Automatic Digital Blood Pressure Monitor

MAXCARE

User Manual

Model: KYX8012(D)-USB

Thank for purchasing Automatic Digital Blood Pressure Monitor. It is mainly designed for general home use.
Before using the device, please read this manual carefully to ensure proper and safe operation.
Please take good care of the manual for future reference.

Welcome your advice and support.

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About the Products

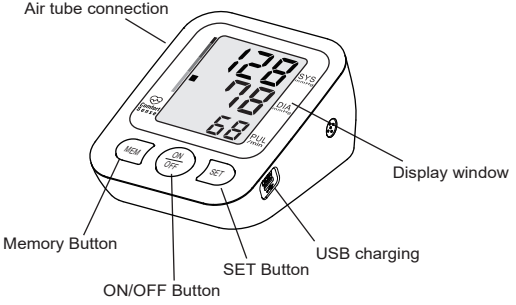
1. Brief Introduction of the Product

This new digital blood pressure monitor is an automatic measuring device to be used on the upper arm. It enable simple, accurate and fast measurement of blood pressure and pulse rate by use of the oscillometric method and people-orientated design.

The advantages of this product:

1. Fully automatic
2. Motion detection
3. Irregular heartbeat detection
4. 60 Memories places
5. WHO indicator

2. The Constitution of the Product

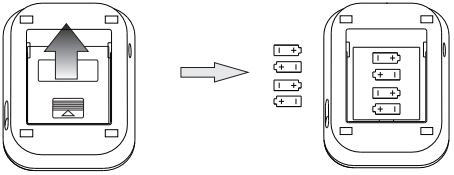


How to Use

1. Batteries Installation

Press the indicator ▼ on the battery cover and slide the cover off in the direction of the arrow

Insert 4 “AA” size batteries, align the polarities of the battery.



Note:

If the low battery indicator appears in the display, the batteries must be replaced.This monitor can also be operated with USB charging

WARNING

Pls purchase AC adapter (USB port) with CE certification.

Do not plug or unplug the power cord into the electrical outlet with wet hands.

2. Unit (mmHg/ kPa) Display Setup and Memory Deletion.

In power off condition, press SET button for 3 seconds. Enter into the setup interface, the content of setup will be displayed by flashing.

Press the SET button again, then it will enter into the switch of setup content “memory deletion ->unit display->speaker function(option).”

Press MEM button to revise setup value.

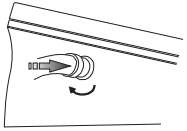
Press ON/OFF button to store the setup content.

Note:

This monitor displays two units: mmHg/ kPa, the user manual takes mmHg as an example to illustrate.The default unit is mmHg.

3．Cuff Connection

Insert the air tube plug into the socket by revolving it.

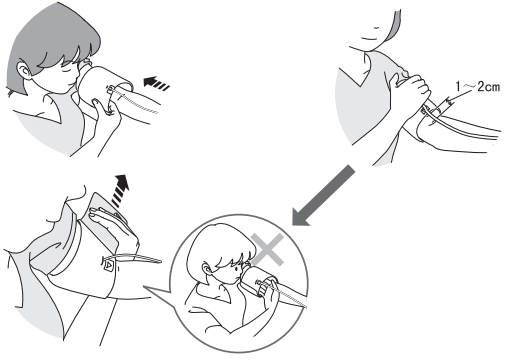


4．Fitting the Arm Cuff

Take off thick clothes, wear thin clothes or unclothe your upper arm for measurement. Lay the cuff on the upper arm. Turn the palm of your hand upward. Put one side of the cuff (with Velcro) through the metal ring to form a cylinder.

Make sure that the bottom of the cuff lies approximately 1 to 2 cm above the elbow and the air tube lies on the inner of the arm. The tube should be aligned with your middle finger after it has been straightened.

Tighten the cuff by affixing the Velcro.
The cuff should be snug on your upper arm.

