
- Relax your arm and place it comfortably, on a table for instance.
- Raise the wrist so that the cuff of the monitor is at heart level (fig. **4**, position **a** = too high, **b** = correct, **c** = too low).
- Keep still during the measurement: Do not move and do not talk as this may alter the measurements.

Taking a blood pressure measurement

After the cuff has been appropriately positioned,the measurement can begin:
1. Press the ⏻ - button ❺ to start the measurement.
2. The device automatically inflates the cuff slowly in order to measure your blood pressure. The rising pressure in the cuff is shown on the display.
3. The unit inflates the cuff until sufficient pressure has built up for a measurement. Then the unit slowly releases air from the cuff and carries out the measurement. When the device detects the signal, the heart symbol ♥ ⓳ starts to flash on the display.
4. When the measurement is finished, the cuff is deflated completely. The systolic and diastolic blood pressure and the pulse value appear on the display ❶. The blood pres-sure indicator ⓴ is shown next to the relevant coloured bar depending on the blood pressure classification. If the unit has detected an irregular heartbeat, the Irregular heartbeat display ⓮ will also be shown.

WARNING
Do not take any therapeutic measures on the basis of a self measurement. Never alter the dose of a medicine prescribed by a doctor.

5. The readings are automatically saved in the selected memory (or). Up to 120 measured values with date and time can be stored in each memory.
6. The measurement readings remain on the display. The unit switches off automatically after approx. 3 minutes if no buttons are pressed. The unit may also be switched off using the ⏻ - button ❺.

Discontinuing a measurement

If it is necessary to interrupt a blood pressure measurement for any reason (e.g. the patient feels unwell) the ⏻ - button ❺ can be pressed at any time.The device immediately decrease the cuff pressure automatically.

Display stored values

This unit features 2 separate memories, each with a capacity of 120 memory slots. Results are automatically stored in the memory selected by the user. Press the - button ❽ to select the user (or). Now press the Ⓜ - button ❻ and the average values of the last 3 measurements appear on the display. Press the Ⓜ - button ❻ again and the latest stored measurement value will be shown, together with the memory symbol **"MR"** ⓱ and the memory location place **"1"** ⓰. Repeatedly pressing the Ⓜ - button ❻ displays the respective values measured previously (MR2, MR3 and so on). If you have reached the final entry and do not press a button, the unit automatically switches itself off after approximately 3 min. Memory recall mode can be exited at any time by pres- sing the ⏻ - button ❺. The oldest value is deleted, if 120 measured values have been stored in the memory and a new value is saved - at the same time, **"Ful"** shortly appears on the display.

Delete saved values

If you are sure that you want to permanently remove all stored memories of a user, press and hold the Ⓜ - button ❻ for approx. 5 seconds, until **CL** appears in the display. Release the button. Now press the Ⓜ - button ❻ again to confirm the deletion.

Error indicators

The following error codes will appear on the display when a measurement is abnormal:

Display	*Cause*
ERR1	No pulse was detected.
ERR2	Movement or talking during measurement.
ERR3	Inflation process lasts too long. The cuff probably has not been positioned properly.
ERR5	Systolic and diastolic pressure are too far apart from each other. Repeat the measurement. If you constantly receive unusual measurement results, please contact your doctor.

Troubleshooting

Problem	*Cause and solutions*
No display although the device is switched on and batteries are inserted	Maybe the batteries are weak. Insert new batteries and pay attention to correct polarity. Check, if the device is working well. In the case of doubt, contact the service centre.
Measurement can not be proceeded or measure-ment failed	Put on the cuff correctly. Repeat the measurement after relaxing 30 minutes. Do not speak or move during the measurement.
Each measurement result strongly deviates from the one before	Repeat the measurement in correct way after relaxing 30 minutes. Pay attention to all the instructions in this manual and to the common factors of wrong measurements. Slightly deviating measurement results are quite normal, as the blood pressure is constantly changing.
The measured values are remarkably different from values measured in a doctors surgery	Store the measured results and consult your doctor. It is not unusual to measure strongly deviating values outside of your home.

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

Cleaning and care

Remove the batteries before cleaning the unit. Clean the unit and the cuff using a soft cloth lightly moistened with a mild soapy solution. Never use abrasive cleaning agents, alcohol, naphtha, thinner or gasoline etc.. Never immerse the unit or any component in water. Be cautious not to get any moisture in the main unit. Do not use the unit again until it is completely dry. Only inflate the cuff when it is in position around the wrist.
Do not expose the unit to direct sunlight; protect it against dirt and moisture. Do not subject the unit to extreme hot or cold temperature. Keep the unit in the storage box when not in use. Store the unit in a clean and dry location.

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.

