# UPPER ARM AUTOMATIC DIGITAL BLOOD PRESSURE MONITOR

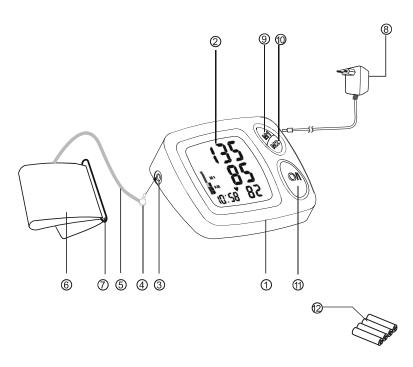


# **INSTRUCTION MANUAL**

Model: LD-588



# **PARTS AND COMPONENTS**



- 1.Main Body
- 2.Display
- 3.Air Connector
- 4.Tube Plug
- 5.Air Hose
- 6.Standard 22-32cm Cuff (optional large Cuff 32cm to 43.2cm)
- 7 D-ring
- 8.AC Power Adaper (Optional PN: UK: 00633, EU: 00634: US:00635)
- 9.Button 'M1'
- 10.Button 'M2'
- 11.Button 'O/I'
- 12.Batteries (Optional)

# SYMBOLS

Symbols	Meaning
	Manufacturer
EC REP	Authorized Representative in the European community
X	Symbol for the marking of electrical and electronics devices according to Directive 2012/19/EU. The device, accessories and the packaging have to be disposed of waste correctly at the end of the usage. Please follow Local Ordinances or Regulations for disposal.
<b>(€</b> 0123	CE marking in conformity with EC directive 93/42/EEC
<b>**</b>	Keep dry
	Attention, consult accompanying documents
<b>†</b>	Type BF Applied Part
O/I	Stand by

# TABLE OF CONTENT

1. GENERAL	4
- PRINCIPLE OF OPERATION	4
- NEW TECHNOLOGIES USED	4
2. IMPORTANT SAFETY INSTRUCTIONS	5
3. PREPARATION	8
- BATTERY INSTALLATION	8
- USE AC POWER ADAPTER	8
- SETTING THE DATE AND TIME	9
4. USE THE DEVICE	
- CORRECT POSTURE ·····	
- POSITION THE CUFF	
- CARRY OUT A MEASUREMENT	
- USER M1/M2 MEMORY	
- WHO CLASSIFICATION INDICATION	
- IRREGULAR HEARTBEAT DETECTOR	14
5. ERROR AND LOW BATTERY INFORMATION	
6. TROUBLESHOOTING	
7. CARE, STORAGE, REPAIR AND RECYCLING	
8. SPECIFICATIONS	18
9. MANUFACTURER'S DECLARATION	
10.WARRANTY	20
11 PERIODIC SAFETY CHECKS	21

### **GENERAL**

This instruction manual is intended to assist the user for safe and efficient operation of the automatic digital blood pressure monitor (hereinafter: device) model LD-588. The device must be used in accordance with the procedures described in the manual. It is important to read and understand the entire manual, especially the section < IMPORTANT SAFETY INSTRUCTIONS >.

#### **RECOMMEND USE:**

This device is intended for the non-invasive measurement of systolic and diastolic arterial blood pressure and pulse rate in adult patients (age 15 and above).

#### CAUTION:

- 1. Do not use this device on infants or persons who cannot express their intentions.
- 2. The device is not suitable for use on children and must only be used on adult patients (age 15 years and above).
- 3. The patient is an intended operator. But persons who suffer from arrhythmia, diabetes, cardiovascular problems or who have had a stroke should consult their doctor before using the device.

#### PRINCIPLE OF OPERATION

This device adopts the oscillometric technology with Fuzzy Algorithm to measure the arterial blood pressure and pulse rate. The cuff is wrapped around the arm and automatically inflated by the air pump. The sensor of the device catches weak fluctuation of the pressure in the cuff produced by extension and contraction of the artery of the arm in response to each heartbeat. The amplitude of the pressure waves is measured, converted in millimeters of the mercury column, and is displayed by digital value.

**ATTENTION:** This device can not provide reasonable accuracy if used or stored in the temperature, humidity or altitude beyond the range stated in the section <SPECIFICATIONS> of this manual.