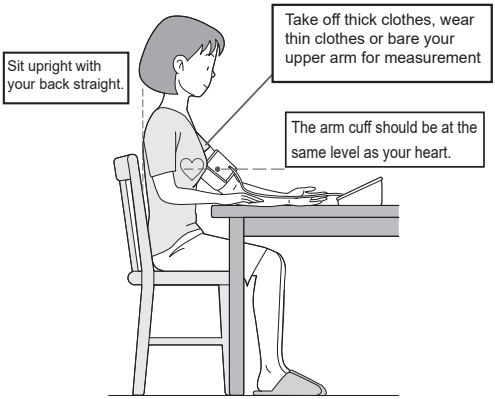


Note:

Both of your arms can be measured, but there are about 10mmHg differences between them. Each measurement should be made with the same arm.

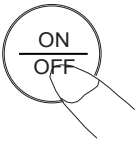
5. Adjust Your Sitting Posture

Sit on a chair with your feet flat on the floor. Put your arm on a table with your hand upward, relax and keep the cuff parallel with your heart.

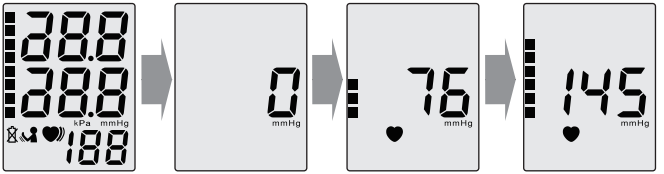


6. Taking a Measurement

(1). Press ON/OFF button to power on, The pump starts to inflate the cuff.



(2). After having reached the anticipated value of inflation, the monitor starts to deflate automatically with a constant speed to detect your blood pressure and pulse.



(3). When the measurement is completed, your blood pressure and pulse rate will be displayed.

Example:
SYS: 128mmHg
DIA: 78mmHg
Pulse: 68/min
The result will be stored automatically. The storage series number is “0”. The previous measurement serial number is “1”, and so forth.

(4). To shut off the monitor, press ON/OFF buttom.

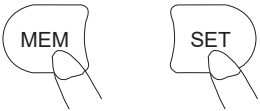
Note:
Once you feel uncomfortable with inflation or the inflation becomes ceaseless, please loosen the cuff and pull out the air tube immediately.
Don't talk, move your arm or body during the measurement.
The monitor will be automatically shut off in 3 minutes without operation. When the monitor can't measure the value correctly, the screen will display "E" icon.

Press ON/OFF button to shut off the monitor and wait for 4 to 5 minutes to start a new test. At the same time, follow the following suggestions during the measurement to avoid "E" icon display again.

1. Keep quiet and correct posture.
2. Fit the cuff correctly.
3. Connect the air tube correctly.
4. Avoid the electromagnetic interference.

7. Reading Memory

Press MEM button to check memory.
Press MEM and SET button to read more stored memories.
Note:
The monitor can memorize 60 data. The monitor will delete the earliest data automatically when the number of data is beyond 60.



8. Manual and Auto Inflation

- In most of cases, choose auto inflation. If your systolic pressure is more than 220mmHg, choose manual inflation.
- In the process of inflation, press MEM button for manual inflation.

The preset value will be 260mmHg.
The preset value will add 20mmHg by each touch.

9. Advice for Self-measurement

- Avoid eating, smoking, drinking alcohol, exercising, bathing as well as forms of exertion activities before measurement.
- Keep quiet and relax for measurement.
- Keep correct posture during the measurement.
- Take measurement on the same arm (normally left) and posture regularly at the same time of the day.
- Do not take the measurement in an extreme temperature.

The digital blood pressure monitor could pre-detect your blood pressure during the process of inflation, and set specific inflation value for your measurement. The measuring time is shortened and every user could enjoy quick and comfortable measurement.

Common Sense of Blood Pressure

1. About Blood Pressure

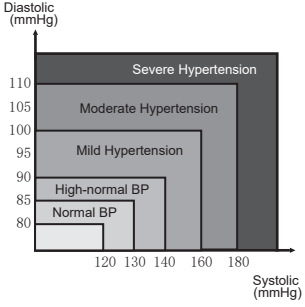
Blood is carried from the heart to all parts of your body through vessels called arteries. Blood pressure is the force of the blood pushing against the walls of the arteries.