Guidelines / Standards

This blood pressure monitor meets the requirements of the EU standard for non-invasive blood pressure monitors. It is certified in accordance with EC Guidelines and carries the CE symbol (conformity symbol) "CE 0297". The blood pressure monitor corresponds to European standards EN 60601-1, EN 60601-1-2, EN 60601-1-11, EN 80601-2, EN 1060-1, EN 1060-3. The specifications of EU Guideline "93/42/EEC of the Council Directive dated 14 June 1993 concerning medical devices" are met.

Electromagnetic compatibility: Guidance and manufacturer's declaration
(as per 17th April 2014)

Electromagnetic emissions

The **blood pressure monitor** is intended for use in the electromagnetic environment specified below. The customer or the user of the **blood pressure monitor** should ensure that it is used in such an environment.

Emissions test	Compliance	Electromagnetic environment-guidance
RF emissions CISPR 11	Group 1	The "blood pressure monitor" uses RF energy only for its 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 "blood pressure monitor" is suitable for use in all es-tablishments other than domestic 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 emissions IEC 61000-3-3	Not applicable	

Electromagnetic immunity

The **blood pressure monitor** is intended for use in the electromagnetic environment specified below. The customer or the user of the **blood pressure monitor** should ensure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment guidance
Electrostatic discharge (ESD) IEC 61000-4-2	± 6 kV contact ± 8 kV air	± 6 kV contact ± 8 kV air	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %.
Electrical fast transient / burst IEC 61000-4-4	± 2 kV for power supply lines ; ±1 kV for input/ output lines	not applicable	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV differential mode ±2 kV common mode	not applicable	
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	< 5% U_T (> 95% dip in U_T) for 0.5 cycle; 40% U_T (60% dip in U_T) for 5 cycles; 70% U_T (30% dip in U_T) for 25 cycles; < 5% U_T (> 95% dip in U_T) for 5 sec	not applicable	Mains power quality should be that of a typical commercial or hospital environment. If the user of the **blood pressure monitor** requires continued operation during power mains dip & interruptions, it is re-commended that the **blood pressure monitor** be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	3 A/m	not applicable	not applicable

NOTE: U_T is the a.c. mains voltage prior to application of the test level.

Electromagnetic immunity

The **blood pressure monitor** is intended for use in the electromagnetic environment specified below. The customer or the user of the **blood pressure monitor** should ensure that it is used in such an environment.

Immunity test	IEC 60601 test level	Compliance level	Electromagnetic environment guidance
Conducted RF IEC 61000-4-6	3 Vrms 150 kHz to 80 MHz	not applicable	Portable and mobile RF communications equipment should be used no closer to any part of the "blood pressure monitor" including cables than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance:** d=1.2 $\sqrt{P}$ d=1.2 $\sqrt{P}$ 80 MHz to 800 MHz d=2.3 $\sqrt{P}$ 800 MHz to 2,5 GHz where P is the maximum output power rating of the trans-mitter in watts (W) according to the transmitter manu-facturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site surveya,' should be less than the comcompliance level in each frequency in beach frequency range.' Interference may occur in the vicinity of equipment marked with the following Symbol:
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,5 GHz	3 V/m	

NOTE 1 At 80 MHz and 800 MHz, 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.

a. 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 electro-magnetic site survey should be considered. If the measured field strength in the location in which the "blood pressure monitor" is used exceeds the applicable RF compliance level above, the blood pressure monitor should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as reorienting or relocating the "blood pressure monitor".

b. Over the frequency range 150 kHz to 80 MHz, field strengths should be less than [V1] 3 V/m.

Recommended separation distances between portable and mobile RF communications equipment and the blood pressure monitor

The "blood pressure monitor" is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the blood pressure monitor can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the "blood pressure monitor" 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		
	150 kHz to 80 MHz d=1.2 $\sqrt{P}$	80 MHz to 800 MHZ d=1.2 $\sqrt{P}$	800 MHz to 2.5 GHz d=2.3 $\sqrt{P}$
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

For transmitters rated at a maximum output power not listed above, the re-commended separation distance d in meters (m) can be estimated using the equation applicable to the frequency of the transmitter, where P is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.
NOTE 1 At 80 MHz and 800 MHz, 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.

