Digital Blood Pressure Monitor

Model UA-787 Plus

Instruction Manual

Manuel d’instructions

Manual de Instrucciones

Manuale di Istruzioni

Bedienungsanleitung

使用手册

WM+PD4001187C
Contents

Dear Customers................................................................. 2
Preliminary Remarks ....................................................... 2
Precautions........................................................................ 2
Parts Identification.......................................................... 3
Symbols............................................................................ 4
Operation Mode................................................................ 5
  1. Normal Measurement With Storing Data ...................... 5
  2. Recalling Data.......................................................... 5
  3. Clearing Data............................................................ 5
  4. Measurement With The Desired Systolic Pressure ......... 5
Using The Monitor ........................................................... 6
  Installing / Changing The Batteries ............................... 6
  Connecting The Air Hose ............................................. 6
  Adjusting The Built-in Clock ......................................... 7
  Setting Three Reminders .............................................. 7
  Alarm ON/OFF Mark On The Display ............................ 8
  Attaching The Arm Cuff ............................................... 8
  How To Take Proper Measurements ............................... 8
  Measurement............................................................... 8
  After Measurement ..................................................... 8
Measurements ................................................................... 9
  Normal Measurement.................................................... 9
  Measurement With The Desired Systolic Pressure .......... 10
  Notes For Proper Measurement .................................... 10
Recalling Memory Data .................................................... 11
What Is An Irregular Heartbeat ......................................... 12
Pressure Bar Indicator ..................................................... 12
WHO Classification Indicator .......................................... 12
About Blood Pressure...................................................... 13
  What Is Blood Pressure? ............................................. 13
  What Is Hypertension And How Is It Controlled? ......... 13
  Why Measure Blood Pressure At Home? ...................... 13
  WHO Blood Pressure Classification ............................ 13
  Blood Pressure Variations ............................................. 13
Troubleshooting ................................................................ 14
Maintenance ..................................................................... 15
Technical Data.................................................................. 15
Dear Customers

Congratulations on purchasing a state-of-the-art A&D blood pressure monitor, one of the most advanced monitors available today. Designed for ease of use and accuracy, this monitor will facilitate your daily blood pressure regimen. We recommend that you read through this manual carefully before using the device for the first time.

Preliminary Remarks

☐ This device conforms to the European Directive 93/42 EEC for Medical Products. This is made evident by the CE mark of conformity. (0366: The reference number to the involved notified body)

☐ The device is designed for use on adults only, not newborns or infants.

☐ Environment for use
The device is for use indoors.

Precautions

☐ Precision components are used in the construction of this device. Extremes in temperature, humidity, direct sunlight, shock or dust should be avoided.

☐ Clean the device with a soft, dry cloth. Never use thinner, alcohol, benzine, or wet cloth.

☐ Avoid tightly folding the cuff or storing the hose tightly twisted for long periods, as such treatment may shorten the life of the components.

☐ The device and cuff are not water resistant. Prevent rain, sweat and water from soiling the device and cuff.

☐ Measurements may be distorted if the device is used close to televisions, microwave ovens, cellular telephones, X-ray or other devices with strong electrical fields.

☐ Used equipment, parts and batteries are not treated as ordinary household waste, and must be disposed of according to the applicable local regulations.
Parts Identification

Display

MEMORY Button

DC Jack

START Button
(Orange illumination)

CLOCK Button

Arm Cuff

Air Hose

Battery Cover

Air Connector Plug

Air Socket

Battery Compartment

1.5V Batteries
(R6P, LR6 or AA)

Part of Display

Pressure Bar Indicator

and

WHO Classification Indicator

Heart Mark

I.H.B. Indicator (Irregular heartbeat indicator)

MEMORY

Systolic Pressure

Diastolic Pressure

Pulse Rate

Battery Indicator
<table>
<thead>
<tr>
<th>Symbols</th>
<th>Function / Meaning</th>
<th>Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standby and Turn the device on.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Battery installation guide</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Direct current</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serial number</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Date of manufacture</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type BF: Device, cuff and tubing are designed to provide special protection against electrical shocks.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Measurement is in progress. It blinks while detecting the pulse.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Irregular Heartbeat indicator. (I.H.B.) The indicator that detects irregular heartbeats or any excessive body movement during the measurement.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Previous measurements stored in MEMORY.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Full Battery The battery power indicator during measurement.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low Battery The battery is low when it blinks.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unstable blood pressure due to movement during the measurement.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The systolic and diastolic values are within 10 mmHg of each other.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The pressure value did not increase during inflation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The cuff is not fastened correctly.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>The pulse is not detected correctly.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Systolic blood pressure in mmHg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diastolic blood pressure in mmHg</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulse per minute</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CLOCK button mark</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alarm ON/OFF mark of the reminder</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EC directive medical device label</td>
<td></td>
<td></td>
</tr>
<tr>
<td>WEEE label</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Operation Mode**

1. **Normal Measurement With Storing Data** *(Refer to page 9)*

   Press the [START] button. Blood pressure is measured and data is stored within the device. The device can store the last sixty sets of data in memory automatically.