#### **NEW TECHNOLOGIES USED**

Fuzzy Algorithm is the processing algorithm, taking into account the specialty of individual heartbeats, which provides higher accuracy of measurement.

### **IMPORTANT SAFETY INSTRUCTIONS**

It is necessary to know that arterial blood pressure is subjected to sharp fluctuations. The level of the arterial blood pressure depends on many factors. Generally arterial blood pressure is lower in summer and higher in winter. Arterial blood pressure changes with atmospheric pressure and is affected considerably by many factors, e.g. physical loads, emotional excitability, stress, meals, etc. Medicines, drinking, smoking affect greatly the level of an individual's blood pressure. Blood pressure does vary with age and individuals, and it is recommended to write down the readings from blood pressure records daily, then you can check with your doctor to find out what is a "normal blood pressure measurement" for you.

Please read the instruction manual carefully before using this device, especially < Important safety instructions>, it can help you use the device correctly and safely! Please keep the instruction manual for future use. For specific information about your own blood pressure, consult your physician.

#### Warnings

- Consult your physician if you suffer from illnesses prior to using the device.
- The device is not suitable for persons who have electrical implants.
- If you had a mastectomy (breast amputation) do not use this blood pressure monitor on the arm on the side of the mastectomy.
- Pregnant women should only measure their own blood pressure in consultation with their doctor, since the readings may be changed with pregnancy.
- Do not service or maintain the cuff while in use with patient.
- Do not use this blood pressure monitor on any arm where intravascular access or therapy (such as an intravenous drip or a blood transfusion), or an arteriovenous shunt (A-V shunt) is present. The temporary interference to blood flow by the blood pressure measurement could result in injury.
- Do not use the device with other medical electrical (ME) equipment simultaneously.
- Do not use the device in the area the HF surgical equipment, MRI, or CT scanner exists, or in the oxygen rich environment.
- Do not use a mobile phone or other devices that emit electromagnetic fields, near the device. This may result in incorrect operation of the device.
- Never use any accessories or parts from other manufacturers. Using such accessories or parts could cause a hazardous situation for the user or damage to the device.
- Do not modify this equipment without authorization of the manufacturer.
- The batteries used in this device may present a fire or chemical burn hazard if mistreated. Do not disassemble, heat or incinerate.
- Keep equipment away from fire and heat sources to prevent fire or explosion
- Please keep the unit out of reach of infants, children or pets, since inhalation or swallowing of small parts can be dangerous or even fatal.

- Please pay attention that the continuous CUFF pressure due to connection tubing kinking will cause a harmful injury.
- Do not use an extension cord with this device.
- The air tube or the AC adapter cable may cause accidental strangulation in infants.
- Do not put the air tube around your neck danger of suffocation!
- A device should never be left unattended when plugged in.
- Do not reach for a corded device that has fallen into water. Unplug immediately.
- It is quite normal that two measurements taken in quick succession may produce significantly different results, because too frequent and consecutive measurements could cause disturbances in blood circulation and injuries.

#### Cautions

- Use this device under the right environmental conditions as indicated in this user manual. If not, this could affect the performance, lifetime of the device and measurement results.
- Only use this device for its intended purpose as described in this user manual.
- Do not confuse self-monitoring with self-diagnosis. This device allows you to monitor your blood pressure. Do not begin or end medical treatment based on the measurement results. Always consult your physician for treatment advice.
- Do not take any therapeutic measures on the basis of a self-measurement. Never change prescribed medication without consulting your physician. Consult your physician if you have any questions about your blood pressure.
- If you are taking medication, consult your physician to determine the most appropriate time to measure your blood pressure.
- Consult the physician if measurement errors occur in children or persons with arrhythmia.
- The pulse display is not suitable for monitoring the frequency of cardiac pacemakers.
- Common arrhythmias (such as atrial or ventricular premature beats or atrial fibrillation) and peripheral artery disease / arteriosclerosis can affect the accuracy of this blood pressure monitor. Please consult your physician how to best use this blood pressure monitor if you suffer from any of these conditions. Blood pressure measurement is not suitable in cases of serious arteriosclerosis (hardening of the arteries).
- The effectiveness of this blood pressure monitor has not been established in pregnant women.
- Always check the device and cuff before you use it. Do not use the device or cuff if one of them is damaged, because this may cause injury.
- This device is not intended for use on extremities other than the arm or for functions other than obtaining a blood pressure measurement.
- Do not attach the cuff on the same arm on which other monitoring medical electrical equipment is attached simultaneously, because this could cause temporary loss of function of those simultaneously-used monitoring medical electrical equipment.