Technical specifications

Name and model	: **medisana** Blood pressure monitor **BW 315**
Display system	: Digital display
Memory slots	: 2 x 120 measurement values
Measuring method	: Oscillometric
Power supply	: 3 V=, 2 x 1.5V batteries AAA LR03
Blood pressure measuring range	: 30 – 280 mmHg
Pulse measuring range	: 40 – 200 beats/min.
Maximum error tolerance for static pressure	: ± 3 mmHg
Maximum error tolerance for pulse rate	: ± 5 % of the value
Pressure generation	: Automatic with pump
Deflation	: Automatic
Automatic switch-off	: After approx. 3 minutes
Operating conditions	: +5 °C to +40 °C, 15 to 85 % max. relative humidity
Storage conditions	: -10 °C to +55 °C, 10 to 95 % max. relative humidity
Cuff	: 12.5 - 21,5 cm for adults
Dimensions (main unit)	: approx. 63 x 63 x 29 mm (L x W x H)
Weight	: approx. 110 g without batteries
Item number	: 48628
EAN number	: 40 15588 48628 9

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

Warranty and repair terms

Please contact your supplier 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 3 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. nonobservance 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.
   d. Accessories which are subject to normal wear and tear as batteries etc..
5. Liability for direct or indirect consequential losses caused by the unit are excluded even if the damage to the unit is accepted as a warranty claim.

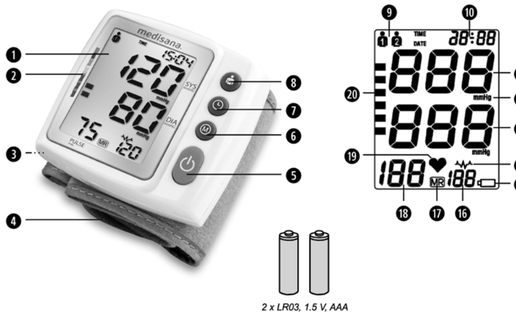
medisana GmbH
Carl-Schurz-Str. 2, 41460 NEUSS, GERMANY

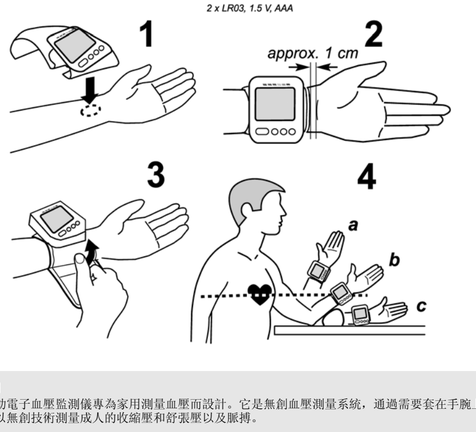
medisana®

血壓監測儀 BW 315

說明書 – *請仔細閱讀！*

TW 儀器和 LCD 顯示屏





正確使用

- 本全自動電子血壓監測儀專為家用測量血壓而設計。它是無創血壓測量系統，通過需要套在手腕上的袖帶以無創技術測量成人的收縮壓和舒張壓以及脈搏。

禁忌

- 本儀器不適合測量兒童的血壓。將本儀器用於大齡兒童之前，請詢問您的醫生。
- 本產品不適合患有嚴重心律不齊的人群。

標誌說明

重要
遵守使用說明！
不遵守這些說明可能導致嚴重損害或損壞儀器。

警告
必須遵守這些警告說明以防止對用戶造成任何傷害。

小心
必須遵守這些說明以防止對儀器造成任何損壞。

附註
這些說明提供關於安裝或操作的有用附加信息。

儀器分類：BF 型應用零件

幼兒（0–3 歲）不得使用！

保持乾燥

批號

製造商

製造日期

供貨範圍

首先請檢查儀器是否完整。
標配以下零件：

- 1 個 **medisana** 血壓監測儀 **BW 315**
- 2 節電池（AAA，LR03 型）1.5 V
- 1 個儲存盒
- 1 本說明書

如果您在打開儀器包裝的過程中注意到任何運輸損壞，請聯繫您的供應商。

錯誤測量的共性因素

- 進行測量之前，請保持安靜 5–10 分鐘並避免進食、喝酒、吸煙、運動或洗澡。所有這些因素都會影響測量結果。
- 測量之前，請從手腕上取下手錶或其他物品。
- 請始終在同一個手腕（通常為左手腕）上測量。
- 應在每天的同一時間進行測量，因為血壓在一天中也會有變動。
- 測量期間，任何支撐手臂的努力都可能使測量的血壓升高。
- 測量期間，請確保您處於舒適、放鬆的位置，並且請勿移動或收縮肌肉。如有必要，請用墊子支撐您的手臂。
- 極端溫度、濕度或高度可能會損害儀器的性能。
- 若手腕未與心臟等高，則可能獲得錯誤讀數。
- 袖帶鬆動或打開會導致錯誤讀數。
- 在反復測量的情況下，血液可能會累積於手腕，這可能導致錯誤讀數。每次測量之後，應經過 3 分鐘的暫停之後或手臂被舉高之後才能繼續進行血壓測量，以便使累積的血液正常流動。

