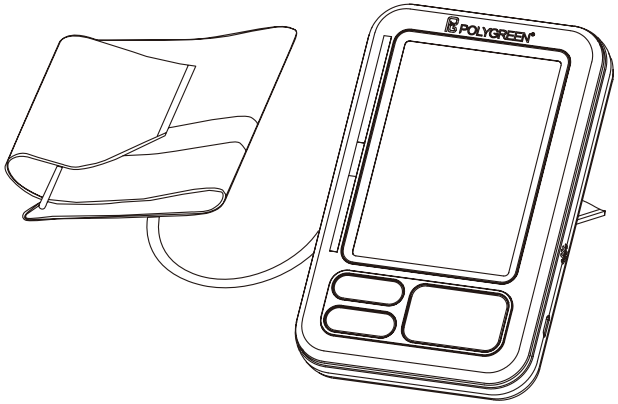
POLYGREEN®

INSTRUCTION MANUAL

Blood Pressure Monitor

Automatic Arm Type



KP-6650

CE 0197

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Table of Contents

Precautions for Use.....1
Product Description and Intended Use.....3
About Blood Pressure.....3
Device and Display Overview.....5
Explanation of Symbols.....5
Battery Installation.....7
Setting the Clock.....7
Attaching the Cuff and Measuring Posture.....7
Taking a Measurement.....8
Memory Function.....8
Care and Maintenance.....9
Clean / Disinfection.....9
Troubleshooting.....10
Product Specifications.....10
Compliance Statement 11
Warranty Information.....12

Precautions for Use

※ **WARNINGS:**

1. Avoid prolonged over-inflation of the bladder to prevent harmful physical injury.
2. If the cuff causes any discomfort during measurement, press the POWER button to turn off the device immediately.
3. Pull off the Velcro strap to detach the cuff if the cuff pressure exceeds 300mmHg without an automatic rapid exhaust.
4. Keep blood pressure monitor away from children to avoid misusing. Children should not use the device without the supervision of an adult.
5. This manual and the product are not substitutes for visiting the doctor. Neither the information contained herein nor this product may be used to diagnose or treat health problems, or to prescribe drugs. If you have or suspect that you have a medical problem, please seek immediate advice from your doctor.
6. Do not conduct any measurements if the temperature is low (below +5 °C) or high (over +40 °C), or if the relative humidity is beyond the range of 15 % to 90 %, as this can lead to inaccurate readings.
7. Wait 30 to 45 minutes, before taking a measurement if you have just had a caffeinated drink or a cigarette.
8. Relax for at least 5 to 10 minutes before taking a measurement.
9. Please wait 3 to 5 minutes between measurements, so that your blood vessels can return to the state they were in prior to measurement. You may have to adapt the waiting time to your personal physiology.
10. It is recommended that you use the same arm for each measurement (preferably the left) and take the measurement at about the same time every day.
11. Sit down comfortably with your elbows placed on the table and both feet on the ground. Please do not interlock your legs during the measurement.
12. Place the unit at the level of the heart. Relax your hand. Your palm should be facing up.
13. Take the measurement at room temperature in a quiet and stress-free environment.
14. The unit should not be moved or shaken during the measurement. Please do not speak during the measurement.
15. Please keep in mind that blood pressure naturally varies depending on the time of day and is affected by many different factors. Blood pressure is usually highest at work and reaches its lowest level during the sleep phase.
16. Blood pressure measurements should be assessed by a doctor or trained healthcare professional who is familiar with your medical history. If you use the unit and regularly record the results, please keep your doctor informed with regard to the ongoing changes in your blood pressure.

