

# Arm Blood Pressure monitor User manual



Model: BPM-A7VL

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Shenzhen IMDK Medical Technology Co., Ltd.

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## Introduction

### 1 Copyright

Shenzhen IMDK Medical Technology Co., LTD

### 2 Notice


All rights reserved. No part of this manual may be photocopied, duplicated or translated into any other language without the prior written consent of IMDK.

### 3 Manufacturer's liability

Shenzhen IMDK Medical Technology Co., Ltd is responsible for the safety, reliability and performance of the instrument only in the following circumstances:

Assembly operations, extensions, modifications and repairs are carried out by personnel approved by IMDK, the electrical installation of the relevant site complies with the relevant standards, and the instrument is operated according to the instruction manual.

Shenzhen IMDK Medical Technology Co., Ltd provides technical documents or schematics to qualified maintenance engineers recognized by the company to maintain and repair the machine when requested by the user.

















 **Warning:** The intended use of this instrument is for the detection of blood pressure and pulse, not for treatment. If the measurement results are not reliable, immediately use other methods for further examination. The patient is the intended operator.

### 4 Warranty

This instrument can't be repaired by the user. All maintenance treatment should be carried out by technicians approved by the company. The warranty covers all instrument failures due to the failure of material components or production processes. During the warranty period, all faulty parts can be repaired and replaced free of charge. Man-made damage is not covered by the warranty.

## Safety precautions

The technical instructions and the operating instructions are in the same manual. The warnings and legends expressed in the instructions are intended to enable you to use the product safely and correctly, so as to prevent harm to you and others. The specific meanings are as follows:

Symbol	Explain
	BF type Application part
	Warning
	See the Instruction
	Separate Collection
	Indicates a medical device that needs to be protected from moisture.
	CE marking in conformity with 2017/745/EU MDR
	Serial Number
	Date of manufacture
	Manufacturer
IP21	The first number 2: Protected against solid foreign objects of 12.5 mm $\Phi$ and greater. The second number 1: Vertically falling drops shall have no harmful effects.
	UP
	Fragile article
	Recyclable
	Prohibited
	Note on important information
	Authorised representative in the european commdevicecy
	Batch code

 Note:

1. This product is only used for daily monitoring of blood pressure, not for diagnosis of hypertension. It is dangerous for patients to self-diagnose and change their medication based on measurement results alone. If your measurements exceed normal levels, consult your doctor immediately.
2. Self-judgment may lead to worsening of the condition, and it is necessary to ask a professional to explain the measured blood pressure value.
3. Do not use for purposes other than blood pressure measurement.
4. This product is for adults only. Do not use this device for people who cannot express their thoughts correctly including infants and newborns.
5. For patients with arterial stenosis or peripheral circulation disorders caused by certain diseases, such as diabetes, hyperlipidemia, hypertension and other accelerated arteriosclerosis, the blood pressure measured in the arm and the upper arm may have a large difference. Do not use the cuff on the arm where the side of a mastectomy.
6. Because blood pressure also varies with the time of day. So take your blood pressure at the same time every day to ensure the reliability of your measurements.
7. Because blood pressure changes from time to time, and the measurement method is different in details every time. There are more influencing factors at different times and occasions. So when the test state is very standardized, it is also necessary to test two or three times to rule out chance.
8. Blood pressure measured at home is 25-30mmHg lower than that measured in the hospital, because some people will involuntarily nervous when they see medical staff wearing white coats, thus increasing blood pressure, medically called "white coat hypertension".
9. When measuring in a seated position, you can adjust the position of the cuff by placing your hand on the table or adding a sphygmomanometer storage box or pillow as required. Padded items should not press down on the cuff to avoid affecting the measurement value.
10. In order to accurately measure the correct blood pressure

value, please make sure that the position of the cuff is at the same level as the heart, relax the palm upward and do not force, and measure after 5-6 (times) deep breathing, so as to obtain a more accurate value.

11. The cuff must be at the same level as the heart, too low or too high will affect the accuracy of the measurement value, resulting in error. If the cuff is lower than the heart, or the cuff is too tight, the blood pressure may be too high. Blood pressure higher than that measured by the heart may be lower.

12. Please rest quietly for 4-5 minutes before each measurement.

13. Please do not place the product near charged objects to avoid electric shock.

14. When using this product, please stay away from high voltage equipment and signal transmitter to avoid interference and error.

15. Do not fall on the ground, and do not twist the body and cuff

16. When it is dirty in single patient daily use, clean the monitor with soft dry cloth. If it is necessary, please use wiped soft cloth with water before cleaning by soft cloth. Then clean the device with 75% alcohol. When multiple patients use between uses on different patients, cleaning with 75% alcohol must be conducted after each use.