- Never attach the cuff on injured skin, an injured arm or an arm under medical treatment as this can cause further injury.
- Do not forcibly crease the arm cuff or the air tube excessively.
- Do not press the air tube while taking a measurement.
- Do not use the device in case of existing polyester or nylon material allergies.
- This device is not suitable for continuous monitoring during medical emergencies or operations.
- This device cannot be used with HF (High Frequency) surgical equipment at the same time.
- This device is not washable. Never immerse the device in water and do not rinse it under the tap.
- The device should be kept dry in a moisture free environment,
- The equipment is not AP/APG equipment and is not suitable for use in the presence of a flammable anesthetic mixture with air, with oxygen or nitrous.
- To avoid measurement errors, do not use the device near strong electromagnetic fields, radiated interference signal or electrical fast transient/burst signal. For example magnets, radio transmitters, microwave ovens.
- If this device was stored in low temperature, leave it in room temperature for at least 1 hour.
- Repeated measurements with an interval of 3 minutes are recommended, so you can calculate the average to get a more accurate measurement. An interval of 3 minutes can also ensure that the operation of the device does not result in prolonged impairment of the circulation of the blood.
- Atherosclerosis patients may require longer interval (10-15minutes) as elasticity of patient's vessels decreases significantly with the disease.10-15minutes interval is also applicable for patients suffering from diabetes for a long period of time.
- Dispose of the device, components and optional accessories according to applicable local regulations. Unlawful disposal may cause environmental pollution.
- Connecting electrical equipment to a mains supply via the optional power AC adapter effectively leads to creating a ME system, and can result in a reduced level of safety.

#### **CLASSIFICATION**

- ME EQUIPMENT not intended for use in an oxygen rich environment or in the presence of flammable mixers.
- Internally powered equipment (without adaptor), Class II equipment (with adapter).
- Type BF applied part, recognize the cuff as applied part.

# **BATTERY INSTALLATION**

- 1. Open the battery cover and install four 'AA' type batteries into the battery compartment as indicated. Make sure that the polarity is correct.
- 2. Close the battery compartment cover.
- Replace the batteries when the replacement indication "

  "appears in the display or the device does not start after "

  O/I " button is pressed.
- Use R6, LR6 or AA alkaline batteries, do not use rechargeable batteries.
- Only same type batteries are allowed to be used together.
- · Replace all batteries simultaneously.
- If the device is to be unused for a long time, please take out the batteries.
- Don't leave the worn batteries in the device.

### **USE AC POWER ADAPTER**

As an alternative to batteries you can use an optional AC power adapter with the device, see parts and components section.

The AC adapter is specified as a part of the blood pressure monitor.

- Insert the AC adapter cord into the jack on the right side of the monitor
- Insert the AC adapter plug into the outlet.
- To remove the AC adapter, disconnect the adapter plug from the AC outlet first and then disconnect the cord from the monitor's jack.

#### Caution

- $\cdot$  When using the optional AC adapter, the adapter provides an means of patient and operator safety and must comply with the requirements of the IEC60601-1 standard.
- To avoid possible damage to the BP monitor use only the AC adapter provided by authorised dealers. Use of other AC adapters may damage the device and/or not provide adequate electrical safety for the patient or operator.
- $\cdot$  The AC adapter should be inserted into an electrical outlet socket near the operator. Do no use the AC adapter in an multi-outlet plug adapter.
- · Plug the AC adapter into an appropriate AC voltage rated outlet only.
- · If the AC adapter is not going to be used for an extended period of time, remove it from the electrical socket, do not leave on for prolonged or extended periods of time. Allow the AC adapter to cool down after use before removing from the electrical socket.
- $\cdot$  Do not position the blood pressure monitor to make it difficult to insert of remove the AC adapter cable.

Note: The monitor is designed not to draw power from the batteries when the AC adapter in use.