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CE 0297

TW 安全說明

請在使用本儀器之前仔細閱讀本說明書，尤其是安全說明，並保留說明書以備將來使用。如果您要將本儀器轉交給其他人，務必同時移交本說明書。

- 本儀器僅為家庭使用設計。若您擔心健康問題，請在使用血壓監測儀之前諮詢您的醫生。
- 僅可根據使用說明將本儀器用於其預期用途。若濫用本儀器，則保修索賠失效。
- 若您患有諸如動脈閉塞性疾病等病症，請在使用本儀器前諮詢您的醫生。
- 本儀器不得用於檢查起搏器的心率。
- 孕期婦女應採取必要的預防措施並注意其個人情況。如有必要，請諮詢您的醫生。
- 若您在測量期間感到不適，比如腕部疼痛或其他不適，請按 ⏻ 按鈕 ❺ 以立即從袖帶中放氣。鬆開袖帶並將袖帶從您的手腕上取下。
- 以高重複頻率進行血壓測量可能會導致有害副作用，例如神經壓迫或血栓。
- 血壓測量 —— 尤其是頻繁地進行測量 —— 可能會導致皮膚上留下暫時的印記和/或導致血液循環障礙。如有必要，請聯繫您的醫生以獲得更多信息。
- 本儀器不是為身體、感官和精神受限的人使用而設計，也不是為經驗和/或知識不足的人使用而設計，除非是在負責他們安全的人的監視下，或者已向他們說明如何使用本儀器。
- 本儀器僅為成人使用而設計。本儀器不適合兒童或嬰兒。 若您想將本儀器用於未成年人，請聯繫您的醫生。
- 請勿允許兒童使用本儀器。醫療產品不是玩具！
- 請確保將本儀器放在兒童不能接觸的地方。
- 吞咽諸如包裝袋、電池或電池蓋等小部件可能會導致窒息。
- 使用前用戶需要檢查儀器功能是否正常以及其工作條件是否合適。
- 不能在高幅射水平的房間內或在例如無線電發射機、移動電話或微波爐等高幅射儀器附近操作本儀器，因為這可能導致功能缺陷或測量不準確。
- 請勿在具有易燃氣體（如麻醉氣體、氧氣或氫氣）或易燃液體（如酒精）的地方使用本儀器。
- 若已使用任何其他儀器檢測同一個肢體，請勿進行測量。這可能導致干擾或失敗。
- 如果插入了導管或進行了乳房切除術，切勿將袖帶套在受傷的皮膚上。
- 若患有心律不齊（心律失常），則僅可在諮詢您的醫生之後才能使用本儀器。
- 不得對本儀器/設備進行改裝。
- 出現故障時，請勿嘗試自行維修本儀器，因為這會使所有保修索賠失效。維修僅可由授權的服務中心進行。
- 僅可使用製造商提供的原裝附件或備件。其他零件可能會損壞儀器或導致人身傷害。
- 防止本儀器受潮。如有液體滲入本儀器，請立即取出電池，不要繼續使用本儀器。在此情況下，請聯繫您的專業經銷商或直接通知我們。
- 袖帶非常容易受損，需要小心使用。僅當袖帶正確套在手腕上之後才對其充氣。
- 保護儀器免受灰塵、陽光直射或極端溫度的影響。
- 請勿使用稀釋劑、酒精或汽油清潔本儀器。
- 請勿用力撞擊本儀器或使其從高處墜落。
- 若長時間不使用本儀器，請取出電池。

電池安全須知

- 請勿拆解電池！
- 顯示器上顯示電量低標誌時，請更換所有電池。
- 切勿將電量低的電池留在電池倉內，因為電池可能會洩漏並導致儀器損壞。
- 洩漏風險增加！避免接觸皮膚、眼睛和黏膜！如果電池酸液接觸其中任何部位，請使用大量的清水沖洗受影響區域並立即就醫！
- 如果吞咽了電池，應立即就醫！
- 同時更換所有電池！
- 僅可更換為同類型電池，切勿同時使用不同類型的電池或新舊電池混用！
- 正確插入電池，正負極不要接反！
- 若 3 個月或更長時間內不使用儀器，請從儀器中取出電池！
- 將電池放在兒童不能接觸的地方！
- 請勿嘗試為電池再次充電！**存在爆炸危險！**
- 請勿使其短路！**存在爆炸危險！**
- 請勿投入火中！**存在爆炸危險！**
- 請勿將使用過的電池扔進生活垃圾中；應將他們放入危險廢物容器或帶到其購買商店的電池收集點！