17. Do not disassemble, repair and transform the body by yourself, and do not try to calibrate or repair by yourself. If you replace the original parts with parts not provided by the manufacturer, it may cause measurement errors.

18. This product is IP21 waterproof, please be careful not to let liquids (alcohol, water droplets, hot water, etc.) into the body.

19. If there is a lack of strokes on the display screen, please contact us.

20. Take out the battery when not in use for a long time. Dispose of used batteries according to local environmental protection requirements.

21. The disposal of host and spare parts waste shall be handled in accordance with the city's regulations on environmental protection.

22. Please use the alkaline battery, do not use the rechargeable battery. The different type battery might result in measurement

error. Please follow the battery requirement of manufacturer.

23. Do not measure within 1 hour after eating, smoking, drinking or coffee (black tea). Do not take measurements in standing, walking, moving vehicles, when the body is under pressure, at extreme temperatures, or in various harsh environments.

24. Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.



#### Warning:

1. The blood pressure measured by this device is equivalent to that measured by auscultation method, and its error conforms to the requirements stipulated in IEC 80601-2-30.

2. The cuff used with the blood pressure monitor is suitable for the limb circumference: 23~33cm & 33~47cm.

3. The accuracy of the sphygmomanometer has been strictly tested, and it is generally recommended to calibrate the sphygmomanometer once every 1 year to ensure that the sphygmomanometer functions normally and the measurement is accurate. You have to send the device to the qualified calibration department or manufacturer to calibrate.

4. Recommended disinfection procedures.

5. The pictures in this manual are for reference only.

6. The adapter cable may cause accidental strangulation in infants. Do not swallow small parts that may cause choking hazard.

7. If stored or used outside the temperature and humidity range specified by the manufacturer, the system may not achieve the claimed performance.

8. Replacing the original parts with parts not provided by the manufacturer may cause measurement errors

9. This product is repaired by Shenzhen IMDK Medical Technology Co., Ltd. or an authorized qualified engineer. If the user needs any service/maintenance information, please contact the company by contact number.

10. In order to avoid possible injury, please use within the validity

period of the instrument, the instrument is used for 5 years, the production date of the instrument label. Be sure to follow the instructions when operating this instrument.

11. Do not modify this equipment without the manufacturer's authorization.

## **Chapter 1: Product introduction**

### **1.1 Description and Intended use**

#### **1.1.1 Description**

This arm type electronic sphygmomanometer is a liquid crystal digital display electronic sphygmomanometer, used to measure the blood pressure and pulse of people over the age of 12, not suitable for newborns. This Arm Blood Pressure Monitor is suitable for daily life home health care or personal health care, which can make people timely measure their own blood pressure in order to carry out health management of blood pressure. It can also be used as a reference measurement of blood pressure in clinical patients but not as a diagnostic basis.

#### **1.1.2 Intended use**

Arm Blood Pressure Monitor is intended to measure the blood pressure and pulse rate of person older than twelve (12) years in household or medical facilities.

#### **1.1.3 Indications**

Person older than twelve (12) years.

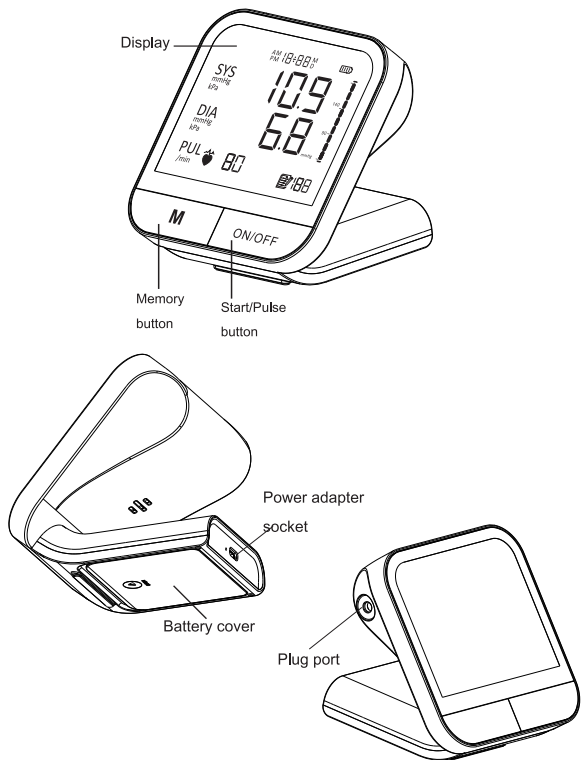
### **1.2 contraindication**

- 1). The one who suffer from severe heart disease, liver or kidney disease, serious circulatory disorders, blood disorders
- 2). Newborns, young children, people with mental disorders and people who cannot explain their thoughts
- 3). The one who with arm trauma don't use this device;
- 4). The one who with artificial heart and skin ulcers is prohibited to use this device.

