
# Talking wrist blood pressure monitor (DH432)

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Please retain these instructions for future reference. These instructions are also available in other formats.

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## Special warning

The measurements taken on this device are for your information only and are not a substitute for a medical examination. Discuss the measurements with your doctor and never base any medical decisions on them, for example medication and its administration. Before using this product please read the “Safety advice for use” section; if you have any questions, please contact RNIB for more information.

**Please note:** Do not use rechargeable batteries.

## Safety advice for use

* In order to ensure comparable values, always measure your blood pressure at the same time of day.
* Before every measurement, relax for about five minutes.
* If you want to perform several measurements on the same person, wait five minutes between each measurement.
* Do not take a measurement within 30 minutes after eating, drinking, smoking or exercising.
* Repeat the measurement if you are unsure of the measured value.
* The measurements taken by you are for your information only – they are not a substitute for a medical examination. Discuss the measurements with your doctor, and never base any medical decisions on them (e.g. medicines and their administration).
* Do not use the blood pressure monitor on new-borns, pregnant women or patients with pre-eclampsia. We recommend consulting a doctor before using the blood pressure monitor during pregnancy.
* Cardiovascular diseases may lead to incorrect measurements or have a detrimental effect on measurement accuracy. The same also applies to very low blood pressure, diabetes, circulatory disorders and arrhythmias as well as chills or shaking.
* The blood pressure monitor must not be used in connection with a high-frequency surgical unit.
* Please note that when inflating, the functions of the limb in question may be impaired.
* During the blood pressure measurement, blood circulation must not be stopped for an unnecessarily long time. If the device malfunctions, remove the cuff from the wrist.
* Avoid any mechanical restriction, compression or bending of the cuff line.
* Do not allow sustained pressure in the cuff or frequent measurements. The resulting restriction of the blood flow may cause injury
* Ensure that the cuff is not placed on an arm in which the arteries or veins are undergoing medical treatment, e.g. intravascular access or therapy, or an arteriovenous (AV) shunt.
* Do not use the cuff on people who have undergone a mastectomy.
* Do not place the cuff over wounds as this may cause further injury.
* You can either use the blood pressure monitor with batteries or with a mains part. Please note that data transfer and data storage is only possible when your blood pressure monitor is supplied with power. As soon as the batteries are empty or the mains part is disconnected from the power supply, the blood pressure monitor loses the date and time.
* To conserve the batteries, the monitor switches off automatically if no buttons are pressed for one minute.
* The device is only intended for the purpose described in these instructions for use.
* The manufacturer is not liable for damage resulting from improper or careless use.

## General description

This fully-automatic, talking blood pressure monitor for your wrist speaks in five languages to provide your systolic and diastolic blood pressure and your pulse per minute. The device is supplied in German.

Volume adjustable with the ability to also turn off the speech function, offering acoustic signals only. It has a large, easy-to-see display which measures 46mm x 49mm. It stores the average of all measured morning and evening blood pressure values for the last seven days and includes two x 60 memory spaces for storage of data. This blood pressure monitor can detect existing cardiac Arrhythmia. It has an automatic switch off function, battery changing indicator and a practical storage pouch included.

## Items supplied with the Talking blood pressure monitor

1 x Control base

1 x Wrist cuff with connector

1 x Storage pouch

2 x 1.5V alkaline batteries AAA included

## Orientation

### Control base

#### Front

Place the control base in front of you so that the large LCD display is facing towards you, with two main buttons located to the right of the display.

To the left of the LCD display there a vertical strip with four colour sections. From top to bottom: red, orange, yellow and green. These represent the risk level which is indicated by an arrow on the left edge on the LCD display.

To the right of the LCD display are two square buttons. The top button marked with the letter M is the memory button. The bottom button is the START/STOP button.

Here’s a description of the symbols you will see on the display:

* Top left corner: battery symbol will show here when they need replacing. This is the battery replacement symbol.
* Along the top of the unit the time and date are displayed.
* Below the time and date (on the righthand side) are the blood pressure readings, the top number is the systolic pressure and the bottom number is the diastolic pressure.
* In the bottom left is your pulse reading along with a heart shaped cardiac arrhythmia symbol.
* Just above the cardiac arrhythmia symbol are two sets of two arrows pointing up and down: these are the release and inflate air symbols.
* Above the release and inflate air symbols are two outlines of a person with number one or two inside: these are your two user memory settings.
* Above your memory settings is the risk indicator symbol.
* Above the user memory symbol there is a square box with the letter ‘M’ at the top; this is the memory space number.
* Above the memory space number square is the voice output/sound symbol.