儀器和 LCD 顯示屏

❶ LCD 顯示屏
❷ 血壓指標（綠色 – 黃色 – 橙色 – 紅色）
❸ 電池倉蓋
❹ 腕部袖帶
❺ ⏻ 按鈕（ON/OFF）（打開/關閉）
❻ Ⓜ 按鈕（記憶調取）
❼ 🕒 喜好（時鐘/日期）
❽ 👤 按鈕（用戶設置）
❾ 用戶內存 1/2
❿ 時鐘 / 日期顯示
⓫ 收縮壓顯示
⓬ 測量單位
⓭ 舒張壓顯示
⓮ 心律不齊顯示（心律失常）
⓯ 更換電池標誌
⓰ 記憶位置編號
⓱ 內存標誌
⓲ 脈搏率顯示
⓳ 脈搏標誌
⓴ 血壓指標

什麼是血壓？

血壓是每次心跳在血管裏造成的壓力。當心臟收縮（=心縮期）並將血液泵送到動脈中時，血壓上升。最高值稱為收縮壓，是要測量的第一個值。當心肌放鬆以接納新鮮血液時，動脈中的壓力也會下降。一旦動脈放鬆，將獲取第二個讀數 —— 舒張壓。

血壓分類

收縮壓 mmHg	舒張壓 mmHg		血壓指標 ❷/⓴
≥ 180	≥ 110	重度高血壓	紅色
160 – 179	100 – 109	中度高血壓	橙色
140 – 159	90 – 99	輕度高血壓	黃色
130 – 139	85 – 89	偏高正常血壓	綠色
120 – 129	80 – 84	正常血壓	綠色
< 120	< 80	最佳血壓	綠色

警告
血壓過低與血壓過高都代表重大健康風險！陣陣眩暈可能導致危險情況出現（例如在樓梯上或在行駛途中）！

影響及評估讀數

- 多次測量血壓，然後記錄並對比結果。請勿從單個讀數中得出任何結論。
- 您的血壓讀數應始終由熟悉您個人病史的醫生進行評估。定期使用本裝置並為您的醫生記錄下讀數值時，您應不時地拜訪醫生以使他瞭解您的最新情況。
- 測取讀數時，請記得日常值受到多種因素的影響。吸煙、攝取酒精、藥物或強體力活動會以多種方式影響測量值。
- 請在飯前測量您的血壓。
- 測取讀數之前，請至少休息 5–10 分鐘。
- 若在正常使用儀器的情況下，收縮壓和舒張壓的讀數仍多次顯示異常（過高或過低），請告知您的醫生。這也適用於不正常或非常弱的脈搏使您無法測取讀數的偶然情況。

啟動
放入/更換電池

使用儀器之前，您必須放入所提供的電池。電池倉蓋 ❸ 位於本儀器的左手邊。打開此蓋並放入所提供的 2 節 AAA LR03 型 1.5 V 電池。放入電池時請確保電極正確（按照電池倉內的標記）。
關閉電池倉。若更換電池的標誌 ⓯ 出現在顯示屏 ❶ 上或儀器打開後顯示屏不顯示，請立即更換電池。

設置（日期、時鐘、mmHg/kPa）

放入電池後，您需要設置日期和時鐘。為進入設置模式，請按住 🕒 按鈕 ❼ 約 3 秒。首先，用戶內存 1 或 2 ❾ 閃爍。現在，再次按 🕒 按鈕 ❼ 以調整正確的年份數字。 通過按 Ⓜ 按鈕 ❻ 調整至正確年份並按 🕒 按鈕 ❼ 確認設置。現在，儀器切換至月份設置模式。相應地進行設置（以與年份調整相同的方式），調整正確的月份、日期、小時和分鐘的數字。之後，每次按下 Ⓜ 按鈕，都會切換單位（mmHg/kPa）。 按 🕒 按鈕以確認單位。當前日期短暫出現，然後時鐘出現。若您稍後想查看日期，請短按 🕒 按鈕 ❼。若更換電池，設置信息將丟失，需再次輸入。

設置用戶內存

medisana 腕式血壓監測儀 **BW 315** 讓您能夠將讀數分配給兩個用戶內存之一，每個用戶內存可提供 120 個記憶位置。按 👤 按鈕 ❽ 以選擇用戶內存 👤 或 👤。儀器會保存您的選擇，並在接下來的血壓測量中，在保存測量結果時考慮此選擇。在您做出其他選擇之前，您的當前選擇都將有效。

套上袖帶

1. 將乾淨的袖帶套在未著衣物的左腕上，同時手掌朝上（圖 **1**）。
2. 袖帶和手掌之間應留有約 **1 cm** 的間隙（圖 **2**）。
3. 使 Velcro 扣帶牢靠緊在手腕上，確保其不至於過緊而歪曲測量結果（圖 **3**）。