Each time the heart beats, it pumps out blood into the arteries.
Blood pressure is at its highest when the heart pumps or ejects blood.
This is called Systolic Blood Pressure.
Blood pressure is at its lowest when the heart rests (in- between beats).
This is called Diastolic Blood Pressure.

The blood pressure is constantly changing. The different cuff fitting and measurement posture can cause the blood pressure to change.

You should take the measurement at the same time with the same arm and posture everyday.

2. Table for Classifying Blood Pressure Values (mmHg): WHO



Blood Pressure Classification	SBP mmHg	DBP mmHg	Color Indicator
Optimal	< 120	< 80	Green
Normal	120-129	80-84	Green
High-normal	130-139	85-89	Green
Grade 1 Hypertension	140-159	90-99	Yellow
Grade 2 Hypertension	160-179	100-109	Orange
Grade 3 Hypertension	>180	>110	Red

3. Life Guide for Hypertension Patients

※ High blood pressure (Hypertension);

A blood pressure of 140/90 or higher is considered high blood pressure. High blood pressure (HBP) is a serious condition that can lead to coronary heart disease, heart failure, stroke, kidney failure, and other health problems. Blood pressure tends to rise with age. Following a healthy lifestyle helps some people delay or prevent this rise in blood pressure. The following measures can be regarded as a life guide for hypertension patients:

1) Consult your doctor about your blood pressure in daily life.

2) Maintain a normal weight.

3) Avoid excessive consumption of common salt. Avoid high cholesterol foods and fatty foods. Eat more fruits, vegetables and high-fiber foods.

4) Avoid smoking, alcohol and reviver.

5) Moderated exercise.

6) relax and reduce stress. Stress can increase the blood pressure suddenly. Relax and reduce stress is a good habit for your health.

Table of Units Conversion(mmHg and kPa)

10mmHg =1.3KPa	150mmHg =20.0KPa
20mmHg =2.7KPa	160mmHg =21.3KPa
30mmHg =4.0KPa	170mmHg =22.7KPa
40mmHg =5.3KPa	180mmHg =24.0KPa
50mmHg =6.7KPa	190mmHg =25.3KPa
60mmHg =8.0KPa	200mmHg =26.7KPa
70mmHg =9.3KPa	210mmHg =28.0KPa
80mmHg =10.7KPa	220mmHg =29.3KPa
90mmHg =12.0KPa	230mmHg =30.7KPa
100mmHg =13.3KPa	240mmHg =32.0KPa
110mmHg =14.7KPa	250mmHg =33.3KPa
120mmHg =16.0KPa	260mmHg =34.7KPa
130mmHg =17.3KPa	270mmHg =36.0KPa
140mmHg =18.7KPa	280mmHg =37.3KPa

Safety Instructions

Warning

1) Hypertension can not be judged by the measured value through this product. The value is used for monitoring blood pressure.
2) Self-diagnosis of measurement results and self-treatment are dangerous. Contact your physician about the measured value.
3) Do not use the device on the injured arm or the arm under medical treatment.
4) Operate the device only as intended. Do not use the device for any other purpose.
4) Do not disassemble or attempt to repair the unit or components.
5) If battery fluid should get in your eyes, immediately rinse with plenty of clean water. Contact a physician immediately.
6) Pls purchase AC adapter with CE certification. Do not plug or unplug the power cord into the electrical outlet with wet hands.
7) WARNING: No modification of this equipment is allowed.

Caution:

1). This device is intended for use in measuring blood pressure and pulse rate in the adult population. Do not use this device on infants or persons who cannot express their intentions.
2) People with severe blood flow problems, or blood disorders, should consult a physician before using the device, as the arm cuff inflation can cause bruising.
3) Do not use this product on patients with severe arrhythmia, infants and perple who can not express their intentions.
4). Dispose of the device, components and optional accessories accordin to applicable local regulations. Unlawful disposal maycause environmental pollution.
5). Wireless communications equipment such as wireless home network devices, mobile phones, cordless telephones and their base stations, walkie-talkies can affect this equipment and should be kept at least a distance d = 3,3 m away from the equipment.
6) Once you feel uncomfortable with inflation or the inflation becomes ceaseless, please loosen the cuff and pull out the air tube immediately.