Optional AC adapter technical feature:

Model:YS5M-0600600 Input:100-240V 50/60Hz

Output voltage: 6V±5%, current: 600 mA

Output plug polarity: <-> inner





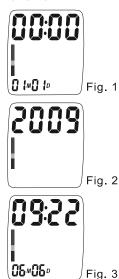
# **SETTING THE DATE AND TIME**

This function provides accurate measuring time for each measurement. To get accurate date and time, the user should preset the date and time correctly before the first use of this device.

The operation procedure for presetting Date/Time is as follows:

- 1. When the device is connected to power on at first time, the display will show as Fig. 1;
- 2.Press and hold button 'M1', then press button O/I, and the year number flashes as Fig. 2;
- 3. Press button 'M1' or 'M2' to subtract or add the number, and press button 'O/I' for confirmation;
- 4. When the year setup is finished, the month number will flash automatically. Please follow the same instruction as steps 2 and 3 to set month, date and time;
- 5.Press button 'O/l' to finish setup as Fig. 3. If you want to change the date and time, please repeat procedure  $2 \times 3 \times 4$ .

Note when setting date/time the unit will return to standby mode if a button is not pressed within 1 minute - date and time will not be set correctly in this case.



# **USE THE DEVICE**

#### Caution:

- Please keep quiet for 5-10 minutes and avoid eating, drinking, alcohol, smoking, exercising and bathing before taking a measurement. All these factors will influence the measurement result.
- · Remove any garment that fits closely to your upper arm.
- Always measure on the same arm (normally left).
- Measurements should be taken regularly at the same time of each day, as the blood pressure varies even during the day.
- Any effort to support the arm during measurement may increase the measured blood pressure.
- Make sure, you are in a comfortable, relaxed position with leg-uncrossed, feet flat on the floor, back and arm supported, middle of the cuff at the level of the right atrium of the heart and do not move or constrict your muscles and talk during measurement. Use a cushion to support your arm if necessary. Keep position in normal use.
- If the arm artery lies lower or higher than the heart, a false reading will be obtained.
- · A loose or open cuff causes false readings.
- With repeated measurements, blood accumulates in the arm which can lead to false reading.
- Consecutive blood pressure measurements should be repeated after 1 minute pause or after the arm has been held up in order to allow the accumulated blood to flow away.

### **CORRECT POSTURE**

- 1. Sit beside the table and let the table support your arm as you take the measurement.
- 2. Sit upright with your back straight.
- 3. Make sure that the cuff on the upper arm no cross, and is at approximately the same level as the heart.
- Make sure that your feet lie on the ground and no cross.
- 5. You may lie on your back and take a measurement. Look at the ceiling, keep calm, and don't move your neck or body during the measurement.





# **POSITION THE CUFF**

- 1. Insert the edge of the cuff approximately 5 centimeters into the D-ring as shown in figure.
- 2. Put the cuff on the left upper arm with the tube pointing to the direction of palm. If measurement on your left arm is difficult, you can use right arm for measurement. In this case, it is necessary to know that the readings may differ about 5-10 mmHg between left arm and right arm.
- 3. Wrap cuff around your upper arm with the lower edge of the cuff approximately 2-3 centimeters above the elbow. The mark <ARTERY> must be over the artery of the arm.
- 4. Press the cuff to make sure that it is attached securely. The cuff should not be too tight or loose is greatly recommended. Two fingers should be easily put in between cuff and upper arm.
- 5. The mark <INDEX> on the cuff must point to area <NORMAL> or <LARGE CUFF>. This means the cuff size is correct. If mark <INDEX> points to the area beyond area <NORMAL> or <LARGE CUFF>, please consult your dealer whether you need another size cuff. This device is supplied with the standard cuff which is fit for the arm size 22-32 cm.
- 6. Sometimes it is difficult to make the cuff regular depending on the shape of the user's upper arm, the cone-shape assembly of cuff is also acceptable.
- 7. If your clothes restrict the blood circulation of your upper arm, or you roll your sleeve up so as to result in such restriction. Please take off your shirt to get an accurate measurement if necessary.

#### Caution:

If you experience discomfort during a measurement, such as pain in the upper arm or other complaints, press the 'O/I 'button to release the air immediately from the cuff. Loosen the cuff and remove it from your arm.



# **CARRY OUT A MEASUREMENT**

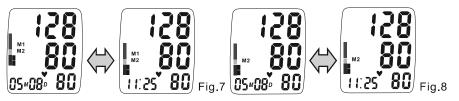
1.Insert the tube plug into the air connector.