2. **Recalling Data** *(Refer to page 11)*

   Press the MEMORY button to recall the data. The date and the most recent data are displayed.

   The device can store the last sixty sets of data in memory automatically.

3. **Clearing Data** *(Refer to page 11)*

   Press and hold the MEMORY button until the "M" (memory) mark blinks to clear the stored data.

4. **Measurement With The Desired Systolic Pressure**

   Refer to page 10 for the measurement with the desired systolic pressure.
Installing / Changing The Batteries
1. Slide the battery cover up to open it.
2. Remove the used batteries and insert new batteries into the battery compartment as shown, taking care that the polarities (+) and (-) are correct.
3. Slide the battery cover down to close it.
   Use only R6P, LR6 or AA batteries.

CAUTION
- Insert the batteries as shown in the battery compartment. If not, the device will not work.
- When (LOW BATTERY mark) blinks on the display, replace all batteries with new ones. Do not mix old and new batteries. It may shorten the battery life, or cause the device to malfunction.
- (LOW BATTERY mark) does not appear when the batteries are drained.
- Battery life varies with the ambient temperature and may be shorter at low temperatures.
- Use the specified batteries only. The batteries provided with the device are for testing monitor performance and may have a limited life.
- Remove the batteries if the device is not to be used for a long time.
  The batteries may leak and cause a malfunction.
- Stored data are cleared when the batteries are removed.

Connecting The Air Hose
- Insert the air connector plug into the air socket firmly.
Using The Monitor

Adjusting The Built-in Clock
The monitor has a built-in clock. We recommend that you adjust the clock prior to use.

1. Press and hold the CLOCK button until the digits start blinking.

2. Select the year using the START button. Press the CLOCK button to set the current year and move to month/day selection. The date can be set anywhere between the years 2004 and 2053.

3. Select the month using the START button. Press the CLOCK button to set the current month and move to day selection.

4. Select the day using the START button. Press the CLOCK button to set the current day and move to hour/minute selection.

5. Select the hour using the START button. Press the CLOCK button to set the current hour and move to minute selection.

6. Select the minute using the START button. Press the CLOCK button to set the current minute and activate the clock.

Setting Three Reminders
This monitor has 3 reminder alarms. You can set 3 different reminder alarms within a 24-hour period.

1. Press and hold the CLOCK button until the digits start blinking. Then press the MEMORY button. “P-1” is shown at the middle line of the display.

2. Select the hour using the START button and press the CLOCK button to set the hour and move to minute selection. Press the MEMORY button to complete the reminder setting after selecting the minute.

3. Then the display shows “P-2” for the second reminder. Repeat the above process if you need a second reminder.

4. A third reminder can be set as well.
Using The Monitor

Alarm ON/OFF Mark On The Display
When the alarm is on, a “p” appears on the LCD. To turn the alarm off, simply press the CLOCK button once.
The alarm will sound for 1 minute. To stop the alarm sound, press the START button once.

Attaching The Arm Cuff
1. Wrap the cuff around the upper arm, about 2-3 cm above the elbow, as shown. Place the cuff directly against the skin, as clothing may cause a faint pulse, and result in a measurement error.
2. Constriction of the upper arm, caused by rolling up a shirtsleeve, may prevent accurate readings.

How To Take Proper Measurements
For the most accurate blood pressure measurement:
☐ Sit comfortably at a table. Rest your arm on the table.
☐ Relax for about five to ten minutes before measurement.
☐ Place the center of the cuff at the same height as your heart.
☐ Remain still and keep quiet during measurement.
☐ Do not measure right after physical exercise or a bath. Rest for twenty or thirty minutes before taking the measurement.
☐ Try to measure your blood pressure at the same time every day.

Measurement
During measurement, it is normal for the cuff to feel very tight. (Do not be alarmed).

After Measurement
After measurement, press the START button to turn off the power. Remove the cuff and record your data.

Note: The device has an automatic power shut-off function, which turns the power off automatically one minute after measurement. Allow at least ten minutes between measurements on the same person.
Measurements

Model UA-787 Plus is designed to detect the pulse and to inflate the cuff to a systolic pressure level automatically. If your systolic pressure is expected to exceed 230 mmHg or you use the optional small cuff, read "Measurement With The Desired Systolic Pressure" on the next page.