7) Do not use the monitor if you find it is damaged or notice anything unusual.
8) Do not take measurement more than necessary. It may cause bruising due to blood flow interference.

Abnormal phenomenon and Solutions

ERROR INDICATORS

Symbol	Cause	Solutions
E1	Failure inflation	Fit the cuff correctly
E4	Air tube plug is not correctly connected	Check the connection of the air tube and connect it properly if necessary. Restart measuring.
	The monitor or arm is moved during the measurement	Keep your body still, never move the monitor. Restart measuring.
	The inflation is 30mmHg lower than expected systolic value	Manually inflate to meet the requirement. Restart measuring
E5	The inflation is above 300 mmHg	The device will deflate automaticly

TROUBLE SHOOTING

Abnormal Phenomenon	Potential cause	Solutions
Power on doesn't work	Low battery or wrong polarities of batteries aligned	Replace old batteries with new ones; Align the polarities of the battery correctly.
No inflation	Air tube plug is not correctly connected	Check the connection of the air tube and connect properly if necessary.
Power off when inflation	Low battery	Replace old batteries with new ones
Abnormal value	Cuff is not fitted on the arm correctly	Fit the cuff correctly
	Talk during the measurement	Keep quiet during measurement
	Roll-up sleeve pressed on the arm	Take off the clothes on the arm, restart measuring
	Nervous or excited	Keep quiet, take a deep breath to calm down
	Wrong measurement	Adjust the posture

Packing list

A automatic digital blood pressure monitor arm cuff Storage bag

User manual Batteries(optional) AC adapter(optional)

Maintentance and storage

1) Do not subject the monitor and package to shocks, such us dropping it onto the floor.
2) Do not submerge the device or any of the components in water. Do not subject the monitor to extreme temperatures, dust, humidity, corrosive gas and drect sunlight, do not use it in an oxygen rich environment.
3) Use the cuff carefully. The cuff contains a sensitive gasbag and should not be forcely bended.
4) Clean the monitor with soft and dry cloth. Don't use gasoline, thinners or similar solvents.
5) Carefully remove spots on the cuff with a damp cloth and soapsuds. It should not be washed with detergent powder and other detergents.
6) Use only approved parts and accessories. Not approved parts and accessories may damage the unit.
7) Store the device and the components in a clean, safe location.
8) The device doesn't need calibration within 4 years liftime, If you want to continue to use, calibrate the device once every two years, by the dealer or the local qualified measurement institute for calibration, the calibration method will be supported by manufacture.
9) About batteries: If the monitor is not to be used for a long time, remove the batteries to prevent battery leakage.

Technical Specifications

Model	KYX8012(D)-USB
Display	LCD digital display
Measuring Range	Pressure: 0kPa~38.6kPa (0mmHg~290mmHg) Pulse: 40~180/min
Accuracy	Pressure: within ± 0.4kPa (3mmHg) Pulse: within ± 5% of the reading
Work Mode	Automatic inflation and measurement
Measuring Method	Oscillometric method
Power source	DC 6V (4X “AA”batteries)
Operating Condition	Temperature: 5℃~40℃ Humidity: 15%RH~85%RH Air Pressure: 860hPa~1060hPa
Storage Condition	Temperature: -20℃~70℃ Humidity: 10%RH~95%RH Air Pressure: 860hPa~1060hPa
Weight	300g(without batteries)
Dimension	120mmx93mmx59mm
Cuff	BF applied part
Cuff Circumference	size 23~33cm size 25~35cm (optional) size 22~42cm (optional)
Accessories	Arm cuff

Guidance and Manufacturer's Declaration

Important information regarding Electro Magnetic Compatibility (EMC)

This product needs special precautions regarding EMC and needs to be installed and put into service according to the EMC information provided, and this unit can be affected by portable and mobile RF communications equipment.

a) * Do not use a mobile phone or other devices that emit electromagnetic fields, near the unit. This may result in incorrect operation of the unit.

b) Caution: This unit has been thoroughly tested and inspected to assure proper performance and operation!

c) * Caution: this machine should not be used adjacent to or stacked with other equipment and that if adjacent or stacked use is necessary, this machine should be observed to verify normal operation in the configuration in which it will be used.