#### Left side

On the left side of the device you’ll find the battery compartment cover.

#### Back

On the back of the unit there is a connection for the cuff via the plastic

connector on the end of the rubber tube, the cuff should be already

attached.

## Getting started

**Please note:** sighted assistance will be required to set up the monitor before the first use.

### Inserting the batteries

Open the battery compartment lid which is on the left side of the device. To remove the cover, apply pressure to the raised lines at the top and pull down and away from the cuff to the edge of the device. Remove the lid.

Insert two 1.5 V AAA (alkaline type LR03) batteries in the following positions:

First insert the negative pole (the flat side of the battery) by pressing down against the spring, then the battery will slide into the compartment more easily. You should then be able to easily push the positive end into place.

Make sure that the batteries are inserted with the correct polarity. Do not use rechargeable batteries. The message “The device is ready for use. You may start measuring.” is displayed.

Replace the battery compartment cover again carefully by sliding it until it clicks into place.

With inserted batteries, the unit permanently displays the time and date.

If the low battery replacement indicator is displayed, no further measurements can be performed. The device will announce: “Battery weak.” Please replace all batteries.

Once the batteries have been removed from the unit, the date and time must be set again.

If the monitor is being used by battery power the batteries should be changed every 12 months.

## Main menu

The menu allows you to set the following functions, one after another.

Date> Time> Language> Volume

It is essential to set the date and time otherwise, you will not be able to save your measured values correctly with a date and time and access them again later.

The time is displayed in 24-hour format.

The device is set to German when supplied to the customer.

Continue to the next section to commence setting the date and time in the menu.

### Setting the date and time

Insert the batteries or press and hold the Memory button for five seconds.

The full display is shown briefly. The hour format then flashes on the display. Now select the desired hour format using the memory button M and confirm with the START/STOP button.

#### Date

The year flashes on the display. Select the desired year using the memory button M and confirm with the START/STOP button.

Then the month flashes on the display. Select the desired month with the memory button M and confirm with the START/STOP button.

Finally, the day flashes on the display. Select the desired day with the memory button M and confirm with the START/STOP button.

Please note: if the hour format is set as 12h, the day/month display sequence is reversed.

#### Time

The hours flash on the display. Select the desired hour using the memory button M and confirm with the START/STOP button.

The minutes flash on the display. Select the desired minute using the memory button M and confirm with the START/STOP button.

### Setting the language

The device is set to German when supplied to the customer. The current language code (L1) will flash on the display. You can select the following languages with the two function buttons.

* L1 German
* L2 English
* L3 French
* L4 Italian
* L5 Turkish
* L0 Language off.

To select another language, press and hold the memory button M for 3 seconds each time until the desired language is shown. Confirm using the memory button M.

### Voice output volume

‘A3’ (loud) appears in the display. To change the voice output volume, press and hold the memory button M for three seconds each time. Confirm using the memory button M.

A1 = quiet

A2 = medium

A3 = loud

A0FF = voice output is off. Once all the data has been set, the device switches off automatically.

## Using the product

### Measuring blood pressure

Please ensure the unit is at room temperature before measuring.

Blood pressure may vary between the right and left arm, which may mean that the measured blood pressure values are different. Always perform the measurement on the same arm. If the values between the two arms are significantly different, please consult your doctor to determine which arm should be used for the measurement. We generally recommend you carry out the measurement on the left wrist.

Expose your left wrist. Ensure that the circulation of the arm is not hindered by tight clothing or similar. Place the cuff on the inside of your wrist.

Close the cuff with the hook-and-loop fastener such that the upper edge of the device is positioned approx. 1cm underneath the heel of the hand.

The cuff must be fitted tightly around the wrist but must not constrict.

### Adopt the correct posture

Rest for approx. five minutes before each measurement otherwise there may be divergences.

You can perform the measurement either sitting or lying down. Always make sure that the cuff is on a level with your heart.