### 1.3 Structural composition

It consists of a main machine and a cuff.

### 1.4 Host part



## Function key description

### 1). ON/OFF: Start/pulse button

① In the sleep state, tap to enter the automatic measurement mode.

② In other states, press the power ON/OFF button.

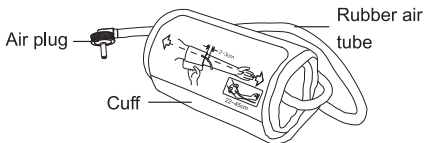
### 2). M (Memory button)

① In the sleep state, short press the M key for the first time to display the average of the last three times, then press the M key to display the first set of memory values, and press the M key to view the measured values.

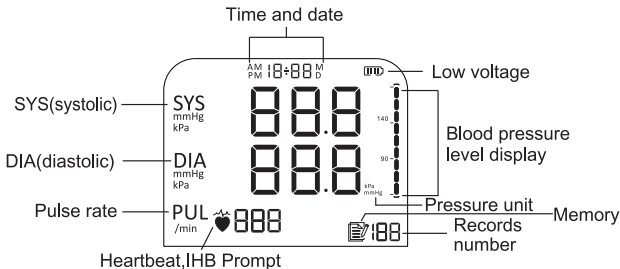
② In the sleep state, long press the M key + ON/OFF key until the year display flashes, indicating entering the setting mode. In this mode, short press ON/OFF key to confirm and short press M key to adjust.

## 1.5 Cuff

The suitable upper-arm circumference: 23~33cm & 33~47cm



## 1.6 Display screen



Function description:

- 1) SYS (systolic): high pressure measurement.
- 2) DIA (diastolic): Low pressure measurement.
- 3) Pulse rate: Pulse rate measurement.
- 4) Time and date: Time and date display.
- 5) Low voltage: Battery level display.
- 6) Blood pressure level display: Blood pressure level display.
- 7) Pressure unit: Blood pressure unit display.
- 8) Other Display: records number / Heartbeat.

### **1.7 Technical parameter**

- 1) Product name: Arm blood pressure monitor
- 2) Model: BPM-A7VL;
- 3) Software version: V1.1.
- 4) Display mode: liquid crystal display screen;
- 5) Testing mode: Oscillographic testing mode;
- 6) Operation mode classification: Intermittent measurement, continuous operation.
- 7) Electrical safety classification: internal power supply equipment Class II equipment, BF application part.
- 8) Equipment type: non-AP/APG equipment (equipment that cannot be used when there is flammable anesthetic gas mixed with air or flammable anesthetic gas mixed with oxygen or nitrous oxide).

Ingress protection degree: IP21.

- 9) Rated cuff pressure: 0~295mmHg (0~39.1kPa)

10) Measuring pressure:

SYS: 60mmHg~230mmHg(8.0KPa~30.7KPa)

DIA: 40mmHg~130mmHg(5.3KPa~17.3KPa)

11) Pulse rate: 40~200 times/min;

12) Measurement accuracy:

Blood Pressure: within  $\pm 3$ mmHg ( $\pm 0.4$ kPa)

Pulse rate: within  $\pm 5\%$  of reading

Analysis accuracy: 1 mmHg/0.1 kPa.

- 13) Air charging mode: automatic charging;
- 14) Air leakage device: air relief valve;
- 15) Quick air leakage: electronic air release valve;
- 16) Result display: high pressure/low pressure/pulse;
- 17) Unit conversion: conversion of blood pressure value unit mmHg/KPa (default unit when start is mmHg);
- 18) Number of memory groups: 99 memory groups;
- 19) Power supply: 4 AA type 1.5V dry batteries (no less than 2 hours of continuous use on new battery power) or powered by adapter via USB cable.

**Note:**

1. Please make sure the power output of connected adapter is DC5V 1A.

2. Please make sure the connected adapter meets the requirements of ICE60601 standard).

20) Waterproofing Grade: IP21;

21) Accessories: 1 bag; 1 user manual; 1 USB cable.

