

Caution:

Press and hold the  button for 3 seconds or longer, and the device will enter manual inflation mode; otherwise, the device will power off. If cuff pressure exceeds 299 mmHg/39.9 kPa, the device automatically deflates and displays 'Er03'.

WARNING: Do not keep the arm under systolic pressure for extended periods, otherwise, it may cause acute internal bleeding. Once manual inflation is enabled, continuously monitor the condition of the arm being measured. (Measurement ranges: automatic mode effective up to 210 mmHg systolic; manual mode up to 280 mmHg systolic.)

4.11 Viewing Measurement Records, Average Value, Version Number and User ID

This blood pressure monitor automatically saves the date, time, blood pressure value, and pulse rate during measurement. If the date and time are not set, it will not be able to accurately memorize the measurement date and time.

KSY3150, KSY3150B can save blood pressure measurement values for 2 users in the record (each user can store 100 measurement results).

KH3160, KH3160B can save blood pressure measurement values for 2 users in the record (each user can store 200 measurement results).

KSY3200, KSY3200B can save blood pressure measurement values for 3 users in the record (each user can store 100 measurement results).

KSY3200A can save blood pressure measurement values for 3 users in the record (each user can store 200 measurement results).

Viewing Average Value: From the power-off state/measurement results interface, short-press the Backward button  to display the average value of the corresponding user's last 2 measurement data, and simultaneously the average value icon illuminates.



Viewing Measurement Records: From the power-off state/measurement results/average value interface, short-press the Forward button  to view the most recent measurement. Short-press the up/down navigation buttons to browse measurement records or back to the average value interface.



Deleting Record Values: In the record interface, long-press the Voice Control button  for more than 3 seconds to delete all currently memorized measurement data for the current user. Note that this function can only delete all data for the current user, rather than specific data.

Viewing Software Version Number: From the power-off state, long-press the Backward button  for more than 20 seconds, the software version number can be displayed.

Switching User: In the measurement records interface, toggle the user button  to switch users, the test record corresponding to the User ID will be displayed.

4.12 BPV and TTR Display

Indicator Description:

Blood Pressure Variability (BPV): It refers to the fluctuation of blood pressure within a certain period, including systolic pressure variability and diastolic pressure variability. It reflects the stability of blood pressure, a higher BPV may indicate a potential risk to the cardiovascular system. For example, in daily life, factors such as emotional fluctuations and physical activity can cause changes in blood pressure, and BPV can quantify the extent of this change.

Time in Target Range (TTR): It refers to the proportion of cumulative time blood pressure is within your set target blood pressure range to the total measurement time. This indicator helps assess the long-term effect of your blood pressure control, If TTR is high, it indicates that your blood pressure is within the ideal range for most of the time, and the risk of cardiovascular disease is relatively low.

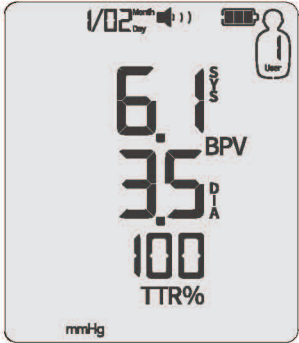
The above parameters shall be interpreted by professionals, are for reference only, and are not for diagnostic use.

Operation Instructions:

Daily BPV and TTR Viewing:

From the power-off state, short-press the BPV/TTR button  to display the corresponding user's daily BPV (including systolic pressure variability and diastolic pressure variability) and TTR (time in target range) based on the most recent measurement date; short-press the Forward or Backward button  to switch dates to view blood pressure variability and TTR for other measurement days.

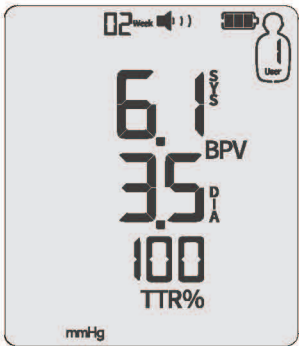
Taking the figure below as an example: On January 2, User 1's blood pressure variability and TTR values were: systolic pressure BPV of 6.1mmHg, diastolic pressure BPV of 3.5mmHg, and TTR of 100%.



Weekly BPV and TTR Viewing:

When displaying daily BPV and TTR, short-press the BPV/TTR button  again to display the corresponding user's weekly BPV (including systolic pressure variability and diastolic pressure variability) and TTR (time in target range) from this week's measurement data; short-press the Forward or Backward button  to switch weeks to view blood pressure variability and TTR for other weeks.