If you are wanting to carry out a blood pressure measurement seated, make sure you are sitting comfortably with your arms and back leaning on something. Do not cross your legs and place your feet flat on the ground.

In order not to distort the result, it is important to keep still during the measurement and not talk.

### Selecting a user memory

Switch on the device with the START/STOP button on the front.

Select the desired user memory (person one or person two) by pressing the memory button M. If you do not select a user memory, the measurement is stored in the most recently used user memory. The relevant user one or user two symbol appears on the display.

You have two memories, each with 60 memory spaces to store the measurements of two different people separately.

### Performing the blood pressure measurement

As described before, attach the cuff and adopt the posture in which you want to perform the measurement.

Switch on the device with the START/STOP button.

A display check is performed, during which all display segments light up.

The last measured value is displayed, and the blood pressure monitor automatically begins the measurement after three seconds.

You can cancel the measurement at any time by pressing the START/STOP button.

As soon as a pulse is found, the pulse symbol will be displayed. Systolic pressure, diastolic pressure and pulse readings are displayed.

Er\_ appears if the measurement has not been performed properly. Please check the error messages/troubleshooting section in these instructions for use and repeat the measurement.

Now select the desired user memory by pressing the memory button M. If you do not select a user memory, the measurement is stored in the most recently used user memory. The relevant user one or user two symbol appears on the display.

Press the START/STOP button to switch off the blood pressure monitor. The measurement is then stored in the selected user memory.

If you forget to turn off the device, it will switch off automatically after approximately one minute. In this case too, the value is stored in the selected or most recently used user memory. Wait at least five minutes before taking another measurement.

### Voice output when voice function is active

The device is ready for use. You may start measuring.

Average count:

Systole ... mmHg

Diastole ... mmHg

Heart rate ... beats per minute

According to the WHO guidelines your blood pressure is...

## Evaluating results

### Cardiac arrhythmia

This unit can identify potential disruption of the heart rhythm when measuring and if necessary, indicates this after the measurement with the Cardiac arrhythmia symbol. If the voice function is activated, the device will announce: “A possible cardiac arrhythmia was found.”

This can be an indicator for arrhythmia. Arrhythmia is an illness in which the heart rhythm is abnormal because of flaws in the bioelectrical system that regulates the heartbeat. The symptoms (skipped or premature heart beats, pulse being slow or too fast) can be caused by factors such as heart disease, age, physical make-up, excess stimulants, stress or lack of sleep. Arrhythmia can only be determined through an examination by your doctor. If the Cardiac arrhythmia symbol is shown on the display after the measurement has been taken, it should be repeated.

Please ensure that you rest for five minutes beforehand and do not speak or move during the measurement. If the Cardiac arrhythmia symbol appears frequently, please consult your doctor. Self-diagnosis and treatment based on the measurements can be dangerous. Always follow your GP’s instructions.

### Classification of measurements

These standard values serve only as a general guideline, as the individual blood pressure varies in different people and different age groups etc. It is important to consult your doctor regularly for advice. Your doctor will tell you your individual values for normal blood pressure as well as the value above which your blood pressure is classified as dangerous.

The classification on the display and the scale on the device show which category the recorded blood pressure values fall into. If the values of systole and diastole fall into two different categories (e.g. systole in the ‘High normal’ category and diastole in the ‘Normal’ category), the graphical classification on the device always shows the higher category; for the example given this would be ‘High normal’.

* **Level 3 severe hypertension**: Systole (in mmHg) - ≥ 180; Diastole (in mmHg) - ≥ 110; Action - seek medical attention
* **Level 2 moderate hypertension**: Systole (in mmHg) - 160 – 179; Diastole (in mmHg) - 100 – 109; seek medical attention
* **Level 1 mild hypertension:** Systole (in mmHg) - 140 – 159; Diastole (in mmHg) - 90 – 99; regular monitoring by doctor
* **High normal:** Systole (in mmHg) - 130 – 139; Diastole (in mmHg) - 85 – 89; regular monitoring by doctor
* **Normal:** Systole (in mmHg) - 120 – 129; Diastole (in mmHg) - 80 – 84; self-monitoring
* **Optimal:** Systole (in mmHg) - < 120; Diastole (in mmHg) - < 80; self-monitoring

## Saving, displaying and deleting measurements

Whilst the message is being displayed, the volume can be adjusted with the function buttons.