22) Physical characteristics:

① Dimension(L\*W\*H): about 110mm x 103mm x 103 (mm)

② Weight: about 280g

③ Suitable arm circumference:23~33(cm) & 33~47cm

④ Operating temperature and humidity:

Temperature: +5°C~ +40°C, Humidity: 15%-85% RH

Atmospheric pressure: 80 kPa ~ 106kPa

⑤ Storage and Transport condition

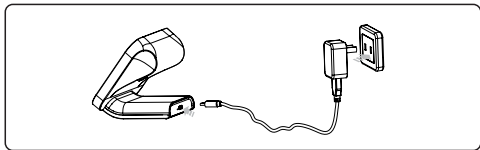
Temperature: -20°C~+50°C,

Humidity: 15%-85%RH (non-condensing),

Atmospheric pressure: 80 kPa ~ 106kPa.

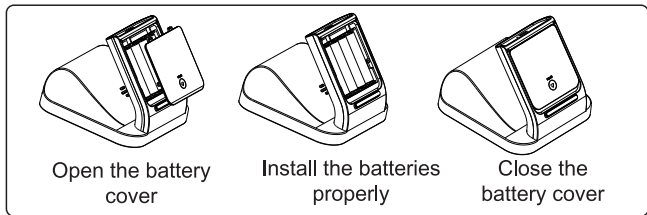
## Chapter 2: Connect power

### 2.1 Use a power adapter to connect the power supply



- 1). Use a power adapter to connect the power supply
- 2). During power supply, the icon displays the full battery capacity.
- 3). Remove the power adapter after use.


### 2.2 Install and change battery



- 1). Open the battery cover: Remove the battery box cover in the direction of the arrow
- 2). Insert four AA alkaline batteries with 1.5V into the battery slot in accordance with electrode indication in the battery slot, and then put the battery cover back on.

#### Warning:

Please install the positive and negative electrodes corresponding to the +&- electrodes of the device.

The “” icon displayed means the battery is low.

The “” icon twinkled means the battery is running out. Please

replace all the batteries.

Please take out the batteries if the monitor will not be used for a long time (over three months).

5V/1A DC external power can be connected to the monitor. (The power adapter is optional. The USB power supply and adapter meet the requirements of IEC60601)

Please take out the batteries if use the DC external power for a long time (more than one month).

### Chapter 3: Initial setting

The sphygmomanometer can automatically remember 99 sets of measurement values in memory, and can calculate the average of the last 3 sets of measurement results. If the user and time are set correctly, the correct user and measurement time will be stored, otherwise the correct user and measurement time will not be remembered. To take advantage of the memory and average function, the user initializes the sphygmomanometer prior to the first measurement, which includes setting the user, time, sound, and blood pressure units.

#### 3.1 Set time

The monitor will store the measuring results automatically by the management system. It's necessary to reset time and date after installing new batteries or connecting to DC power. Please operate as following steps. (For example: setting the date as 2023-1-01 and time as 08:28)

- 1) Year setting: Press the "M" button and "ON/OFF" for more than 3 seconds till the number starts flashing.
- 2) The year increase once press the "M" button.
- 3) Press the "ON/OFF" button to switch to the month setting.
- 4) Using the same way for other settings.



Year character blink



Month character blink



Date character



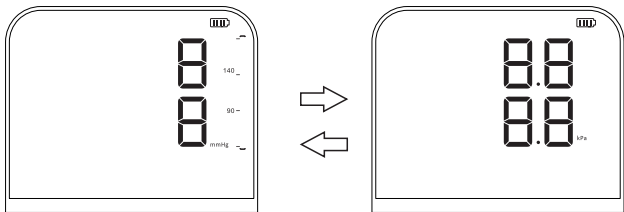
Hour character blink



Minute character blink

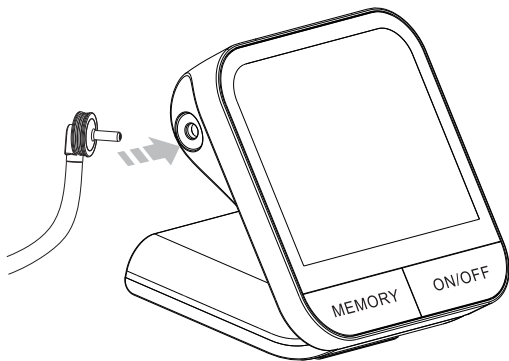
### 3.3 Set blood pressure unit

According to 3.2, after the sound is set, press the ON/OFF key to make sure to switch to "PA" at the same time. In the setting mode, the blood pressure unit represented by "8" is mmHg and "88" is represented by Blood pressure is measured in kPa; If you do not switch, the system default blood pressure pressure unit is mmHg. Select After that, press the Set button to make sure to enter sleep mode at the same time

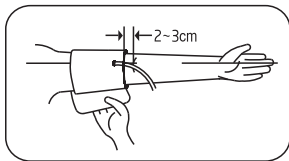


## Chapter 4: Using method of cuff

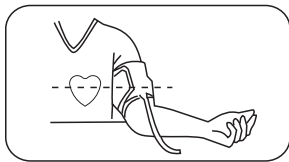
1) Connect the air connector of the cuff to the socket which on the left side of the monitor.