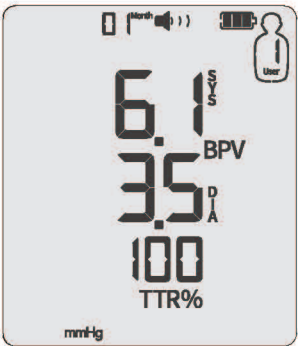
Taking the figure below as an example: In the second week of 2025, User 1's blood pressure variability and TTR values were: systolic pressure BPV of 6.1mmHg, diastolic pressure BPV of 3.5mmHg, and TTR of 100%.



Monthly BPV and TTR Viewing:

Short-press the BPV/TTR button  again to display the corresponding user's monthly BPV (including systolic pressure variability and diastolic pressure variability) and TTR (time in target range) from this month's measurement data; short-press the Forward or Backward button  to switch months.

In January 2025, User 1's blood pressure variability and TTR values were: systolic pressure BPV of 6.1mmHg, diastolic pressure BPV of 3.5mmHg, and TTR of 100%.



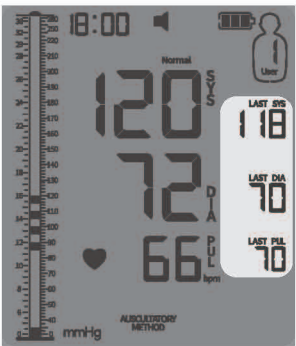
Continue to short-press the BPV/TTR button , cycling between daily BPV + TTR, weekly BPV + TTR, and monthly BPV + TTR viewing modes.

Common Issues:

- 1.Why do some dates not have BPV and TTR?
In daily dimension, if no blood pressure measurement was performed on that day, the system will automatically skip that date, only displaying statistical information corresponding to dates with measurement data.
- 2.How are the cycles for monthly and weekly dimensions calculated?
This product adheres to natural weeks and natural months for measurement data statistics and analysis.

4.13 Last Measurement Value

The measurement results interface will display the current user's last measurement result (systolic pressure, diastolic pressure). If there is no previous measurement, two short lines "--" will be displayed in the value area.



4.14 Abnormal Situation Prompts

When any of the following abnormal prompts appear on the measurement results interface: ["AFib", "Cuff malfunction", "Motion/Re-measure", "Tachycardia", "IHB", "High", "Wearing error"], the corresponding prompt text will flash on the measurement results interface.

When the "Tachycardia" prompt appears, the pulse value on the measurement result screen will also flash synchronously.

When the systolic blood pressure (SYS) ≥ 130 mmHg and/or the diastolic blood pressure (DIA) ≥ 80 mmHg, in addition to the "High" prompt flashing on the measurement result screen, the corresponding elevated blood pressure values will also flash synchronously on the measurement result screen.

4.15 Common Issues

When a system error occurs or affects measurement results, an error report or prompt message will be given. Please check the error and adjust promptly.

Error Message	Cause of Error	Solution
Er01	Cuff is worn too loosely; Cuff connector is loose; Cuff is leaking air;	Please wrap the cuff correctly; Please check if the cuff connector is securely plugged in; If the above methods are ineffective, please contact after-sales service;
Er02	During measurement, arm or body movement causes improper inflation or prevents measurement	During measurement, please remain quiet and ensure that the arm and body are still. If there is no accidental movement, and the same error recurs, please use manual inflation for another measurement.
Er03	Pressure exceeds 299mmHg (39.9kPa) during measurement.	When using the manual inflation function, the maximum cuff pressure shall not be too close to 299mmHg (39.9kPa).
Er04	Unable to detect pulse due to movement of the arm or body during measurement.	Please remain still with your arm and body before measuring again.
	Before applying the cuff, overly thick clothing was not removed, or rolled-up sleeves compressed the arm.	Please remove overly thick clothing, do not roll up your sleeves, and re-apply the cuff for measurement.
Er05	Measurement results exceed the nominal measurement range.	Rated range for diastolic pressure: 20mmHg - 220mmHg (2.7kPa - 29.4kPa); Rated range for systolic pressure: 40mmHg - 280mmHg (5.3kPa - 37.4kPa).
Other errors	Errors not listed in this table occurred	Please contact customer service