測取讀數的正確位置

- 請在坐下時進行測量。
- 放鬆您的手臂並將其舒適地放在桌子等物體上。
- 抬起手腕以使監測儀的袖帶與心臟等高（圖 **4**，位置 **a** = 過高， **b** = 正確， **c** = 過低）。
- 測量期間請保持不動；請勿移動或說話，因為這可能會改變測量結果。

進行血壓測量

袖帶正確放置後，可開始測量：

1. 按 ⏻ 按鈕 ❺ 以開始測量。
2. 本儀器自動為袖帶充氣，以便測量您的血壓。顯示屏上顯示袖帶中不斷上升的壓力。
3. 本儀器為袖帶充氣，直至已累積測量所需的足夠壓力。然後本儀器慢慢地從袖帶釋放空氣並執行測量。儀器發現信號時，心臟標誌 ❤ ⓲ 開始在顯示屏上閃爍。
4. 完成時，袖帶完全放氣。收縮壓和舒張壓以及脈搏值出現在顯示屏 ❶ 上。血壓指標 ⓴ 顯示在依據血壓分類的相關彩條旁邊。若儀器檢測到異常心跳，則心律失常 ⓮ 也會顯示。

警告
請勿基於自己的測量採取任何治療措施。切勿更改醫生規定的藥物劑量。

5. 讀數會自動保存在所選的內存（👤 或 👤）中。每個內存各可儲存 120 *個*單日期和時間的測量值。
6. 測量讀數持續顯示在顯示屏上。若沒有按任何按鈕，3 分鐘後本儀器會自動關閉。使用 ⏻ 按鈕 ❺ 也可關閉本儀器。

中斷測量

如因任何原因（例如病人感覺不適）必須中斷血壓測量，可隨時按 ⏻ 按鈕 ❺。本儀器會立即自動降低袖帶壓力。

顯示儲存的值

本儀器具有 2 個單獨的內存，每個內存具有 120 個記憶位置。結果自動保存在用戶所選的內存中。 按 👤 按鈕 ❽ 以選擇用戶（👤 或 👤）。然後按 Ⓜ 按鈕 ❻，最近 3 次測量結果的平均值會出現在顯示屏上。再次按 Ⓜ 按鈕 ❻ ，最後一次儲存的測量值與內存標誌 「**MR**」 ⓱ 以及記憶位置 「**1**」 ⓰ 將會顯示。反復按 Ⓜ 按鈕 ❻，則會依次顯示之前每次測量的值（MR2、MR3 以此類推）。若您已到達最後一個條目並且沒有按任何按鈕，本儀器在 3 分鐘後會自動關閉。通過按 ⏻ 按鈕 ❺ 可隨時退出記憶調取模式，若內存中已存滿 120 個測量值且要保存新的值，則最早保存的值會被刪除 —— 同時，「**Ful**」會短暫出現在顯示屏上。

刪除已保存的值

若您確定希望永久刪除用戶的所有儲存記憶，請按住 Ⓜ 按鈕 ❻ 約 5 秒，直至 **CL** 出現在顯示屏上。
鬆開按鈕。現在再次按 Ⓜ 按鈕 ❻ 以確認刪除。

錯誤指示

測量異常時，以下錯誤代碼會出現在顯示屏上：

顯示	*原因*
ERR1	未檢測到脈搏。
ERR2	測量期間移動或說話。
ERR3	充氣過程持續時間過長。袖帶可能未正確放置。
ERR5	收縮壓與舒張壓的差距過大。再次測量。若您連續收到異常測量結果，請聯繫您的醫生。

故障排除

問題	*原因和解決方案*
儀器已打開且電池已放入，但是無顯示。	可能電池電量較低。放入新電池並注意正負極不要接反。檢查儀器是否正常工作。如有疑問，請聯繫服務中心。
無法進行測量或測量失敗	正確套上袖帶。休息約 30 分鐘後再次測量。測量期間請勿說話或移動。
每次測量結果都嚴重偏離上一次的結果。	休息約 30 分鐘後以正確方式再次測量。請注意本說明書中的所有說明以及錯誤測量的共性因素。測量結果出現輕微偏離非常正常，因為血壓在持續變化。
測量結果與在醫生診療室測量的值大不相同。	保存測量結果並諮詢您的醫生。測量結果與您在家外面測量的值嚴重偏離並不罕見。

若您無法解決問題，請聯繫製造商或服務中心。請勿自行拆解儀器。

清潔和保養

清潔儀器前，取下電池。使用微微浸潤中性肥皂液的軟布來清潔儀器和袖帶。切勿使用粗糙的清潔劑、酒精、石腦油、稀釋劑或汽油等。切勿將儀器或任何部件浸入水中。小心不要讓主機進水。在儀器未完全乾燥之前，請勿再次使用儀器。儀器袖帶正確套在手腕上之後才對其充氣。
請勿將本儀器暴露在直射陽光下；防止其沾染灰塵和受潮。請勿將本儀器暴露在極熱或極冷的溫度下。不使用時，請將儀器放入儲存盒中存放。將儀器存放在清潔、乾燥的地方。

