

Digital Arm Auto Blood Pressure Monitor

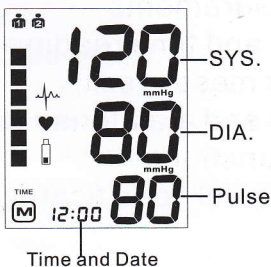
INSTRUCTION MANUAL



Model: ABP-A091

The various components of the blood-pressure monitor

The illustration shows the upper arm blood-pressure monitor, consisting of:



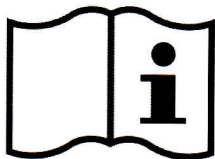


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1. Important information on the subject of blood-pressure and its measurement

1.1. How does high/low blood-pressure arise?

The level of blood-pressure is determined in a part of the brain, the so-called circulatory centre, and adapted to the respective situation by way of feedback via the nervous system. To adjust the blood-pressure, the strength and frequency of the heart (Pulse), as well as the width of circulatory blood vessels is altered. The latter is effected by way of fine muscles in the blood-vessel walls.

The level of arterial blood-pressure changes periodically during the heart activity: During the « blood ejection » (Systole) the value is maximal (systolic blood-pressure value), at the end of the heart's « rest period » (Diastole) minimal (diastolic blood-pressure value).

The blood-pressure values must lie within certain normal ranges in order to prevent particular diseases.

1.2. Which values are normal?

Blood pressure is too high if at rest, the diastolic pressure is above 90 mmHg and/or the systolic blood-pressure is over 160 mmHg. In this case, please consult your doctor immediately. Long-term values at this level endanger your health due to the associated advancing damage to the blood vessels in your body.

Should the systolic blood–pressure values lie between 140 mmHg and 160 mmHg and/or the diastolic blood–pressure values lie between 90 mmHg and 100 mmHg, likewise, please consult your doctor. Furthermore, regular self–checks will be necessary.

With blood–pressure values that are too low, i.e. systolic values under 100 mmHg and/or diastolic values under 60 mmHg, likewise, please consult your doctor.

Even with normal blood–pressure values, a regular self–check with your blood–pressure monitor is recommended. In this way you can detect possible changes in your values early and react appropriately. If you are undergoing medical treatment to control your blood pressure, please keep a record of the level of your blood pressure by carrying out regular self–measurements at specific times of the day. Show these values to your doctor. **Never use the results of your measurements to alter independently the drug doses prescribed by your doctor.**

Table for classifying blood–pressure values (unit: mmHg) according to World Health Organization:

Range	Systolic	Diastolic	Measures
	Blood–pressure	Blood–pressure	
Hypotension	lower than 100	lower than 60	Check with your doctor
Normal range	between 100 and 140	between 60 and 90	Self–check
Mild hypertension	between 140 and 160	between 90 and 100	Consult your doctor
Moderately serious hypertension	between 160 and 180	between 100 and 110	Consult your doctor
Serious hypertension	higher than 180	higher than 110	Consult your doctor immediately



Further information

- If your values are mostly standard under resting conditions but exceptionally high under conditions of physical or psychological stress, it is possible that you are suffering from so–called «labile hypertension». Please consult your doctor if you suspect that this might be the case.
- Correctly measured diastolic blood–pressure values above 120 mmHg require **immediate medical treatment**.

1.3. What can be done, if regular increased/low values are obtained?

- Please consult your doctor.
- Increased blood–pressure values (various forms of hypertension) are associated long– and medium term with considerable risks to health. This concerns the arterial blood vessels of your body, which are endangered due to constriction caused by deposits in the vessel walls (Arteriosclerosis). A deficient supply of blood to important organs (heart, brain, muscles) can be the result. Furthermore, with long–term continuously increased blood–pressure values, the heart will become structurally damaged.
- There are many different causes of the appearance of high blood pressure. We differentiate between the common primary (essential) hypertension, and secondary hypertension. The latter group can be ascribed to specific organic malfunctions. Please consult your doctor for information about the possible origins of your own increased blood pressure values.

- d) There are measures which you can take, not only for reducing a medically established high blood pressure, but also for prevention. These measures are part of your general way of life:

A) Eating habits

- Strive for a normal weight corresponding to your age. Reduce overweight!
- Avoid excessive consumption of common salt.
- Avoid fatty foods.

B) Previous illnesses

- Follow consistently any medical instructions for treating previous illness such as:
- Diabetes (Diabetes mellitus)
- Fat metabolism disorder
- Gout

C) Habits

- Give up smoking completely
- Drink only moderate amounts of alcohol
- Restrict your caffeine consumption (Coffee)

D) Physical constitution:

- After a preliminary medical examination, do regular sport.
- Choose sports which require stamina and avoid those which require strength.
- Avoid reaching the limit of your performance.
- With previous illnesses and/or an age of over 40 years, please consult your doctor before beginning your sporting activities. He will advise you regarding the type and extent of types of sport that are possible for you. will advise you regarding the type and extent of types of sport that are possible for you.