Error Message Examples



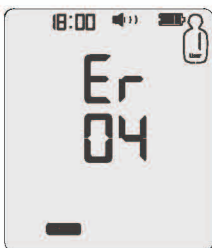
Er01



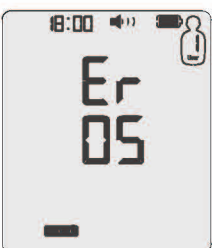
Er02



Er03



Er04



Er05

5. Operating Principle

The Blood Pressure Monitor utilizes an intelligent inflation algorithm and inflate the cuff using an air pump, then applies pressure to the arterial blood vessel with the inflated cuff. As the cuff pressure rises, the arterial vessel undergoes a process of fully open, semi-occluded, and fully occluded states. After determining the complete occlusion of the arterial vessel through pulse pressure fluctuations, cuff inflation stops, and the cuff pressure slowly decreases. When the cuff pressure drops to the systolic pressure, Korotkoff sounds are generated. When the cuff pressure drops to the diastolic pressure, Korotkoff sounds disappear. The Blood Pressure Monitor collects Korotkoff sound signals via an acoustic sensor in the cuff and measures air pressure values via a pressure sensor, applying a fixed algorithm based on neural network, to intelligently determine the user's blood pressure value. This blood pressure measurement method is called the electronic Korotkoff method, also known as the electronic auscultatory method. This new generation of Blood Pressure Monitors, employing revolutionary measurement technology, can accurately measure human blood pressure, elevating the precision of blood pressure measurement to a new height and setting a new benchmark for accurate blood pressure measurement. This electronic Korotkoff blood pressure measurement method can substitute the traditional measurement method of mercury sphygmomanometer.

6. EMC Technical Data

Electromagnetic Compatibility (This product complies with EMC standards)

It will not emit electromagnetic interference noise beyond the permissible limits to other nearby electronic devices, and the device can function normally in an electromagnetic environment where other electronic devices emit noise or similar interference.

1. This section provides specific guidance on electromagnetic compatibility. The Electronic Blood Pressure Monitor shall be installed and used in accordance with the electromagnetic compati-

bility information in this section.

2. Portable and mobile RF communication equipment may affect the use of the Electronic Blood Pressure Monitor. During normal use of the Monitor, it is recommended to keep it away from portable and mobile RF communication equipment or ensure they are turned off.
3. Warning: Using accessories from other manufacturers, other than those provided by our company, may lead to increased emissions from the Electronic Blood Pressure Monitor or reduced immunity to interference.
4. The Electronic Blood Pressure Monitor shall not be used in close proximity to or stacked with other equipment that operates at the same or similar frequencies. If proximity or stacking is necessary, observation and verification shall ensure that it operates normally in the configured setup.
5. The basic performance is as follows: The laboratory repeatability of blood pressure measurement by the Blood Pressure Monitor is ≤ 3 mmHg (0.4 kPa). Within the temperature range of 5°C to 40C and relative humidity range of 15% to 90% (non-condensing), at any point within the nominal measurement range, the maximum measurement error of cuff pressure shall not exceed ± 2 mmHg (± 0.27 kPa) or $\pm 2\%$ of the reading, whichever is greater.
6. When the Korotkoff Sound Medical Electronic Blood Pressure Monitor is in normal use, it may generate electromagnetic interference to other diagnostic or therapeutic equipment. When in use, please maintain an appropriate distance from other equipment and carefully observe the correctness of data during the use of that equipment.
7. To ensure the normal use of Korotkoff Sound Medical Electronic Blood Pressure Monitor functions normally and that its emissions are not increased, and its immunity is not decreased, please use the cuff and related accessories provided by our company.

Table 1: Electromagnetic Mission

Guidance and manufacturer´s declaration – electromagnetic emissions		
The Blood Pressure Monitor is intended for use in the electromagnetic environment specified below. The customer or the user of Blood Pressure Monitor should assure that it is used in such an environment.		
Emissions test	Compliance	Electromagnetic environment - guidance
RF emissions CISPR 11	Group 1	The Blood Pressure Monitor uses 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.
RF emissions CISPR 11	Class B	The Blood Pressure Monitor 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.
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/- Voltage Fluctuations and Flicker emissions IEC 61000-3-3	Pass	

