UM-211

Digital Blood Pressure Monitor

Instruction Manual	Original
Manuel d'instructions	Traduction
Manual de instrucciones	Traducción
Manuale di Istruzioni	Traduzione
使用手冊	翻譯

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Contents

Dear Customers 2
Preliminary Remarks 2
Intended Purpose 3
Clinical Benefit 3
Contraindication 3
Precautions 3
Parts Identification 7
Symbols 8
Mode list 11
Using the Monitor 12
- Inserting / Changing the Batteries 12
- Connecting the Air Hose 12
- Connecting the AC Adapter 13
- Recharging the Battery 13

Operation 14
- Standby mode 14
- Measurement standby mode 14
- Measurement with the SET Pressure 15
- Auscultation setting 16
- Auscultation exhaust speed changing 16
- Adjusting the Built-in Clock 17
- Clock display setting 18
- Auto power OFF time setting 18
- Room temperature unit changing 19
- Pressure confirmation mode 19

Recalling the Memory Data 20
- Recalling the Memory Data 20
- Deleting all Data Stored in Memory 21

Measurements 22
- Selecting the Correct Cuff Size 22
- Applying the Arm Cuff 22
- Normal Measurement 23
- Auscultation measurement 24
- After Measurement 25
- Notes for Accurate Measurement 25
- For the auscultation measurement 25
- Unplug the AC adapter 26
- Removing the battery 26

What is an Irregular Heartbeat 27
Troubleshooting 27
Maintenance 28
Technical Data 31

Dear Customers

Thank you for purchasing a state-of-the-art A&D blood pressure monitor. Designed for ease of use and accuracy, this device 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 Medical Device Regulations (EU 2017/745) and UKCA Medical Device Regulations 2002 for Medical Products.
  This is made evident by the CE2797 and UKCA0086 mark of conformity. (2797 and 0086: The reference numbers to the involved notified body.)
- ❑ The device is designed for use on adults and children of age 3 years and older.
- ❑ This device fulfils the following provisions.

CE 2797 **Medical Device Regulation (EU 2017/745)**

UK CA 0086 **UKCA Medical Devices Regulations 2002**

- ❑ Environment for use: The device is designed to be used in the medical facilities.
- ❑ This device is designed to measure blood pressure and pulse rate of people for diagnosis.
- ❑ Operating principle: This device is an oscillometric sphygmomanometer. When the cuff pressure is pressurized above systolic blood pressure and then is gradually depressurized, the pulsation phenomenon synchronized with the heart beat appears in the cuff pressure. This pulsation starts small at the beginning, becomes large as the pressure decreases, eventually shows the maximum amplitude, then decreases again, and ultimately creates a mountain-shaped pattern. This oscillometric-type sphygmomanometer analyzes the signal information of this pulsation with a microcomputer and determines systolic blood pressure and diastolic blood pressure values. Also this device is designed to monitor and display cuff pressure during cuff inflation and deflation while the user determines the patient's blood pressure level by listening to Korotkoff sounds with a stethoscope.

Intended Purpose

Digital Blood Pressure Monitor is intended to be used by healthcare professionals to measure systolic and diastolic blood pressure and pulse rate. It provides the user with an indication of an irregular heartbeat allowing further medical attention to be sort.

Clinical Benefit

Successful assessment of blood pressure reading in accordance with the device's intended purpose.

Contraindication

- ❑ Do not use the device where flammable gases such as anesthetic gases are present. It may cause an explosion.
- ❑ Do not use the device in highly concentrated oxygen environments, such as a high-pressure oxygen chamber or an oxygen tent.
- ❑ Do not apply the cuff on an arm if another electrical medical device is already attached.
- ❑ Do not apply the cuff on an arm receiving an intravenous drip or blood transfusion. It may cause injury or accidents.
- ❑ Do not use on patients with blood flow disorders.
- ❑ This device is not intended to diagnose heart arrhythmias. If the Irregular Heart Beat indicator illuminates frequently and is unrelated to patient movement during blood pressure measurement, further medical attention must be sort.
- ❑ Do not wrap the cuff on the arm with a wound. That may not only result in reopening the wound but could also cause an infection.
- ❑ Do not provide any servicing and perform maintenance while the medical device is in use.