<table>
<tr><th colspan="3">Guidance and manufacture's declaration – electromagnetic emission</th></tr>
<tr><td colspan="3">The device is intended for use in the electromagnetic environment specified below. The customer of the user of the device should assure that it is used in such an environment.</td></tr>
<tr><th>Emission test</th><th>Compliance</th><th>Electromagnetic environment – guidance</th></tr>
<tr><td>RF emissions
CISPR 11</td><td>Group 1</td><td>The device use 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.</td></tr>
<tr><td>RF emission
CISPR 11</td><td>Class B</td><td rowspan="3">The device is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes.</td></tr>
<tr><td>Harmonic emissions
IEC 61000-3-2</td><td>Not applicable
(Battery operated device)</td></tr>
<tr><td>Voltage fluctuations/ flicker emissions
IEC 61000-3-3</td><td>Not applicable
(Battery operated device)</td></tr>
</table>

Guidance and manufacture's declaration – electromagnetic immunity

The device is intended for use in the electromagnetic environment specified below. The customer or the user of device should assure 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 floor 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 (Battery operated device)	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	± 1 kV line(s) to line(s) ± 2 kV line(s) to earth	Not applicable (Battery operated device)	Mains power quality should be that of a typical commercial or hospital environment.
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 (Battery operated device)	Mains power quality should be that of a typical commercial or hospital environment. If the user of the device requires continued operation during power mains interruptions, it is recommended that the device be powered from an uninterruptible power supply or a battery.
Power frequency (50Hz/60Hz) magnetic field IEC 61000-4-8	3 A/m	3 A/m	Power frequency magnetic fields should be at levels characteristic of a typical location in a typical commercial or hospital

Guidance and manufacture's declaration – electromagnetic immunity

The device is intended for use in the electromagnetic environment specified below. The customer or the user of the device should assure 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 V_{rms} 150 kHz to 80 MHz	Not applicable (Battery operated device)	Portable and mobile RF communications equipment should be used no closer to any part of the device , including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. **Recommended separation distance** $d = 1{,}2\sqrt{P}$
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2.5 GHz	3 V/m	$d = 1{,}2\sqrt{P}$ 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 transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey,[a] should be less than the compliance level in each frequency range.[b] Interference may occur in the vicinity of equipment marked with the following symbol: 

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

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 electromagnetic site survey should be considered. If the measured field strength in the location in which the device is used exceeds the applicable RF compliance level above, the device should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the device .

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

Recommended separation distances between

portable and mobile RF communications equipment and the device .

The device is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the device can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the device 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	**80 MHz to 800 MHz**	**800 MHz to 2.5 GHz**
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 recommended separation distance d in metres (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.

EXPLANATION OF SAFETY SIGNS AND SYMBOLS

Means type BF applied part.

Symbol for “THE OPERATION GUIDE MUST BE READ”

Symbol for “MANUFACTURER”

Symbol for “COMPLIES WITH MDD 93/42/ECC REQUIREMENTS”

DISPOSAL: Do not dispose this product as unsorted municipal waste. Collection of such waste separately for special treatment is necessary.

IP22: The first number 2:Protected against access to hazardous parts with a finger, and the jointed test finger of 12mm ∅,80mm length, shall have adequate clearance from hazardous parts. And protected against solid foreign objects of 12,5mm ∅ and greater.The second number 2: Protected against vertically falling water drops when enclosure titled up to 150. Vertically falling drops shall have no harmful effects when the enclosure is titled at any angle up to 15”on either side of the vertical.

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