Table 2: Electro magnetic Immunity 1

Guidance and manufacturer´s declaration – electromagnetic immunity			
The Blood Pressure Monitor is intended for use in the electromagnetic environment specified below. The customer or the user of the Blood Pressure Monitor 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	Contact: ± 8 kV Air: ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV	Contact: ± 8 kV Air: ± 2 kV, ± 4 kV, ± 8 kV, ± 15 kV	Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30 %. If ESD interfere with the operation of equipment, counter measurements such as wrist strap, grounding shall be considered.
Electrical fast transient/burst IEC 61000-4-4	± 2 kV for power supply lines ± 1 kV for input/output lines	± 2 kV for power supply lines ± 1 kV for input/output lines	Mains power quality should be that of a typical commercial or hospital environment.
Surge IEC 61000-4-5	Differential mode: ± 0.5 kV, ± 1 kV Common mode: ± 0.5 kV, ± 1 kV, ± 2 kV	Differential mode: ± 0.5 kV, ± 1 kV Common mode: ± 0.5 kV, ± 1 kV, ± 2 kV	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	0 % UT (100 % dip in UT) for 0,5 cycle 0 % UT (100 % dip in UT) for 1 cycles 70 % UT (30 % dip in UT) for 25/30cycles 0 % UT (100 % dip in UT) for 250/300 cycles	0 % UT (100 % dip in UT) for 0,5 cycle 0 % UT (100 % dip in UT) for 1 cycles 70 % UT (30 % dip in UT) for 25/30cycles 0 % UT (100 % dip in UT) for 250/300 cycles	Mains power quality should be that of a typical commercial or hospital environment. If the user of the Blood Pressure Monitor requires continued operation during power mains interruptions, it is recommended that the Blood Pressure Monitor be powered from an uninterruptible power supply or a battery.
Power frequency (50/60 Hz) magnetic field IEC 61000-4-8	30A/m	30A/m	Power Frequency Magnetic Field Immunity should be at levels characteristic of a typical location in a typical commercial or hospital environment.

Table 3: Electromagnetic Immunity 2

Guidance and manufacturer's declaration – electromagnetic immunity			
The Blood Pressure Monitor is intended for use in the environment specified below. The customer or the user of the Blood Pressure Monitor 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 Vrms 150 kHz to 80 MHz (6V in ISM bands between 0.15MHz and 80 MHz)	3 Vrms 150 kHz to 80 MHz (6V in ISM bands between 0.15MHz and 80 MHz)	Portable and mobile RF communications equipment should be used no closer to any part of the Blood Pressure Monitor, including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. $d = 1.2\sqrt{P}$ $d = 1.2\sqrt{P}$ 80 MHz to 800 MHz $d = 2.3\sqrt{P}$ 800 MHz to 2,7 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, should be less than the compliance level in each frequency range. Interference may occur in the vicinity of equipment marked with the following symbol: 
Radiated RF IEC 61000-4-3	3 V/m 80 MHz to 2,7 GHz	3V/m 80 MHz to 2,7 GHz	
Proximity fields from RF wireless communications equipment IEC 61000-4-3	Table 9 of IEC 60601-1-2:2020	Table 9 of IEC 60601-1-2:2020	
Proximity magnetic fields IEC 61000-4-39	Table 11 of IEC 60601-1-2:2020	Table 11 of IEC 60601-1-2:2020	

FCC Caution

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.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: 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.

The device has been evaluated to meet general RF exposure requirement. The device can be used in portable exposure condition without restriction.

7. Specifications and Warranty

7.1 Specifications

Name	Korotkoff Sound Blood Pressure Monitor
Model	KSY3150/KSY3150B/KH3160/KH3160B/KSY3200/KSY3200B/KSY3200A
Power Supply Mode	Lithium Battery (DC 3.7V)
Display Mode	LCD screen display
Blood Pressure Measurement	Measurement and display range: SYS: 40 mmHg (5.3 kPa) ~ 280 mmHg (37.4 kPa) DIA: 20 mmHg (2.7 kPa) ~ 220 mmHg (29.4 kPa)
	Resolution: 1 mmHg (0.1 kPa)
	Accuracy limit under environmental conditions: ± 2 mmHg(± 0.27 kPa)or $\pm 2\%$ of the reading, whichever is greater
Pulse Measurement	Measurement range: 40 ~ 240 beats/min
	Resolution: 1 beat/min
	Measurement accuracy: $\pm 5\%$
Cuff pressure display range	0 - 299 mmHg
Memory	Stores up to 200/300 readings per user, see section 7.2 for specific parameters.
Data Transmission	Bluetooth/ No Transmission, see section 7.2 for specific parameters.
Operating Mode	Continuous operation
Power Source	Internal battery (1600mAh 3.7V) or optional AC adapter(INPUT AC 100 - 240 V 50 - 60 Hz 0.3 A)
Battery life	Approx. 300 measurements (using Lithium battery) approximately 300 charge-discharge cycles. (The actual number of cycles may vary depending on the charge-discharge environment.)
Service Life	Main Unit: 5 years from the date of manufacture (based on 6 uses per day). Cuff: 10,000 uses (recommended replacement every 2 years as a consumable).Optional AC adapter: 5 years
Operating Environment	Temperature: 5°C ~ 40°C; Relative Humidity: 15% ~ 90%, non-condensing; Atmospheric Pressure: 700 hPa ~ 1060 hPa.
Transport and Storage Conditions	Temperature: -20°C ~ 55°C; Relative Humidity: $\leq 93\%$, non-condensing; Atmospheric Pressure: 500 hPa ~ 1060 hPa.
Main Unit Weight	Approximately 455g (KSY3200, KSY3200B, KSY3200A) Approximately 404g (KH3160, KH3160B) Approximately 400g (KSY3150, KSY3150B)
Main Unit Dimensions	Approximately Length: 157mm * Width: 110mm * Height: 76mm(KSY3200, KSY3200B, KSY3200A) Approximately Length: 143mm * Width: 110mm * Height: 74mm(KSY3150, KSY3150B, KH3160, KH3160B)
Cuff Size Compatibility	Suitable for arm circumference: 22cm - 42cm, 22-36cm (optional)
Electric Shock Protection	Class II device (internal power source when not using an adapter); BF type applied part
Electromagnetic Compatibility	Group I, Class B device
IP Classification	IP20
Embedded Software Release Version	1