17. If you suffer from a cardiovascular disease (such as atherosclerosis), diabetes, a liver or kidney disease, severe hypertension or peripheral circulatory disorders, etc., please consult your doctor before using this unit.
18. The performance of this device can be influenced as severe arrhythmias such as atrial or ventricular premature beats or atrial fibrillation are presented during measurement.
19. The blood pressure measurements conducted with this unit are equivalent to measurements obtained by a trained observer in accordance with the values achieved using the cuff/stethoscope auscultation method and are within the specified EN 1060-4 standard limits.
20. Do not use this appliance on infants, children or persons who cannot express their own intentions.
21. Measuring too frequently may result in circulatory disorders, which can cause unpleasant sensations such as localized bleeding under the skin or temporary numbness in your arm. These symptoms do not usually last long. However, if you have not recovered after some time, please consult your doctor.
22. To avoid accidental strangulation, keep the product away from children and do not place the hose around the neck.
23. Please take into consideration the electromagnetic compatibility of the unit (e.g. disruptions to the power supply, radio frequency interference, etc.) Please only use the unit indoors. To avoid inaccurate results due to electromagnetic interference between electrical and electronic equipment, please do not use the unit near mobile phones or microwave ovens. In the case of devices whose maximum power exceeds 2 W, the minimum distance from your blood pressure monitor should be 3.3 meters.
24. The unit is not waterproof. Never immerse this instrument in any liquids.
25. Do not use the instrument if you think it is damaged or if you notice anything unusual.
26. Any known restrictions on use or contra-indication(s): Consult your doctor prior to using in pregnancy or if diagnosed with arrhythmia or arteriosclerosis.
27. Do not modify this device or cuff without authorization of the manufacturer.
28. FCC § 15.21 Information to user.
    The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

⚠ Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

※ **CAUTIONS:**

1. Read and follow the entire instruction manual before operating blood pressure monitor.
2. Do not press the POWER button on blood pressure monitor if the cuff has not been properly wrapped.
3. The malfunctions of display can be determined by pressing and holding the POWER button under power-off mode.
4. Do not press the measurement icon from application software either if the cuff has not been properly wrapped.
5. For long-term storage, be sure to place the device at a proper environment and make sure to recharge the battery regularly every 3-6 month in order to prevent the damage caused by deep discharge.
6. Do not use the unit when charging battery.
7. The accuracy of the blood pressure monitor is recommended to be verified every two years. Contact authorized agent or laboratory for inspection/calibration service.

Product Description and Intended Use

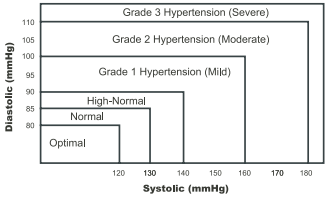
The Blood Pressure Monitor is an electronic device intended to make human blood pressure and pulse rate at upper arm of adult population utilizing non-invasive oscillometric method in household environment. The BPM for measuring human blood pressure and pulse rate with the following characteristics:

* The users: the device can be used by adults.
* To be used in room temperature.
* To be used (Installed) by the user, with the exception of handicapped persons.
* Handicapped persons need assistance by another person to use the device.
* Contact type: skin contact

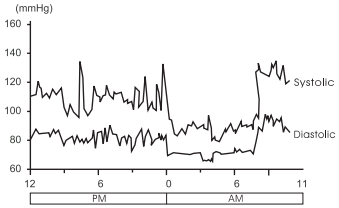
About Blood Pressure

- **What is blood pressure?**
  Blood pressure is produced by the force of blood flowing against artery walls after the heart ejects blood into vessel system.
- **What are systolic and diastolic pressures?**
  Systolic pressure represents the highest pressure during heart contraction and diastolic pressure is the lowest pressure while heart is resting.
- **What is MOMI?**
  MOMI (Measurement on Multiple Intelligence) is a new blood-pressure-measuring technology. MOMI, unlike the general technology which takes measurement during either cuff inflation or deflation, it takes measurements both during inflation and deflation then output a weighted value.
  You can select this function by adjusting the "dU."

- **WHO-ISH classification**
  Your blood pressure measurement can be compared with classification categories defined by 1999 World Health Organization – International Society of Hypertension Guidelines for Management of Hypertension for preliminary evaluation. Please consult your physician for interpretation of blood pressure measurement and follow their directions.