Before the measurement, take 3 to 5 deep breaths and relax yourself. Don't talk or move your arm;

2.Press button 'O/I', and all symbols will appear on display in 2 seconds as Fig.4. Then two short beeps will sound and '0' will appear on the screen. Pump begins to inflate with display showing the reading of pressure. Generally the pressure will reach 190 mmHg as Fig.5;



- 3. The pump stops inflating and cuff pressure begins to decrease gradually, during which the user's blood pressure and pulse will be calculated as Fig. 6;
- 4. There will be a long beep following the completion of the measurement. The air in the cuff will deflate quickly and the blood pressure & pulse reading will be displayed. The measuring time will also display together in two screens alternately. At the same time, the 'M1' or 'M2' will flash to remind the user to record the reading as Fig.7;



- 5.Press button 'M1' or button 'M2' to record the reading in corresponding memory. For example, if button 'M2' is pressed, the display will show as Fig.8. If the user does not press button 'M1' or 'M2' or press button 'O/I', the reading won't be recorded;
- 6. The device displays the result for 3 minutes and will then return to standby mode automatically. Press the button "O/I" to return to standby mode immediately. Please rest for 3 minutes before taking another measurement.

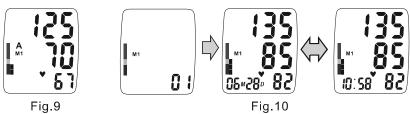
#### RAPID DEFLATION DURING MEASUREMENT

If you do not feel well during measurement or want to stop the measurement for some reason, you can press the 'O/I 'button. The device will quickly release the air in cuff and the device will be returned to standby mode.

# **USER M1/M2 MEMORY**

#### **MEMORY RECALL**

- 1.LD-588 can store 60 sets of readings each in 'M1' and 'M2', and will automatically calculate the average value of the latest 3 readings for 'M1' and 'M2' respectively. When the memory is full (60 sets of readings are stored), the oldest reading will be replaced by the new one. The memory will not be cleared if the unit is turned off or the power supply is removed.
- 2.After a measurement is finished or when the device is in standby mode, the user can press button 'M1' or button 'M2' to recall memory. Press button 'M1', the display will show the average value of the latest 3 readings as Fig.9;



- 3. Press again, the display will show '01' and then change to display the measurement reading with date, and then change to the measurement reading with time.
- 4.Press again, the display will show '02', which means the second to the latest reading...



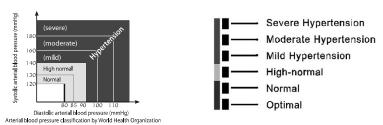
Fig.11

#### **MEMORY CLEARANCE**

After a measurement is finished or when the device is in standby mode hold on button 'M1' or 'M2' for at least 3 seconds, the display will show 'Clr' which means the stored reading for 'M1' or 'M2' is removed as

# WHO CLASSIFICATION INDICATION

Standards for assessment of high or low blood pressure, regardless of age, have been established by World Health Organization(WHO) as show in the chart as below:



The indicator displays a segment, based on the current data, corresponding to the WHO classification.

For example, if your blood press is 145mmHg (systolic pressure), 88mmHg (diastolic pressure), according to the world health organization standard, your blood pressure level is Mild Hypertension.

Note: If the systolic blood pressure and the diastolic blood pressure fall into different categories, the higher value should be taken for classification.

# **IRREGULAR HEARTBEAT DETECTOR**

Model LD-588 digital blood pressure monitor provides a blood pressure and pulse rate measurement even when an irregular heartbeat occurs. When the device detects the irregular heartbeat or any excessive body movement during measurement, the '♥' icon will display in the LCD. It is important that you are relaxed, remain still and do not talk during measurement.

Notice: We recommend contacting your physician if you see this '\( \psi \)' indicator frequently.

# ERROR AND LOW BATTERY INFORMATION

INDICATION	POSSIBLE REASON	CORRECTION METHODS
	The cuff is not correctly applied or the tube plug is not inserted tightly.	Make sure that cuff is put on correctly and the tube plug is inserted tightly and repeat the measurement.
Err	Movement of arm/hand or talking during measurement.	Repeat the measurement by following the instructions.
	The cuff is not inflated to necessary pressure.	Repeat the measurement inflating the cuff to 30-40 mm Hg above expected systolic pressure.
	The batteries are weak	Replace all 4 batteries with new ones.