7.2 The differences among all models in this manual are as follows

Model	Communication Mode	Data Storage	Appearance
KSY3150	None	2×100	
KSY3150B	Bluetooth	2×100	
KH3160	None	2×200	
KH3160B	Bluetooth	2×200	
KSY3200	None	3×100	
KSY3200B	Bluetooth	3×100	
KSY3200A	Bluetooth	3×200	

8. Cleaning, Maintenance and Warranty

8.1 Cleaning and Maintenance

The Blood Pressure Monitor is a non-sterile medical device and must be routinely cleaned by the operator before use.

Please keep the Blood Pressure Monitor clean. If the outer surface of the main unit or cuff is contaminated, use a clean, soft cloth dampened with approximately 75% medical-grade ethanol, wring it out thoroughly, then gently wipe the surface twice. Allow it to air-dry for 3 minutes. It is recommended to clean the device once a month.

Caution: Do not allow any liquid to penetrate the main unit or cuff, as this may cause damage.

If the device is used by multiple patients, ensure that it is cleaned and disinfected before each subsequent use.

 Caution:

When a user is using, the device cannot be maintained or serviced;

- Do not use high-pressure sterilization equipment or gas sterilization equipment; otherwise, the device may be damaged;
- Do not expose the device and accessories to high temperatures, high humidity, excessive dust, or direct sunlight;
- This device is not waterproof. Do not let liquid penetrate the main unit or cuff;
- Do not wipe with volatile oils, thinners, gasoline, etc.;
- Do not disassemble or repair this unit without authorization;
- Do not replace internal parts without authorization;
- If the device is not used for an extended period (more than 6 months), please charge the battery, otherwise it may cause over-discharge of the battery, damaging the device.

8.1 Warranty

1. From the date of purchase, the main unit enjoys a three-year warranty with a proof of purchase, excluding consumables.
2. From the date of purchase, the cuff enjoys a three-month free warranty with a proof of purchase.
3. For malfunctions and damage caused by non-product quality issues or user's personal reasons, free warranty service will not be provided.

For example:

Damage caused by unauthorized disassembly, assembly, or modification of the product;

Malfunctions caused by accidental drops during use or handling;

Malfunctions caused by lack of reasonable maintenance;

Damage to the device caused by not operating it correctly according to the instruction manual;

Malfunctions caused by repairs performed by unauthorized repair shops, etc.

4.Repair services outside the warranty scope will be subject to charges in accordance with relevant regulations.

5. Before requesting repair service, please call the customer service hotline for consultation.

6. When performing warranty service, if necessary, product circuit diagrams and information on repairable components can be provided to qualified technicians recognized by us.

7. Damaged product components shall be repaired by trained maintenance personnel.

Warranty Card

Product Model:	Name:
Purchase Date:	Address:
Dealer Name:	Postal Code:
Address:	Contact Number:

Dealer's Stamp

8.3 Calibration

- This Blood Pressure Monitor has been inspected and calibrated at the factory
- It is implemented by the manufacturer, or manufacturer-authorized repair centers (once a year);
- This unit has a pressure detection mode. If needed, please call the after-sales service hotline for consultation.



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