- **What about low blood pressure?**
  In general, lower blood pressure reading is better unless it causes some uncomfortable symptoms such as fainting and/or light headedness.
- **Fluctuation and variation of blood pressure**
  Human blood pressure has a fluctuated characteristic and will vary 24 hours a day. Blood pressure measurement can be affected by the measurement position, posture, physiologic condition as well as factors such as eating, bathing, exercising, smoking, drinking alcohol, stress, mental tension, breathing, conversation, movement, temperature or humidity change, etc.

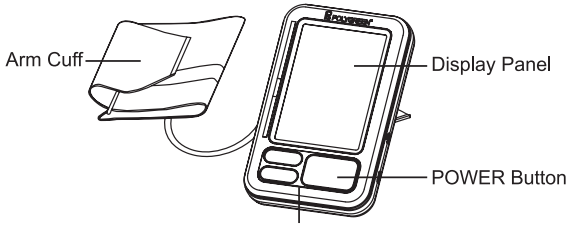


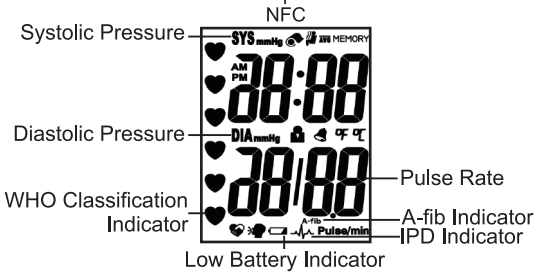
- **How to obtain reliable measurements?**
  In order to obtain reliable measurements, please follow recommendations below:
  1. Keep taking and recording blood pressure measurement at the same time every day for consistency to establish your blood pressure pattern.
  2. Avoid eating, bathing, smoking, exercising, or ingest caffeine and alcohol at least 30 minutes prior to take measurement.
  3. Remove constricting clothing or ornaments from your arm and make sure that the range of cuff circumference is applicable to you.

4. Be seated and relax for at least 5 minutes in a quiet and comfortable place prior to take measurement
5. To make repeated measurements, the rest interval between measurements shall be no less than 30 sec and the rest interval may need to be extended according to individual physiological conditions.

Device and Display Overview

This retail product includes device, cuff, batteries, instruction manual and a storage bag or case. Micro USB cable is optional.





Explanation of Symbols

SYS	Systolic Pressure
DIA	Diastolic Pressure
⎓	Direct Current
	Type BF Applied Part
	Caution & Attention, consult accompanying documents
LOT MMYY	Lot Number composed by month(M) and year(Y) of manufacture.
	Manufacturer
SN	Serial Number

NFC	Near-field communication
EC REP	Authorized Representative in the European Community
	Irregular Pulse Detection
A-fib	Atrial Fibrilation
	Change all batteries
	Keep dry
	Do not dispose of the device and batteries with household waste.
	Follow operating instructions
P	Pumping
P Err	Pumping failure
UU Err	Excessive body movement is detected during measurement.
LL Err	Insufficient pulse detected during measurement..
rrErr	SYS and DIA readings detected are not reasonable.
HI	Cuff pressure is over 300 mmHg.
	Interference may occur in the vicinity of equipment
	Temperature Limit
	Humidity Limitation
	Battery recycling symbol
RoHS conform 2011/65/EU	Restriction of Hazardous Substances
CE 0197	The CE marking with the Registration Number of the Notified Body. This denotes the compliance of European Medical Directive 93/42/EEC.
ALL COMPONENTS REACH COMPLIANT Registration, Evaluation and Authorisation of Chemicals	REACH symbol- Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH) is a European Union regulation.
	Power "ON" / "OFF"

Battery Installation

1. Remove the battery cover and insert three AAA alkaline batteries into the battery compartment with polarities “+” and “-“ are matched with correct polarity indicator. Replace the battery cover.
2. Using only same type of alkaline batteries is recommended to avoid incompatibility.
3. If the low battery indicator appears frequently, replace all batteries at the same time.
4. Built-in clock may need to be reset and reading memories may be erased after battery replacement.