Normal Measurement
1. Place the cuff on the arm (preferably the left arm). Sit quietly during measurement.

2. Press the START button. The average blood pressures and last data number are displayed briefly. Then the display changes, as indicated in the figure at the right, as the measurement begins. The cuff starts to inflate. It is normal for the cuff to feel very tight. A pressure bar indicator is displayed, as in the figure at the right, during inflation.

   Note: If you wish to stop inflation at any time, press the START button again.

3. When inflation is complete, deflation starts automatically and ❤️ (heart mark) blinks, indicating that the measurement is in progress. Once the pulse is detected, the mark blinks with each pulse beat.

   Note: If an appropriate pressure is not obtained, the device starts to inflate again automatically.

4. When the measurement is complete, the systolic and diastolic pressure readings and pulse rate are displayed. The cuff exhausts the remaining air and deflates completely.

5. Press the START button again to turn off the power.

   Note: Model UA-787 Plus is provided with an automatic power shut-off function. Allow at least ten minutes between measurements on the same person.
Measurements

Measurement With The Desired Systolic Pressure
If your systolic pressure is expected to exceed 230 mmHg or you use the optional small cuff, use this procedure.

1. Place the cuff on the arm (preferably the left arm).

2. Press and hold the [START] button until a number about 30 to 40 mmHg higher than your expected systolic pressure appears.

3. Release the [START] button to start measurement, when the desired number is reached. Then continue to measure your blood pressure as described on the previous page.

Notes For Proper Measurement

- Sit down in a comfortable position. Place the arm to be used for the measurement on a table or other support so that the center of the cuff will be at the same height as your heart.

- Relax for about five or ten minutes before taking a measurement. If you are excited or depressed by emotional stress, the measurement will reflect this stress as a higher (or lower) than normal blood pressure reading and the pulse reading will usually be faster than normal.

- An individual's blood pressure varies constantly, depending on what you are doing and what you have eaten. What you drink can have a very strong and rapid effect on your blood pressure.

- This device bases its measurements on the heartbeat. If you have a very weak or irregular heartbeat, the device may have difficulty determining your blood pressure.

- Should the device detect a condition that is abnormal, it will stop the measurement and display an error symbol. Refer to page 4 for the description of symbols.

- This blood pressure monitor is intended for use by adults only. Consult with your physician before using this device on a child. A child should not use this device unattended.
Recalling Memory Data

Note: This device stores the last sixty measurements in memory automatically. The data is retained as long as the batteries are in the device. When you remove the batteries or the batteries are drained, the data will be erased.

1. Press the MEMORY button.

2. The date and the most recent data are displayed.

3. When the MEMORY button is pressed while data is displayed, the previous data is displayed.

4. After the last data is displayed, the display goes blank.

5. Press and hold the MEMORY button until the “M” (memory) mark blinks to clear the stored data.

Note: Pressing the START button while the memory data is displayed initiates the UA-787Plus to start taking a measurement.
What Is An Irregular Heartbeat

Model UA-787 Plus blood pressure monitor provides a blood pressure and pulse rate measurement even when an irregular heartbeat occurs. An irregular heartbeat is defined as a heartbeat that varies by 25% from the average of all heartbeats during the blood pressure measurement. It is important that you be relaxed, remain still and do not talk during measurements.

Note: We recommend contacting your physician if you see this ♥ indicator frequently.

Pressure Bar Indicator

The indicator monitors the progress of pressure during measurement.

WHO Classification Indicator

Each segment of the bar indicator corresponds to the WHO blood pressure classification described on the next page.

WHO Classification Indicator

- Severe hypertension
- Moderate hypertension
- Mild hypertension
- High normal
- Normal
- Optimal

Example:

Moderate hypertension

Mild hypertension

High normal
About Blood Pressure

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

What Is Hypertension And How Is It Controlled?
Hypertension, an abnormally high arterial blood pressure, if left unattended, can cause many health problems including stroke and heart attack. Hypertension can be controlled by altering lifestyle, avoiding stress, and with medication under a doctor’s supervision.
To prevent hypertension or keep it under control:
- Do not smoke
- Reduce salt and fat intake
- Maintain proper weight

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

WHO Blood Pressure Classification
Standards to assess high blood pressure, without regard to age, have been established by the World Health Organization (WHO), as shown in the chart.