2) Wind the cuff around the upper arm. (as shown in the picture) Keep the lower edge of the cuff at the position above 2-3cm to the elbow joint and keep the air inlet which insert to the cuff at the inner side of arm.

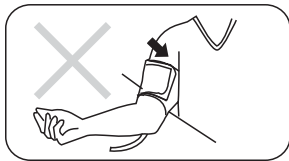


3) Sit straight and flat the arm on table with palm up, also keep the center of cuff and heart at the same level. Also please ensure the air tube not twisted.



**! Warning:**

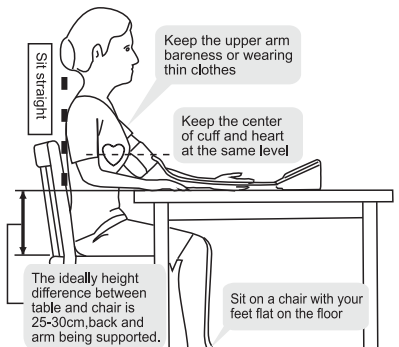
The rubber vents on the cuff are not twisted or discounted.  
The cuff should be wearing comfortably, avoiding too tight or loose.



## Chapter 5: Blood pressure measurement

### 5.1 Correct measuring posture

Keep your body straight and sit correctly without leaning forward or bending;



① After deep breathing 3-4 times before measurement, resume natural breathing, relax shoulders and arms, and relax the whole body;

② When measuring, keep the middle of the cuff at the same height as the heart, and do not shake the body and arm. To achieve this, it is recommended that you use a soft pad on the outside of the lower arm of the arm.

**⚠ Warning: Wrong measurement postures**

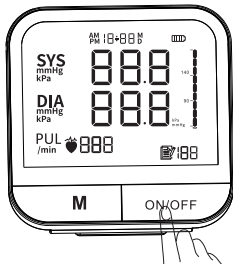
- Do not bend down or body bend forward.
- Do not sit with legs crossed.
- Do not sit on a sofa. (Belly pressure may increase the blood pressure)
- Do not put the arm on the low table. (May increase the blood pressure)

Wrap the cuff around the arm as tightly as possible, ensuring that there is no arm compression proximal to the cuff.

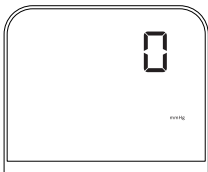


## 5.2 Procedure for blood pressure measurement

1) Press the ON/OFF button, the machine automatically returns to zero, the air pump starts to inflate the cuff and the change in air pressure in the cuff will be displayed on the screen.



Full screen display state

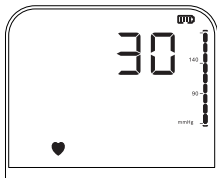


the zeroing state



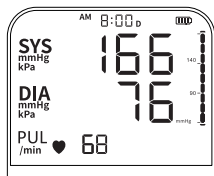
Inflate state

2) When the inflation reaches a stable pressure, the air pump stops inflating, the pressure in the cuff gradually decreases, and is displayed on the screen, while the heartbeat icon flashes.

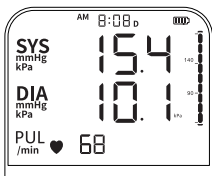


measurement state

3) At the end of the measurement, the sphygmomanometer will simultaneously vent and display your blood pressure value and pulse number. Measurement results are automatically saved.



mmHg display



kPa display

4) Take off the cuff

5) The screen will continue to display the measurement results unless you press the switch/measure key to turn off the machine. In the absence of any operation, the machine will automatically enter the sleep mode after 3 minutes.

6) Blood pressure classification instruction table:

Range	High pressure(SYS)	Low pressure(DIA)
Severe hypertension	≥180	≥110
Moderate hypertension	160~ 179	100~ 109
Mild hypertension	140~ 159	90~ 99
Normal	90~ 139	60~ 89

Notice:

Sit quietly for 5 minutes before taking the measurement

\*Do not move during the measurement and remain quiet until the measurement is over; Keep the monitor at the same height as the heart until the measurement is complete.

\*Do not measure repeatedly within a short period of time, otherwise it may cause congestion on the arm and cannot be obtained correct measurements. To restore the artery to the state it was in before blood pressure was measured, use the hand Rest your arm for 2-3 minutes or more before taking the next measurement.