Precautions

Installation or storage location for the device

- ❑ Extremes in room temperature, humidity, direct sunlight, shock or dust should be avoided.
- ❑ Use or keep the device in a stable location where there is no slope, no vibration and no mechanical shock (including when shipping).
- ❑ Use or keep the device in a location where the chemicals, medicines or gases are not present.
- ❑ The device and cuff are not water resistant.

- ❑ Measurement may be distorted if the device is used close to televisions, microwave ovens, cellular telephones, X-ray or other devices with strong electrical fields.
- ❑ A strong shock to the device may result in mechanical error or possible injury due to debris.
- ❑ Avoid tightly folding the cuff or storing the hose tightly twisted for long periods, as such treatment may shorten the life of the components.

Confirmation before use

- ❑ Confirm that the device is safe and secure for accurate operation.
- ❑ Operate the device using the provided specified AC adapter.
- ❑ Only the specified options and consumables are allowed for use with this device.
- ❑ When reusing the device, confirm that the device is clean.
- ❑ This device is intended for use by doctors and clinical workers only in a medical environment. The monitor was not designed for patient's own use so care must be taken to ensure accurate results and avoid possible accidents.
- ❑ Do not use the device in an ambulance or ambulance helicopter. Doing so will prevent the device from providing accurate measurements.
- ❑ Do not use the device where plugging and unplugging of the AC adapter may be difficult.
- ❑ Clinical testing has not been conducted on newborn infants and pregnant women. Do not use on newborn infants or pregnant women. For the auscultation measurement, the device can be used for pregnant women.
- ❑ Do not use on patients that are using heart-lung support equipment.
- ❑ Confirm that there is no harm to the patient when the cuff is applied to the patient's arm and if the patient has had a mastectomy or lymph node clearance, then avoid the adjacent arm.
- ❑ This is a medical device. Please consult your healthcare provider with any questions or concerns you may have regarding your condition.
- ❑ Confirm for proper operation before use, if the packaging is damaged, unintentionally opened and exposed to environmental conditions outside of those specified.
- ❑ Do not modify the device. Doing so may cause accidents or damage to the device.

Precautions during use of the device

- ❑ When error display appears on the device or there are some doubts in the measurement values, confirm the patient's vital signs by using the palpation or auscultation method. Check that the air hose has not been bent or blocked.
- ❑ Should an error appear on the device, or if the patient feels discomfort, stop the device and take the proper corrective action to regain a safe environment.
- ❑ Ensure that the position of the applied cuff is at the same level as the heart. (Otherwise, the blood pressure value results in an error.)

- ❑ Do not start to measure the blood pressure without wrapping the cuff around the arm. That may result in the cuff bursting or other damage.
- ❑ Regularly confirm patient status when the measurement is performed frequently or for a long time. Otherwise, it may cause damage due to peripheral arterial disease.
- ❑ Use the device so that the air hose is not bent or blocked. Using the cuff with the air hose kinked or bent may result in peripheral circulatory failure due to hemostasis in the arm (caused by air remaining in the cuff).
- ❑ Do not apply excessive force to the AC adapter cable, such as lifting the device or pulling the AC adapter out by holding the AC adapter cable.
- ❑ Do not pull out or do not connect the specified AC adapter with a wet hand. That may result in an electrical shock or getting a burn.
- ❑ While measuring, do not connect or disconnect the AC adapter or battery or perform maintenance on them.
- ❑ Do not simultaneously touch the DC jack and the patient. That may result in electrical shock.
- ❑ To measure blood pressure, the arm must be squeezed by the cuff hard enough to cause some numbness and possibly a temporary red mark to the arm.
- ❑ Follow local instructions specified in the hospital when the cuff is used on several or infectious patients. Otherwise cross infection may result.
- ❑ If the patient has a very weak or irregular heart beat, the device may have difficulty in determining the blood pressure.
- ❑ Should the battery short-circuit, it may become hot and potentially cause burns.

Note

- ❑ Do not modify the device. It may cause accidents or damage to the device.
- ❑ The patient should be relaxed and avoid moving or talking during the measurement. Otherwise that may result in a measurement error.
- ❑ To ensure accurate measuring, we recommend measuring the blood pressure after being in a relaxed state for at least five minutes.
- ❑ When any serious incident occurs in relation to this device, report to its manufacturer and the competent authority in your country.