廢棄處置

本產品不得隨生活垃圾一起處置。所有用戶都有義務將所有電氣或電子儀器（無論它們是否包含有害物質）上交到市政或商業收集點，以便按照環保的方式廢置它們。處置本儀器/裝置之前，請取下電池。請勿將舊電池隨生活垃圾一起處置，請將其放入廢品回收站或商店的電池收集站。請諮詢您的市政當局或供應商瞭解有關廢棄處置的信息。

指南 / 標準

本血壓監測儀符合歐盟針對無創血壓監測儀的標準。它通過了歐共體指南的認證並攜帶 CE 標誌（符合性標誌）「CE 0297」。本血壓監測儀符合 EN 60601-1、EN 60601-1-2、EN 60601-1-11、EN 80601-2、EN 1060-1 和 EN 1060-3 等歐洲標準。符合歐盟指南「1993 年 6 月 14 日有關醫療器械的委員會指令 93/42/EEC」的規範。

電磁兼容性：指南和製造商的聲明
（按照 2014 年 4 月 17 日所示）

電磁輻射

血壓監測儀為在以下指定的電磁環境中使用而設計。**血壓監測儀**的顧客或用戶應確保儀器使用於此類環境中。

輻射測試	合規	電磁環境指南
射頻輻射 CISPR 11	第 1 組	本「血壓監測儀」僅在內部功能中使用射頻能量。因此，射頻輻射非常低且不大可能引起對附近電磁設備的干擾。
射頻輻射 CISPR 11	B 類	本「血壓監測儀」適用於除家庭以外的所有建築物以及直接連接到爲家用建築供電的公共低壓供電網絡的建築物。
諧波輻射 IEC 61000-3-2	不適用	
電壓波動 / 閃變輻射 IEC 61000-3-3	不適用	

抗電磁干擾

本**血壓監測儀**為在以下指定的電磁環境中使用而設計。本**血壓監測儀**的顧客或用戶應確保本儀器使用於此類環境中。

抗干擾測試	IEC 60601 測試等級	合規等級	電磁環境指南
靜電放電 （ESD） IEC 61000-4-2	± 6 kV 接觸 ± 8 kV 空氣	± 6 kV 接觸 ± 8 kV 空氣	地板材料應為木製品、混凝土或瓷磚。若地板由合成材料覆蓋，則相對濕度應至少為 30 %。
電快速瞬變脈衝群 IEC 61000-4-4	電源線路 ± 2 kV; 輸入/輸出線路 ±1 kV	不適用	市電電源供電質量應達到典型的商用環境或醫院環境質量。
浪湧 IEC 61000-4-5	± 1 kV 不同模式 ±2 kV 適用模式	不適用	
輸入線路電源的電壓驟降、短時中斷和電壓變化 IEC 61000-4-11	< 5% U_T （在 U_T 中 > 95% 的電壓驟降）持續 0.5 個週期； 40% U_T （在 U_T 中 60% 的電壓驟降）持續 5 個週期； 70% U_T（在 U_T 中 30% 的電壓驟降）持續 25 個週期； < 5% U_T （在 U_T 中 > 95% 的電壓驟降）持續 5 秒	不適用	市電電源供電質量應達到典型的商用環境或醫院環境質量。若**血壓監測儀**的用戶要求在市電電源電壓驟降及中斷期間持續使用本儀器，我們建議使用不間斷電源或電池為**血壓監測儀**供電。
工頻（50/60 Hz） 磁場 IEC 61000-4-8	3 A/m	不適用	不適用

附注：U_T 是應用測試等級應用之前的交流電源電壓。

抗電磁干擾

本**血壓監測儀**為在以下指定的電磁環境中使用而設計。本**血壓監測儀**的顧客或用戶應確保儀器使用於此類環境中。

抗干擾測試	IEC 60601 測試等級	合規等級	電磁環境指南
傳導射頻 IEC 61000-4-6	3 Vrms 150 kHz 至 80 MHz	不適用	便攜式移動射頻通信使用的設備與包括電線在內的「血壓監測儀」的任何部位的距離不應比適用於發射機頻率的方程式計算得出的建議分隔距離更近。 **建議分隔距離：** d=1.2 √P d=1.2 √P 80 MHz 至 800 MHz d=2.3 √P 800 MHz 至 2.5 GHz
輻射射頻 IEC 61000-4-3	3 V/m 80 MHz 至 2.5 GHz	3 V/m	此處 **P** 為發射機製造商規定的以瓦（W）為單位的發射機最大額定輸出功率，**d** 為以米（m）為單位的建議分隔距離。由電磁現場調查確定的固定射頻發射機的磁場強度，a 應低於每個頻率範圍內每個頻率內的合規等級。b 儀器附近可能會出現以以下標誌標記的干擾：