# TROUBLESHOOTING

SYMPTOM	CHECK POINT	REMEDY
No display when the O/I button is pressed	The batteries have run down. The polarity of battery is wrong. The battery contacts require cleaning.	Replace all the batteries with new ones. Install the batteries correctly. Clean the battery terminals with dry cloth.
Inflation stops and restarts	The automatic inflation for ensuring correct measurement. Did you talk or move your arm (or hand) during measurement?	See <automatic inflation=""> Relax and repeat the measurement.</automatic>
The blood pressure reading is extremely low or high.	Is the cuff at the same level as the heart? Is the cuff wrapped too tight or too loose? Did you tense your arm during measurement? Did you talk or move your arm (or hand) during measurement?	Make sure that your arm is correctly positioned, see CORRECT POSTURE, and the cuff positioned correctly, see POSITION THE CUFF.  Relax before measurement. Remain still and silent during the measurement.
Pulse rate is too low or too high.	Did you talk or move your arm (or hand) during measurement? Did you take the reading immediately after exercise?	Relax and remain still and silent during the measurement. Take measurement again after resting for more than 5 minutes.
The device turned off when it was on.	The batteries are run down. The device has entered standby mode.	Replace all all batteries with new ones. The device automatically turns off 3 minutes after the last measurement - press the O/I button to restart the device.

# CARE, STORAGE AND RECYCLING

- 1. It's necessary to protect this device against damp, direct sunlight, shock, vibrations, solvent, alcohol and gasoline.
- 2. Remove the batteries if the device is to be stored for an extended period of time. Leakage of batteries can cause damage to the device.

### WARNING: Keep the batteries out of reach of children!

- 3. Keep the cuff away from sharp objects and don't extend or twist the cuff.
- 4. This device is not waterproof. Keep the device clean and away from dust. Use only a soft, dry cloth to clean the device.
- 5. Do not keep and do not use the device near heaters or naked flames.
- 6. The Cuff should only be cleaned when necessary. the fabric should be cleaned with cotton wool and a 3% solution of hydrogen peroxide. After long use, partial discoloration of the fabrics covering the cuff may occur. The cuff must not be laundered or ironed.

**WARNING:** Under no circumstances should the inner bladder of the cuff be washed.

- 7. Since neither the device nor batteries are household waste, follow your local recycling rules and dispose them at an appropriate collection site.
- 8.Do not drop or knock the device. Do not open the device. Repairs can only be made by the manufacturer or authorised distributor. There are no user serviceable parts for either the BP device or Cuff.

# SPECIFICATIONS

Model	LD-588 (00627 & 00628)
Size	127(L) ×99(W) ×50(H)mm
Weight	Approximately 255g without batteries
Measuring method	Oscillometry
Measuring range	40 to 180mmHg(DIA,diastolic pressure) 60 to 260mmHg(SYS,systolic pressure) 40 to 160 beats/minute (PUL,pulse rate)
Measuring accuracy	± 3 mmHg for BP reading ± 5% for the Pulse rate reading
Inflation	Automatic (the air pump)
Rapid deflation	Automatic (the electronic valve)
Batteries	Optional component, 4"AA"×1.5V
Adapter	Optional component, 6V, 600mA
Memory	2 Users with 60 sets of memory each
Operation temperature and humidity, air pressure	+10 $^{\circ}$ to + 40 $^{\circ}$ , 85% and below 800hPa to 1060hPa
Transport and storage temperature and humidity, air pressure	-20 ℃ to + 50 ℃, 85% and below 500hPa to 1060hPa
Upper arm circumference	Standard Cuff 22-32cm (Optional Large Cuff 32-43.2cm)
Contents	1 BP Device, 1 Standard Cuff 22-32cm, 1 IFU, 4 AA batteries, 1 Warranty Card, 1 Carry Bag
Overvoltage category	Category II
Life expectancy in normal home use:	Device: 5 years Cuff: 2 years

# MANUFACTURER'S DECLARATION

# Compliance information for each EMC test

Electromagnetic Emission(Home Healthcare Environment)		
Emission test(IEC60601-1-2:2014)	Compliance	
Conducted and radiated RF emissions	CLSPR 11 Group 1 Class B	
Harmonic emissions IEC 61000-3-2	Class A	
Voltage fluctuations/flicker emissions IEC 61000-3-3	Complies	