Setting the Clock

1. To have correct date and time for memory storage, the built-in clock needs to be set prior to start first measurement.
2. Under power-off mode, press and hold the MEMORY button until the display shows a blinking year and press the POWER button for adjustment. After current year is selected, set the year by pressing the MEMORY button and switch to next adjustment.
3. Repeat previous steps to adjust and set current month, day, hour, and minute one by one while they are blinking.
4. Following the date and time setting, the clock display function can be set by pressing POWER button for adjusting ON/ OFF in “CL” show status and confirmed by MEMORY button.
5. Following clock function enabled, the alarm function can be set by pressing POWER button for adjusting ON/ OFF in “AL1” show status. Confirmed ON by MEMORY button and adjusted Hour by POWER button and then same procedure set for minute.
6. As last, press MEMORY button again to finish setting.

Attaching the Cuff and Measuring Posture

1. Make sure the circumference of your upper arm is within applicable cuff range.
2. Plug the tube connector into the cuff socket securely.
3. Put bare-skinned left arm through the cuff with tube located at middle of your inner arm and aligned to your middle finger. Measuring with thin clothing is allowed.
4. Fasten the cuff with its bottom edge should be approximately 2~3 cm above your elbow and make sure it is not wrapped too tight.
5. Sit upright in a chair with your feet flat on the floor and relax in a natural position.
6. Steadily rest your forearm on a table and make sure the cuff is at heart level.
7. Hold still and do not talk during measurement.
8. If it is not possible to take measurement with left arm, use right arm instead.

Taking a Measurement

1. Press the USER button to choose user number for memory storage. User selection can also be made by pressing the USER button while readings are displayed after measurement is completed.
2. Press the POWER button to start automatic measurement. The measurement can be interrupted anytime by pressing the POWER button again.
3. Select preferred measuring mode MOMI or Fuzzy Logic by using the Mode Switch.
4. Press the POWER button to start automatic measurement. The measurement can be interrupted anytime by pressing the POWER button again.
5. When the measurement is completed, the systolic pressure, diastolic pressure and pulse rate will be displayed.
6. The display will also indicate which category your blood pressure reading belongs to according to classification defined in 1999 WHO-ISH Guidelines for Management of Hypertension.
7. IPD (Irregular Pulse Detection): The device can detect irregular pulse which is defined as a pulse interval is longer than 5/3 times the average pulse interval during measurement.
   The IPD indicator will appear when more than three irregular pulses were detected during measurement.
8. The device can detect A-fib (Atrial Fibrillation), which is also a type of arrhythmia as IPD, but A-fib detects different scale of the irregularity of pulse time interval. If the A-fib indicator is displayed with measurement readings frequently, please consult a qualified Physician for further directions.
9. The device also provides the PP(Pulse Pressure) function that is equal to systolic minus diastolic. If systolic is higher than diastolic 60 mmHg, LCD will display “PP” and differentiation value. If PP indicator is displayed with measurement readings frequently, please consult a qualified physician for further directions.
10. Press the POWER button to turn off the device or it will turn off automatically after 150 seconds non-operation. Readings will be saved into memory automatically while power-off.

Memory Function

1. Press the USER button to select desired user number for recalling memories.
2. Press the MEMORY button to recall the last reading stored in the memory.
3. Next set of previous readings can be recalled by pressing the MEMORY button repetitively.
4. To delete a reading from the memory: repeat step 1-3 and select a reading which need to be deleted. Press and hold the POWER

button for at least 3 seconds until “dEL” with the memory number appear, and press the POWER button again to delete the selected reading.

5. To erase all readings in memory, please finish above 1~3 steps first. Press and hold the POWER button under memory mode until the display shows "dEL" and press the MEMORY button to show “dEL ALL” on the display. Then press the POWER button, all readings in memory are erased after three beeps are sound.
6. As last, press POWER button to exit memory function.