Blood Pressure Variations
An individual’s blood pressure varies greatly on a daily and seasonal basis. It may vary by 30 to 50 mmHg due to various conditions during the day. In hypertensive individuals, variations are even more pronounced. Normally, the blood pressure rises while at work or play and falls to its lowest levels during sleep. So, do not be overly concerned by the results of one measurement. Take measurements at the same time every day using the procedure...
described in this manual to get to know your normal blood pressure. Regular readings give a more comprehensive blood pressure history. Be sure to note date and time when recording your blood pressure. Consult your doctor to interpret your blood pressure data.

### Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Possible Reason</th>
<th>Recommended Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nothing appears on the display, even when the power is turned on.</td>
<td>Batteries are drained.</td>
<td>Replace all batteries with new ones.</td>
</tr>
<tr>
<td></td>
<td>Battery terminals are not in the correct position.</td>
<td>Reinstall the batteries with negative and positive terminals matching those indicated on the battery compartment.</td>
</tr>
<tr>
<td>The cuff does not inflate.</td>
<td>Battery voltage is too low. [LOW BATTERY mark] blinks. [If the batteries are drained completely, the mark does not appear.]</td>
<td>Replace all batteries with new ones.</td>
</tr>
<tr>
<td>The unit does not measure. Readings are too high or too low.</td>
<td>The cuff is not fastened properly.</td>
<td>Fasten the cuff correctly.</td>
</tr>
<tr>
<td></td>
<td>You moved your arm or body during the measurement.</td>
<td>Make sure you remain very still and quiet during the measurement.</td>
</tr>
<tr>
<td></td>
<td>The cuff position is not correct.</td>
<td>Sit comfortably and still. Raise your hand so that the cuff is at the same level as your heart.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>If you have a very weak or irregular heart beat, the device may have difficulty in determining your blood pressure.</td>
</tr>
<tr>
<td>Other</td>
<td>The value is different from that measured at a clinic or doctor's office.</td>
<td>Refer to “Why measure blood pressure at home”.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Remove the batteries. Place them back properly and try the measurement again.</td>
</tr>
</tbody>
</table>

Note: If the actions described above do not solve the problem, contact the dealer. Do not attempt to open or repair this product, as any attempt to do so will make your warranty invalid.
**Maintenance**

Do not open the device. It uses delicate electrical components and an intricate air unit that could be damaged. If you cannot fix the problem using the troubleshooting instructions, request service from your dealer or from the A&D service group. The A&D service group will provide technical information, spare parts and units to authorized dealers.

The device was designed and manufactured for a long service life. However it is generally recommended to have the monitor inspected every 2 years, to ensure proper functioning and accuracy. Please contact either your authorized dealer or A&D for maintenance.

**Technical Data**

<table>
<thead>
<tr>
<th>Description</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>UA-787 PLUS</td>
</tr>
<tr>
<td>Measurement method</td>
<td>Oscillometric measurement</td>
</tr>
<tr>
<td>Measurement range</td>
<td>Pressure: 20 - 280 mmHg</td>
</tr>
<tr>
<td></td>
<td>Pulse: 40 - 200 beats / minute</td>
</tr>
<tr>
<td>Measurement accuracy</td>
<td>Pressure: ±3 mmHg or 2%, whichever is greater</td>
</tr>
<tr>
<td></td>
<td>Pulse: ±5%</td>
</tr>
<tr>
<td>Power supply</td>
<td>4 x 1.5V batteries (R6P, LR6 or AA) or</td>
</tr>
<tr>
<td></td>
<td>AC adapter (TB-182)</td>
</tr>
<tr>
<td>Classification</td>
<td>Type BF</td>
</tr>
<tr>
<td>Clinical test</td>
<td>According to ANSI / AAMI SP-10 1987</td>
</tr>
<tr>
<td>EMC</td>
<td>IEC 60601-1-2: 2001</td>
</tr>
<tr>
<td>Memory</td>
<td>Last 60 measurements</td>
</tr>
<tr>
<td>Operating condition</td>
<td>+10°C to +40°C / 30%RH to 85 %RH</td>
</tr>
<tr>
<td>Storage condition</td>
<td>-10°C to +60°C / 30%RH to 85 %RH</td>
</tr>
<tr>
<td>Dimensions</td>
<td>Approx. 163 [W] x 62 [H] x 112 [D] mm</td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 350 g, excluding the batteries</td>
</tr>
<tr>
<td>Accessory AC adapter</td>
<td>The adapter is to connect the blood pressure</td>
</tr>
<tr>
<td></td>
<td>monitor to a power source at home.</td>
</tr>
<tr>
<td></td>
<td>TB-182</td>
</tr>
<tr>
<td></td>
<td>Please contact your local A&amp;D dealer for</td>
</tr>
<tr>
<td></td>
<td>purchasing.</td>
</tr>
</tbody>
</table>

Note: Specifications are subject to change without prior notice.