### User memory

The results of every successful measurement are stored together with the date and time. If there are more than 60 measurements, the oldest measurements are lost.

To retrieve the measurement, press the memory button M. ‘A’ flashes in the memory space square situated above the memory user symbol on the display. The average value of all saved measured values in this user memory is displayed.

To change the user memory, press and hold the memory button M for approximately three seconds.

### Average values

Press the memory button M.

AM flashes at the top of the memory space square on the display. The average value of the morning measurements for the last 7 days is displayed (morning: 5.00 a.m. – 9.00 a.m.).

Press the memory button M.

PM flashes at the top of the memory space square on the display. The average value of the evening measurements for the last 7 days is displayed (evening: 6.00 p.m. – 8.00 p.m.).

### Individual measured values

When you press the memory button M again, the last individual measurement is displayed (in this example, measurement 03 of user 1).

When the memory button M is pressed again, you can view your individual measurements.

To switch the device off again, press the START/STOP button. You can exit the menu at any time by pressing the START/STOP button.

### Delete measured values

To clear the memory of the relevant user memory, you must first select a user memory. • Start the retrieval of the average measured values. ‘A’ flashes on the display and the average value of all saved measured values in this user memory is displayed. Press and hold the memory button M and the START/STOP button simultaneously for five seconds.

All values of the current user memory are deleted and the device switches off.

## Cleaning and storing the unit

Clean your blood pressure monitor and cuff carefully using a slightly damp cloth only.

Do not use any cleaning agents or solvents.

Under no circumstances should you hold the unit under water, as this can cause liquid to enter and damage the unit.

If you store the unit, no heavy objects should be placed on top of it. Remove the batteries. The cuff line should not be bent sharply.

## Storage and Care

* The blood pressure monitor is made up of precision electronic components.
* Accuracy of readings and the instrument’s service life depend on careful handling.
* You should protect the device from impact, moisture, dirt, major temperature fluctuations and direct exposure to the sun’s rays.
* Never drop the device.
* Do not use near strong electromagnetic fields, i.e. keep it away from any radio systems and mobile phones.
* Only ever use the cuffs provided with the monitor or original replacement cuffs. Otherwise erroneous results will be recorded.
* Do not press any buttons until the cuff is in position.
* If the instrument is not used for any length of time, we recommend removing the batteries.

## Notes on handling batteries

* If your skin or eyes come into contact with battery fluid, rinse the affected areas with water and seek medical assistance.
* Choking hazard! Small children may swallow and choke on batteries. Store the batteries out of the reach of small children.
* Observe the plus (+) and minus (-) polarity signs.
* If a battery has leaked, put on protective gloves and clean the battery compartment with a dry cloth.
* Protect batteries from excessive heat.
* Risk of explosion! Never throw batteries into a fire.
* Do not charge or short-circuit batteries.
* If the device is not to be used for a relatively long period, take the batteries out of the battery compartment.
* Use identical or equivalent battery types only.
* Always replace all batteries at the same time.
* Do not use rechargeable batteries.
* Do not disassemble, split or crush the batteries.

## Technical specification

* Measurement method: Oscillometric, non-invasive blood pressure measurement on the wrist.
* Measurement range: Cuff pressure 0 – 300 mmHg, systolic 60-260 mmHg, diastolic 40-199 mmHg, Pulse 40 –180 beats/minute.
* Display accuracy: Systolic ± 3 mmHg, diastolic ± 3 mmHg, pulse ± 5 % of the value shown.
* Measurement inaccuracy: Max. permissible standard deviation according to clinical testing: systolic 8 mmHg /diastolic 8 mmHg.
* Memory: 2 x 60 memory spaces.
* Dimensions: L 87 mm x W 67 mm x H 31 mm.
* Weight Approx.: 105 g (without batteries).
* Cuff size: 140 to 195 cm.
* Permissible operating conditions: +10 °C to +40 °C, ≤ 85 % relative air humidity (non-condensing).
* Permissible storage conditions: -20 °C to +50 °C, ≤ 85 % relative air humidity, 800 –1050 hPa ambient pressure.
* Power supply: 2 x 1.5 V AAA batteries.
* Battery life: For approx. 200 measurements, depending on the blood pressure level and/or pump pressure.
* Accessories: Instruction for use, two x 1.5 V AAA batteries, storage box.
* Classification: Internal supply, IP22, no AP or APG, continuous operation, type BF.