\*If the measurement needs to be interrupted for some reason, just press the switch/measurement key at any time, and the machine will automatically reduce the pressure of the cuff and interrupt the measurement. If the switch/measure button fails, unfasten the cuff and stop measuring.

\*Do not take measurements after eating, drinking, smoking, exercising or being in the rain.

## **Chapter 6: memory function**

### **6.1 Memory viewing**

This sphygmomanometer stores 99 sets of memory, after each measurement, the sphygmomanometer will automatically store the measurement data, memory capacity is full, the old measurement data will be overwritten by the new data. The sphygmomanometer can display the average of the last 3 measurements.

#### **6.1.1 View the average**


Press the memory key in memory mode and the screen will display the last 3 measurements the average value. On the screen you will see the blood pressure and pulse number, the memory group number is the most on the screen displayed below.

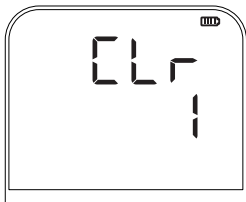
#### **6.1.2 View the results**

Press the memory key again to view the most recent measurement (such as the first set of memories). Then press the memory key to flip the second set of memories, repeat this operation successively to see three, four.....The memory of. Hit the memory button to memorize 100 million.

### **6.2 Erase memory**

#### **6.2.1 Erase all memory**

Delete the recorded data Press the both " " and "ON/OFF "button until the display shown as the following picture, which means the recorded data is cleared



 Note: This operation will delete all the recorded data.

## **Chapter 7: Common questions of blood pressure measurement**

### **1. What is blood pressure?**

Blood pressure is the force exerted by blood against the walls of the arteries. Systolic pressure occurs when the heart contracts. Diastolic pressure occurs when the heart expands. Blood pressure is measured in millimetres of mercury (mmHg). One's natural blood pressure is represented by the fundamental pressure, which is measured first thing in the morning while one is still at rest and before eating.

### **2. What is Hypertension and how is it controlled?**

Hypertension, an abnormally high arterial blood pressure, if left unattended can cause many health problems including stroke and heart attack. Hypertension can be controlled by altering lifestyle, avoiding stress, and with medication under a doctor's supervision. To prevent Hypertension or keep it under control: Do not smoke, exercise regularly, reduce salt and fat intake, have regular physical checkups, maintain proper weight.


### **3. Why measure Blood Pressure at home?**

Blood pressure measured at a clinic or doctor's office may cause apprehension and can produce an elevated reading, 25~30 mmHg higher than that measured at home. Home measurement reduces the effects of outside influences on blood pressure readings, supplements the doctor's readings and provides a more accurate, complete blood pressure history.

#### 4. WHO Blood Pressure Classification?

Standards to assess high blood pressure, without regard to age, have been established by the world Health Organization (WHO), as shown below:

Range	Systolic pressure kPa/mmHg	Diastolic pressure kPa/mmHg	Counter measures
Ortho-arteriotony	12.0~18.5kPa 90~139mmHg	8.0~11.9kPa 60~89mmHg	Self check
Mild hypertension	18.7~21.2kPa 140~159mmHg	12.0~13.2kPa 90~99mmHg	Consult dr.
Medium hypertension	21.3~23.9kPa 160~179mmHg	13.3~14.5kPa 100~109mmHg	Consult dr.
Severe hypertension	≥24.0kPa ≥180mmHg	≥14.7kPa ≥110mmHg	Danger! Go to hospital as soon as possible

 **Note:** There is no definition about hypopiesia, and generally **SYS** (systolic pressure) less than 90mmHg or **DIA** (diastolic pressure) less than 60mmHg is called hypotension.

#### 5. Blood pressure variations?

An individual's blood pressure varies greatly on a daily and seasonal basis. It may vary by 30 to 50 mmHg due to various conditions during the day. In hypertensive individuals variations are even more pronounced. Normally, the blood pressure rises while at work or play and falls to its lowest levels during sleep. So do not be overly concerned by the results of one measurement.

Take measurements at the same time every day using the procedure described in this manual to get to know your normal blood pressure. Regular readings give a more comprehensive blood pressure history.

Be sure to note date and time when recording your blood pressure. Consult doctor to interpret the blood pressure data.

#### 6. When is the best time to measure blood pressure?

After urination, before breakfast in the morning;

Before sleeping at night;  
Before taking medicine;  
Please keep a stable body state and mind every time measuring.  
We suggest taking measurements at a same time every day!