2. Putting the blood-pressure monitor into operation

2.1. Inserting the batteries

After you have unpacked your device, first insert the batteries. The battery compartment is located on the back of the device (see illustration).

a) Remove cover as illustrated

b) Insert the batteries (4 x size AA 1.5V), thereby observing the indicated polarity.

If a battery warning “” appears in the display, the batteries are almost flat and must be replaced. After battery warning “” appears, the batteries are empty and the device will not work until batteries have been replaced.



2.2. User Selection

This advanced blood pressure monitor allows you to track blood pressure readings for 2 individuals independently.

a) After insert the batteries before measurement, make sure you set the unit for the intended user. The unit can track results for 2 individuals. (User 1, User2)

b) Press the SET button for at least 3 seconds.

the display now indicates the set user, during which the set user blink. to confirm, press ON/OFF button.

c) Click the MEMORY button to select user

d) We suggest the first person to take their pressure to User 1.

2.3 Setting the time and date and unit selection

1) Please press the SET button, the display now displays the set date and time.

- 2) Press the SET button for at least 3 seconds. The display now indicates the set year, during which the last two characters blink. The correct year can be entered by pressing the MEMORY button.
- 3) Press the SET button again. The display now switches to the current date, during which the first character (month) blinks. The corresponding month can now be entered by pressing the MEMORY button.
- 4) Press the SET button again. The last two characters (day) are now blinking. The corresponding day can now be entered by pressing the MEMORY button.
- 5) Press the SET button again. The display now switches to the current time, during which the first character (Hour) blinks. The corresponding hour can now be entered by pressing the MEMORY button.
- 6) Press the SET button again. The last two characters (time) are blinking. The exact time can now be entered by pressing the MEMORY button.
- 7) Press the SET button again. The characters (unit) are now blinking. The corresponding unit include mmHg and KPa can now be set by pressing the MEMORY button. Press the SET button again.
- 8) Now after all settings have been made, press the SET button once again. The date is briefly displayed and then the time. The input is now confirmed and the clock begins to run.

2.4. Setting the medication reminder

This instrument allows you to set two alarm times at which an alarm signal will then be triggered. This can be an useful and, for instance as a reminder to take medication or to remind you to take you blood pressure at the same time each day.

1. To set an alarm time, press the "SET" button(the instrument must have been switched off beforehand)and immediately afterwards the "MEMORY" button and hold both down until the bell symbol appears in the bottom left of the display. Then release both buttons. The flashing "1" in the display indicates that the first alarm time can now be set.

2. Press the time button to set the hours -the hours display flashes and press the "MEMORY" button allows you to set the alarm hour. To confirm, press the SET button.

3.The minute display will now flash. the minutes can be set using the "MEMORY"button. to confirm, press the SET button again.

4.The bell symbol will now flash. Use the"MEMORY" button to select whether the alarm time is to be active (bell) or inactive (crossed-out bell). to confirm, press the time button.

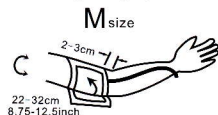
To set a second alarm time, proceed as above but if the "1" flashes, press the"MEMORY" button to select "2" and confirm with the SET button.

- an active alarm time is indicated by bell symbol in the display
- the alarm sounds at the set time every day.
- To switch-off the alarm, when is sounding, press ON/OFF button
- To permanently switch-off the alarm, proceed as above (step1~4),and select the crossed-out bell symbol. this will then disappear from the display.
- the alarm time must be re-entered each time the battery are replaced.

3.Carrying out a measurement

1.Avoid eating, smoking as well as all forms of exercise directly before the measurement. All these factors influence the measurement result.

2. Try and find time to relax by sitting in an armchair in a quiet atmosphere for about ten minutes before the measurement.
3. Remove all eventual objects and jewellery (e.g. wristwatch) from the wrist in question.
4. Secure the cuff with the Velcro closer in such a way that it lies comfortably and is not too tight. Lay your arm on a table (palm upwards) so that cuff is at the same height as your heart. There is measuring range printed on the cuff.



5. Lay the arm on a table, with the palm upwards. Support the arm a little with a rest (cushion), so that the cuff rests at about the same height as the heart. Take care, that the cuff lies free. Remain so for 2 minutes sitting quietly, before beginning with the measurement.
6. After the cuff has been appropriately positioned, the measurement can begin. Press the 0/I-button, the pump begins to inflate the cuff. In the display, the increasing cuff-pressure is continually displayed.
7. After reaching the inflation pressure, the pump stops and the pressure slowly falls away. The cuff-pressure (large characters) is displayed during the measurement.
8. When the device has detected the pulse, the heart symbol in the display begins to blink and a beep tone is audible for every pulse beat.
9. When the measurement has been concluded, a long beep tone sounds. The measured systolic and diastolic blood-pressure values as well as the pulse frequency

are now displayed. The measurement results are displayed, until you switch the device off. If no button is pressed for 3 minutes, the device switches automatically off, to save the batteries.