附註 1 在 80 MHz 和 800 MHz 時，適用更高的頻率範圍。
附註 2 這些指南可能不適用於所有情況。電磁傳播受到建築物、物體和人的吸收和反射的影響。

a. 從理論上而言，無法準確地預測諸如無線（蜂窩式/無線）電話和陸地移動電台、業餘無線電、**AM** 和 **FM** 無線電廣播和電視廣播等的基站等固定射頻發射機的磁場強度。為評估固定射頻發射機的電磁環境，應考慮進行電磁現場調查。若在使用「血壓監測儀」的位置測量到的磁場強度超過上述可適用的射頻合規等級，則應觀察血壓監測儀以驗證其是否正常運行。若觀察到異常表現，應採取額外的必要措施，比如對「血壓監測儀」重新定向或重新安置。

b. 在 150 kHz 至 80 MHz 的頻率範圍內，磁場強度應低於［V1］3 V/m。

便攜式移動射頻通信設備與血壓監測儀之間的建議分隔距離

「血壓監測儀」專為在輻射射頻干擾得到控制的電磁環境中使用而設計。通過保持使攜式移動射頻通信設備（發射機）與「血壓監測儀」之間的最小距離（該距離是根據通信設備的最大輸出功率得出的以下建議距離），血壓監測儀的顧客或用戶可防止電磁干擾。

發射機的最大額定輸出功率，以 **W** 為單位	根據發射機頻率得出的分隔距離，以 **m** 為單位。		
	150 kHz 至 80 MHz d=1.2 √P	**80 MHz 至 800 MHZ** d=1.2 √P	**800 MHz 至 2.5 GHz** d=2.3 √P
0.01	0.12	0.12	0.23
0.1	0.38	0.38	0.73
1	1.2	1.2	2.3
10	3.8	3.8	7.3
100	12	12	23

對於最大額定輸出功率未在上述內容中列出的發射機，以米（**m**）為單位的建議分隔距離可通過適用於發射機頻率的方程式評估，此處 **P** 指的是發射機製造商規定的以瓦特（W）為單位的最大額定輸出功率。
附註 1 在 80 MHz 和 800 MHz 時，適用更高頻率範圍的分隔距離。
附註 2 這些指南可能不適用於所有情況。電磁傳播受到建築物、物體和人的反射和吸收的影響。

技術規格

名稱和型號	: **medisana** 血壓監測儀 **BW 315**
顯示系統	: 數字顯示
記憶位置	: 2 x 120 測量值
測量方法	: 示波法
電源	: 3 V: 2 節 1.5V 電池 AAA LR03
血壓測量範圍	: 30 – 280 mmHg
脈搏測量範圍	: 40 – 200 次/分
針對靜壓的最大容許誤差	: ± 3 mmHg
針對脈搏的最大容許誤差	: 值的 ± 5 %
產生壓力	: 通過泵自動進行
放氣	: 自動
自動關閉	: 約 3 分鐘後
工作條件	: +5 °C 至 +40 °C，15% 至 85 % 最大相對濕度
儲存條件	: −10 °C 至 +55 °C，10% 至 95 % 最大相對濕度
袖帶	: 12.5 – 21.5 cm，適用於成人
尺寸（主機）	: 約 63 x 63 x 29 mm （長 x 寬 x 高）
重量	: 約 110 g，不帶電池
產品編號	: 48628
EAN 號	: 40 15588 48628 9

按照我們的產品持續改進政策，我們保留在不通知的情況下進行技術和外觀更改的權利。

保修及維修條款

對於保修期內的索賠，請聯繫您的供應商或服務中心。如果您必須退回本儀器，請附上您的收據副本並說明具體缺陷。

以下保修條款將適用：

1. **medisana** 產品的保修期為從購買之日起的 3 年。
   保修索賠時，必須使用銷售收據或發票證明購買日期。
2. 如有材料或工藝缺陷，保修期內將予以免費排除。
3. 保修期內的維修不會延長儀器或更換部件的保修期。
4. 以下情況不在保修範圍之內：
   a. 由於處理不當（例如不遵守用戶說明）而出現的所有損壞。
   b. 由於客戶或未經授權的第三方維修或篡改而導致的所有損壞。
   c. 在從製造商向消費者運輸或到服務中心的運輸期間出現的損壞。
   d. 如電池等正常磨損的配件。
5. 即使儀器的損壞已被接受為保修索賠，因儀器損壞導致的直接或間接後果我司概不負責。

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