# Compliance information for each EMC test

Declaration-Electromagnetic Immunity(Home Healthcare Environment)			
Immunity test	IEC 60601 test level	Compliance level	
Conducted RF IEC 61000-4-6	3V 150 kHz to 80 MHz 6V in ISM and amateur radio bands between 0.15MHz and 80MHz	3V 150 kHz to 80 MHz 6V in ISM and amateur radio bands between 0.15MHz and 80MHz	
Radiated RF IEC 61000-4-3	10 V/m 80 MHz to 2.7 GHz also meet the requirement of table 9 of 60601-1-2:2014	10 V/m 80 MHz to 2.7 GHz also meet the requirement of table 9 of 60601-1-2:2014	
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 for power supply lines	±2 kV for power supply lines	
Surge IEC 61000-4-5	±0.5 kV,± 1 kV line(s) to lines	±0.5 kV,± 1 kV line(s) to lines	
Voltage dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11	0% Uт, 0.5 Cycle at 0°,45°,90°, 135°,180°, 225°, 270°, 315° 0% Uт, 1 Cycle and 70% Uт, 25/30 cycles sigle phase:at 0° 0% Uт,250/300 cycles	0% U <sub>T</sub> , 0.5 Cycle at 0°,45°,90°, 135°,180°, 225°, 270°, 315° 0% U <sub>T</sub> ,1 Cycle and 70% U <sub>T</sub> , 25 cycles sigle phase:at 0° 0% U <sub>T</sub> ,250cycles	
Power frequency (50/60Hz) magnetic field IEC 61000-4-8	30 A/m	30 A/m	

NOTE: The EUT is the a.c. mains voltage prior to application of the test level. The following phenomenon is still fulfill the requirement of basic safety and essential performance.

\*UT:230V ~/50Hz.The pressure of the EUT is deviation the normal value but the value is still more than 10psi when flow is 4.5l/min.

\*\*UT:230V ~/50Hz.The EUT stop working when adding 0%UT,but the EUT can restore its normal mode automatically.

- Use of this equipment adjacent to or stacked with other equipment should be avioded 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.
- Portable RF communications equipment(including peripherals such as antenna cables and external antennas) should be used no closer than 30cm(12 inches to any part of this devie, inluding cables specificed by the manufacturer.
   Otherwise, degradation of the performance of this equipment could result.
- Under the test condition specified in immunity, the product can provide the basic safety and essential performance.
- If the essential performance is lost or degraded, additional measures are necessary, such as reorienting or relocating the device.

# **AUTOMATIC INFLATION**

If the initial inflation of the cuff to 190mmHg is not sufficiently high for a particular patient, or if any movement of the arm or hand occurred during the reading, the device will stop the measurement. It will then re-inflate the cuff to a higher level. There are 4 fixed levels in the cuff: 190, 230, 270 and 300 mmHg. The automatic inflation of the cuff is repeated until a suitable level for the patient is reached. This is not a fault.

### **WARRANTY**

- 1) The warranty period of this device is 12 months from the date of sale and does not include the batteries or devices/cuffs that have been misused or tampered with.
- 2) Please fill in the warranty card and return to the address stated or complete the online warranty registration.

# PERIODIC SAFETY CHECKS

If you use the device with the optional AC power adapter then the following inspection and maintenance actions should be carried out:

- 1. Every time the AC adapter is used, check the adapter, cable and input connector for any damage, do not use if damaged.
- 2. On a yearly basis check the AC power adapter input connector to the BP device to ensure it is free from dust or other debris.



#### **CIGA Healthcare Ltd**

Kilcran House, Kildowney Road, Ballymena, BT44 9EY, Northern Ireland



#### HONSUN (NANTONG) Co., Ltd

No. 8, Tongxing Road, Economic & Technical Development Area, Nantong City, Jiangsu, P.R. China



#### SHANGHAI INTERNATIONAL HOLDING CORP. GMBH (EUROPE)

Eiffestrasse 80, 20537, Hamburg, Germany

**UK Customer Care Line** 

0800 0430318

R.O.I. Customer Care Line

0818 333 181

Email

info@suresign.com

**Online** 

suresign.com











REF: LD-588 PN: 00350B REV: 10/21