10. If it is necessary to interrupt a blood pressure measurement for any reason (e.g. the patient feels unwell), the 0/I button can be pressed at any time. The device then immediately lowers the cuff-pressure automatically.

4. Memory – storage and recall of the measurements

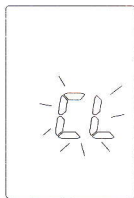
The blood-pressure monitor automatically stores each of the last 120 measurement values. By pressing the MEMORY button, the last measurement (MR1) as well as the further last 120 measurements (MR2, MR3, ..., MR120) can be displayed one after the other, in the meantime the measured date and time are displayed. (MR1: Values of the last measurement) (MR2-MR120: Values of the measurement before MR1)



4.1. Memory-cancellation of all measurements Attention!

In order to delete all stored readings, depress the MEMORY button for at least 5 seconds, the display will show the symbol «Cl» and then release the button, to permanently clear the memory.

Press the MEMORY button while «CL» is flashing 3 short beep sounds will be heard to indicate deletion of stored readings.



5.Date and time reading

Press the SET button when the power is off, the current date and time will be displayed according to the setting. The device switches automatically off after display 30 seconds.



6.Error messages

If an error occurs during a measurement, the measurement is discontinued and a corresponding error code is displayed (Example: Error 1).

Error No.	Illustration	Possible cause(s)
Er 1		No pulse has been detected.
Er 2		Unnatural pressure impulses influence the measurement result. Reason: The arm was moved during the Measurement (Artefact).
Er 3		The inflation of the cuff takes too long. The cuff is not correctly seated.
Er 5		The measured readings indicated an unacceptable difference between systolic and diastolic pressures.

7. Care and maintenance, recalibration

- ◆ Use the device according to the instruction manual. The manufacturer isn't responsible for the damage caused by improper handling.
- ◆ Do not expose the device to either extreme temperatures, humidity, dust or direct sunlight.
- ◆ The cuff contains a sensitive air-tight bubble. Handle this carefully and avoid all types of straining through twisting or buckling.
- ◆ Clean the device with a soft, dry cloth. Do not use petrol, thinners or similar solvent. Spots on the cuff can be removed carefully with a damp cloth and soapsuds. The cuff must not be washed!
- ◆ Do not drop the instrument or treat it roughly in any way. Avoid strong vibrations.

- ◆ Never open the device! Otherwise the manufacture calibration becomes invalid!
- ◆ Sensitive measuring devices must from time to time be checked for accuracy. We therefore recommend a periodical inspection of the static pressure display every 2 years. Your specialist dealer would be pleased to provide more extensive information about this.

8. Malfunctions

Malfunction	Remedy
1. The display remains empty when the instrument is switched on although the batteries are in place.	1. Check batteries for correct polarity and if necessary insert correctly. 2. If the display is unusual, re-insert batteries or exchange them.
2. The device frequently fails to measure the blood pressure values, or the values measured are too low (too high).	1. Check the positioning of the cuff. 2. Measure the blood-pressure again in peace and quiet under observance of the details made under point 3.
3. Blood pressure measured differs from those values measured by the doctor. Every measurement produces a different value although the instrument functions normally and the values displayed are normal.	1. Attempt to carry out the measurements regularly at the same time of day, since the blood-pressure changes during the course of the day. 2. Record the daily development of the values and consult your doctor.

9. Technical specifications

Measurement Principle: Oscillometric method

Display: Digital display

Measuring range:

SYS/DIA: 30 to 280 mmHg (in 1 mmHg increment)

Pulse: 40 to 200 beat/minute

Accuracy:

SYS/DIA: ± 3 mmHg

Pulse: $\pm 5\%$ of reading

Measuring resolution: 1 mmHg

Inflation: Automatic inflation by internal pump

Inflation setting: Auto inflation setting (140 to 250 mmHg)

Memory function: UP to 2x120 memories (SYS., DIA., Pulse)

Decompression: Constant exhaust valve system

Power source: 4 size AA 1.5V alkaline Batteries

Battery life:

Alkaline batteries: approx. 400 times

Manganese batteries: approx. 200 times

(160 mmHg, 1 time/day, 22°C)

Operation temperature: 5~40°C / 41~104°F

Operation humidity: 15%~85% RH maximum

Storage temperature: -10~55°C / 14~131°F

Storage humidity: 10%~95% RH maximum

Dimensions: $125 \times 91 \times 61 \pm 0.5$ mm

Weight: About 386g ± 5 g (including batteries)

Cuff pressure display range: 0~299 mmHg / 0~39.9 kPa

Mode of operation: Continuous operation

Protection against ingress of water: IPX0

Accessories: A set of cuff, four AA batteries, instruction manual