Care and Maintenance

1. Do not drop the device. It is not shock proof.
2. Do not disassemble or modify the device and cuff.
3. Do not twist the cuff or fully bend the tube.
4. Do not store the device and cuff in environments with direct sunlight, high temperature or moisture, and severe dust.
5. Do not use thinner, benzene, and other harsh cleaners to clean the device (exclude alcohol).
6. Do not wash or immerse the cuff.
7. Remove all batteries if the device is not likely to be used for a long period of time.
8. For long-term storage, be sure to place the device at a proper environment and make sure to recharge the battery regularly every 3-6 month in order to prevent the damage caused by deep discharge.

Clean / Disinfection

Cleaning process:

1. Use a cloth moistened with water or neutral detergent to clean the device, with a solution of 5-10% mild detergent.
2. The cleaning operation with cold water to avoid the chemical residues remaining on the device.
3. If necessary, repeat step 1 to step 2 in order to make sure the device was clean.
4. A final wipe down by a clean wiper is necessary to avoid water stains.

Disinfection process:

1. To disinfect the device when completed the cleaning process.
2. Use 70 to 75% alcohol; Put alcohol into a spray bottle and spray both sides of the cuff with it.

Drying process:

1. After cleaning and disinfection process.
2. Put the device to air-dry in the room temperature.

Troubleshooting

P Err	Pumping failure. Refasten the cuff. The upper edge of cuff should be approximately 1~2 cm away from your palm line.
UU Err	Excessive body movement is detected during measurement. Refasten the cuff and measure again.
LL Err	No sufficient pulses are detected for measurement. Refasten the cuff and measure again.
rrErr	Detected SYS and DIA readings are not reasonable may due to too much interference around. Do not keep the unit close to mobile phones or microwave ovens. Refasten the cuff and measure again.
HI	The pumping pressure is over 300 mmHg. The cuff might be blocked due to improper wrapping. Refasten the cuff and measure again.
	Change all batteries.

Product Specifications

Measuring Range	Pressure: 20~300 mmHg Pulse Rate: 40~200 pulse/min
Accuracy	Pressure: ± 3 mmHg Pulse Rate: ± 5 % of reading
Measuring Method	Oscillometric method
Inflation Method	Electrical rolling pump
Deflation Method	Mechanical release valve
Rapid Exhaust	Electrical solenoid valve
Display	Digital liquid crystal display
Memory	2x100 sets
Operation Condition	5 ~ 40 ˚C (41 ~ 104˚F), 15 ~ 90 % RH
Storage condition	-20 ~ 55 ˚C (-4 ~ 131˚F) , < 93 % RH

IP Classification	IP20 (Protection against solid foreign objects > 12.5mm Ø and no water-proof test)
Power Source	AAA alkaline battery x 3
Battery Life	Around 250 (for New Battery) measurements
Power Saving	Auto-off after 150 sec non-operation
Size	152 x 97 x 27.2 mm
Weight	Approx. 224 g including batteries
Cuff Range	20~35 cm

Compliance Statement

- **This device complies with Part 15 of the FCC Rules.**

Operation is subject to the following two conditions:
1) this device may not cause harmful interference and
2) this device must accept any interference received, including interference that may cause undesired operation.

- **Federal Communications Commission (FCC) Statement 15.105(b)**

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

- **FCC RF Radiation Exposure Statement:**

1) This Transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

2) For portable operation, this device has been tested and meets FCC RF exposure guidelines. When used with an accessory that contains metal may not ensure compliance with FCC RF exposure guidelines.

Warranty Information

Warranty:

The device itself (battery and accessories excluded) comes with a year warranty if it is operated under normal circumstances without evidence of tampering. See exclusions below.

Warranty exclusions:

1. If user does not properly operate the device according to the instructions as described in this manual.
2. If the device shows signs of tampering or attempted modification.
3. Improper handing, such as dropping, liquid or cleaner damage.
4. Natural disasters (such as fire, flood, earthquake and thunder strike).
5. If you do not have a receipt or proof of purchase showing date of purchase.

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