The serial number is located on the device or in the battery compartment. Technical information is subject to change without notification to allow for updates.

This device complies with European Standard EN60601-1-2 (in accordance with CISPR 11, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-8) and is subject to particular precautions with regard to electromagnetic compatibility. Please note that portable and mobile HF communication systems may interfere with this device.

The device complies with the EU Medical Devices Directive 93/42/EEC, the German Medical Devices Act (Medizinproduktgesetz) and the standards EN1060-1 (Non-invasive sphygmomanometers – Part 1: General requirements), EN1060-3 (Noninvasive sphygmomanometers – Part 3: Supplementary requirements for electro-mechanical blood pressure measuring systems) and IEC80601-2-30

(Medical electrical equipment – Part 2 – 30: Particular requirements for the basic safety and essential performance of automated non-invasive sphygmomanometers).

The accuracy of this blood pressure monitor has been carefully checked and developed with regard to a long useful life. If the device is used for commercial medical purposes, it must be regularly tested for accuracy by appropriate means. Precise instructions for checking accuracy may be requested from the service address.

## Hints and Tips

In the event of errors, the error message Er\_ appears on the display.

Error messages can occur when:

* the systolic or diastolic pressure could not be measured (Er1 or Er2 appears on the display)
* the systolic or diastolic pressure was outside the measurement range (“Hi” or “Lo” appears on the display)
* the cuff is fastened too tightly or loosely (Er3 or Er4 appears on the display)
* the blood pressure is higher than 300 mmHg (Er5 appears on the display)
* inflating takes longer than 180 seconds (Er6 appears on the display)
* there is a system or device error (ErA, Er0, Er7 or Er8 appears on the display)
* the batteries are almost empty.

In such cases, repeat the measurement. Ensure that you do not move or speak. If necessary, reinsert or replace the batteries.

## How to contact RNIB

Phone: 0303 123 9999

Email: shop@rnib.org.uk

Address: RNIB, Midgate House, Midgate, Peterborough PE1 1TN

Online Shop: shop.rnib.org.uk

Email for international customers: exports@rnib.org.uk

## Terms and conditions of sale

This product is guaranteed from manufacturing faults for 24 months from the date of purchase. If you have any issues with the product and you did not purchase directly from RNIB then please contact your retailer in the first instance.

For hygiene reasons, this product is only returnable if faulty or within 14 days of receipt, in an “as new”, unused condition in original, undamaged packaging. For all returns and repairs contact RNIB first to get a returns authorisation number to help us deal efficiently with your product return.

You can request full terms and conditions from RNIB or view them online.

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This product is CE marked and fully complies with all applicable EU legislation.

Please do not throw items marked with this symbol in your bin. Recycle your electricals and electronic devices **free** at your local recycling centre. Search for your nearest recycling centre by visiting [www.recyclenow.com](http://www.recyclenow.com).

### Why recycle?

Unwanted electrical equipment is the UK’s fastest growing type of waste.

Many electrical items can be repaired or recycled, saving natural resources and the environment. If you do not recycle, electrical equipment will end up in landfill where hazardous substances will leak out and cause soil and water contamination – harming wildlife and human health.

RNIB are proud to support your local authority in providing local recycling facilities for electrical equipment.

To remind you that old electrical equipment can be recycled, it is now marked with the crossed-out wheeled bin symbol. Please do not throw any electrical equipment (including those marked with this symbol) in your bin.

### What is WEEE?

The Waste Electrical or Electronic Equipment (WEEE) Directive requires countries to maximise separate collection and environmentally friendly processing of these items.

### How are we helping?

In the UK, distributors including retailers must provide a system which allows all customers buying new electrical equipment the opportunity to recycle their old items free of charge. As a responsible retailer, we have met the requirements placed on us by financially supporting the national network of WEEE recycling centres established by local authorities. This is achieved through membership of the national Distributor Take-back scheme (DTS).

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