## **Chapter 8: Maintenance, Troubleshooting and Cleaning**

### **8.1 Maintenance**

In order to protect the sphygmomanometer from damage and ensure the accuracy of the measurement, please comply with the following:

- 1) After use or not use, please collect the machine and accessories, and properly place it to prevent it from strong impact or vibration.
- 2) Do not expose the machine and accessories to high temperature, high humidity, dust or direct sunlight.
- 3) Because the cuff contains an airtight air bag, please use carefully, do not fold, pull, twist the air bag.
- 4) If the machine is dirty, please clean and disinfect it in time. Please wipe the socket with a soft dry cloth soaked with about 75% of the medical disinfection ethanol. Do not wipe the socket with a wet cloth. Be careful not to let the liquid soak into the cuff. Cleaning is recommended once a month.
- 5) Do not use diluent, volatile oil and other solutions to wipe the machine, otherwise it may damage the external surface of the machine.

### **8.2 Fault display code**

Fault display code	Cause
“Er 1”	The sensor signal is abnormal
“Er 2”	The result can't be measured
“Er 3”	The measurement result is abnormal
“Er 4”	Leak air
“Er 5”	The line is blocked


“Er 6”	Pressure interference is serious during measurement
“Er 7”	The pressure is over 295
“Er 8”	The calibration data or the storage IC is abnormal
“Er 9”	Abnormal heart rate > 200 times /min
“Er 10”	Abnormal heart rate < 40 times /min
“Er 11”	Test termination
“Er 23”	High pressure SYS<60
“Er 24”	High pressure SYS>230
“Er 25”	Low pressure DIA<40
“Er 26”	Low pressure DIA>130

### 8.3 Product troubleshooting


Abnormal phenomenon	Cause	Fault treatment method
No response when starting	The power adapter is not connected	Connect the power adapter correctly
	Running down of batteries	Replace with new batteries
	Incorrect battery installation	Reset the batteries and align positive and negative polarities correctly
Measured value is too high or too low	Position of cuff belt is not kept consistent with height of heart	Keep correct posture during measurement
	Moving or talking during measurement	Keep silent and do not talk during measurement
	The rolled clothes press on the arm	Take off the clothes that are pressing on your arms, remeasure
The air pump works, but the pressure does not rise	The cuff belt is not connected properly. There is a leak	Please entrust repair
	The cuff belt has been damaged by age	Please buy new products
Shutdown during measurement	Running down of batteries	Replace with new batteries

## 8.4 Cleaning

**Method of Cleaning:** To thoroughly clean the device, immediately after each use, rub the device (including markings) such as the shell, button and LCD screen by hand without undue pressure with 70% isopropyl alcohol wipes for 3 minutes after each measurement.

 **Note:** Ensure that no liquid enters the interior of the monitor, never use abrasive cleaning agents, thinners or benzene for cleaning and never immerse the instrument in water or other cleaning liquids. Wait 10 minutes after cleaning, allowing the monitor to air-dry before taking a temperature measurement.

**Visual Inspection:** After cleaning, there should be no visible blotches and soil stains on the device under natural light, if there are still blotches and/or soil stains, repeat the cleaning steps mentioned above until there is no visible blotches and soil stains.

 **Note:** Please remove the old battery from the device and follow your local recycling guidelines. Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available. If electrical appliances are disposed of in landfills or dumps, hazardous substances can leak into the groundwater and get into the food chain, damaging your health and well-being. To avoid fire and explosion hazard, do not burn or incinerate the battery.

## **Chapter 9: Warranty and after-sales service**

### **9.1 Warranty**

The Company's warranty liability is limited to the repair or replacement of the whole machine or parts that have been verified by the Company as belonging to the warranty period and the scope of the warranty.

The following conditions are not covered by the warranty:

- (1) Misuse, negligence, accidents and failures caused by transportation.
- (2) Open, modify and repair the instrument without authorization of the Company.
- (3) Change or remove the serial number and instrument label

### **9.2 After-sales service**


If you have any problems with use, maintenance, technical parameters and instrument failure, please contact your local distributor or the company.


Tips: Please keep the guarantee card and the buying receipt, which is very useful when you need to amend it.


## **Chapter 10: EMC Declaration**

### **10.1 Electromagnetic compatibility**

● Arm type electronic blood pressure monitor (model: BPM-A7VL) meets the electromagnetic compatibility requirements of standard IEC 60601-1-2:2014+A1:2020.

 Warning: Don't near active HF surgical equipment and the RF shielded room of an ME system for magnetic resonance imaging, where the intensity of EM disturbances is high.

 Warning: Use of this equipment adjacent to or stacked with other equipment should be avoided because it could result in improper operation. If such use is necessary, this equipment and the other equipment should be observed to verify that they are operating normally.

 Warning: Portable RF communications equipment (including peripherals such as antenna cables and external antennas) should be used no closer than 30 cm (12 inches) to any part of the equipment, including cables specified by the manufacturer. Otherwise, degradation of the performance of this equipment could result.

 Warning:

- Arm type electronic blood pressure monitor (model: BPM-A7VL) should not be used in close proximity to or stacked with other devices, and if it must be used in close proximity or stacked, it should be observed to verify that it works properly in the configuration used.
- Using accessories sold by the arm sphygmomanometer manufacturer or accessories other than cables as spare parts for internal components may result in increased radiation or reduced immunity to the arm sphygmomanometer.

## 10.2 Electromagnetic compatibility parameter table

Table 1

Guidance and manufacturer's declaration - electromagnetic emissions	
Emissions test	Compliance
RF emissions CISPR 11	Group 1
RF emissions CISPR 11	Class B
Harmonic emissions IEC 61000-3-2	Class A
Voltage fluctuations/ flicker emissions IEC 61000-3-3	Comply

**Table 2**

Guidance and manufacturer's declaration - electromagnetic Immunity		
Immunity Test	IEC 60601-1-2 Test level	Compliance level
Electrostatic discharge (ESD) IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air
Electrical fast transient/burst IEC 61000-4-4	±2 kV power supply lines ±1 kV signal input/output 100 kHz repetition frequency	±2 kV power supply lines 100 kHz repetition frequency
Surge IEC 61000-4-5	±0.5 kV, ±1 kV differential mode ±0.5 kV, ±1 kV, ±2 kV common mode	±0.5 kV, ±1 kV differential mode
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0 % UT; 0.5 cycle. At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°. 0 % UT; 1 cycle and 70 % UT; 25/30 cycles; Single phase: at 0°. 0 % UT; 250/300 cycle	0 % UT; 0.5 cycle. At 0°, 45°, 90°, 135°, 180°, 225°, 270° and 315°. 0 % UT; 1 cycle and 70 % UT; 25/30 cycles; Single phase: at 0°. 0 % UT; 250/300 cycle
Power frequency magnetic field IEC 61000-4-8	30 A/m 50Hz/60Hz	30 A/m 50Hz/60Hz
Conducted RF IEC61000-4-6	3 V 0.15 MHz – 80 MHz 6 V in ISM and amateur radio bands between 0.15 MHz and 80 MHz 80 % AM at 1 kHz	3 V 0.15 MHz – 80 MHz 6 V in ISM and amateur radio bands between 0.15 MHz and 80 MHz 80 % AM at 2Hz
Radiated RF IEC61000-4-3	10 V/m 80 MHz – 2.7 GHz 80 % AM at 2Hz	10 V/m 80 MHz – 2.7 GHz 80 % AM at 2Hz
NOTE UT is the a.c. mains voltage prior to application of the test level.		

**Table 3**

Guidance and manufacturer's declaration - electromagnetic Immunity						
Radiated RF IEC61000-4-3 (Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communications equipment)	Test Frequency (MHz)	Band (MHz)	Service	Modulation	IEC 60601-1-2 Test Level (V/m)	Compliance level (V/m)
	385	380 – 390	TETRA 400	Pulse Modulation 18 Hz	27	27
	450	430 – 470	GMRS 460, FRS 460	FM ± 5 kHz deviation 1 kHz sine	28	28
	710	704 – 787	LTE Band 13, 17	Pulse modulation 217 Hz	9	9
	745					
	780					
	810	800 – 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation 18 Hz	28	28
	870					
	930					
	1720	1700 – 1990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation 217 Hz	28	28
	1845					
	1970					
	2450	2400 – 2570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation 217 Hz	28	28
5240	5100 – 5800	WLAN 802.11 a/n	Pulse modulation 217 Hz	9	9	
5500						
5785						

**Table 4**

Guidance and manufacturer's declaration - electromagnetic Immunity				
Radiated RF IEC61000-4-39 (Test specifications for ENCLOSURE PORT IMMUNITY to proximity magnetic fields)	Test Frequency	Modulation	IEC 60601-1-2 Test Level (A/m)	Compliance level (A/m)
	30 kHz	CW	8	8
	134,2 kHz	Pulse modulation 2.1 kHz	65	65
	13,56 MHz	Pulse Modulation 50 kHz	7,5	7,5

## 10.3 warranty card

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Please cut along this line  
 Arm blood pressure monitor  
 Warranty Card

Product name	
model	
SN	
User unit/name	
Contact	
TEL	
Contact address	
Date of purchase	
dealer name And contact information	
Maintenance record	

## 10.4 Manufacturer information



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