Care for after use

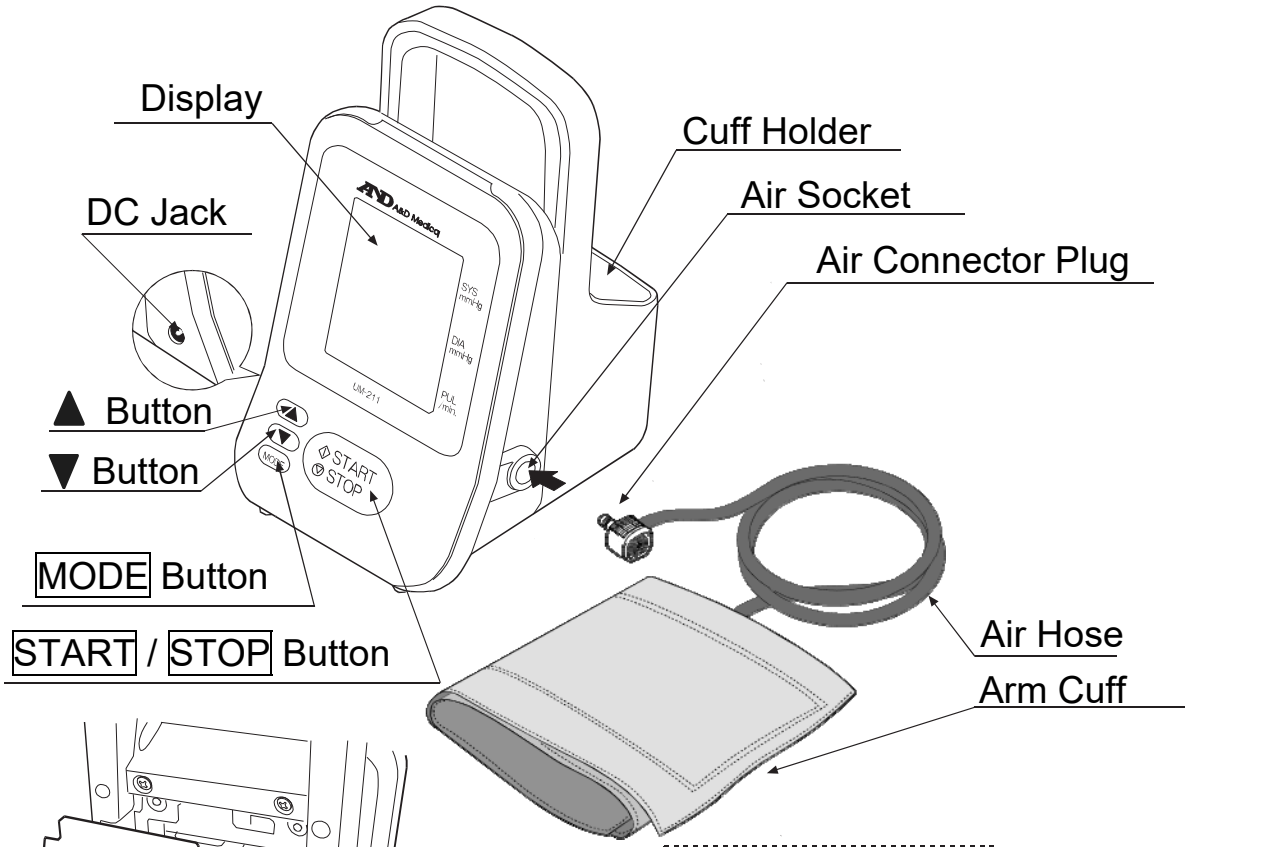
- ❑ When the cuff is infected by blood or body fluid, it should be safely disposed of according to local instructions or protocol to avoid any potential spread of infectious disease.
- ❑ Clean the device and cuff with a dry, soft cloth or a cloth dampened with water and a neutral detergent. Never use benzine, thinner or other harsh chemical to clean the device. For full details please read page 29.
- ❑ When carrying out maintenance on the device, turn the power off and remove the power cable from the outlet to prevent a risk of electrical shock.
- ❑ Do not spray, do not pour or do not spill a liquid on the main body, accessories, connectors, buttons or outlet ports.

- ❑ Do not perform autoclave or gas sterilization (EOG, formaldehyde gas or high concentration ozone etc.) on the device as this could result in degradation.
- ❑ The user authority (the hospital, clinic, etc.) is responsible for the safe use and maintenance of this electronic medical device. Care should be taken to follow the specified daily maintenance and inspection procedures for safe use.
- ❑ Store the cuff, air hose, and rubber bulb so that they are not bent or blocked. Doing so may cause an accident or damage to the device.

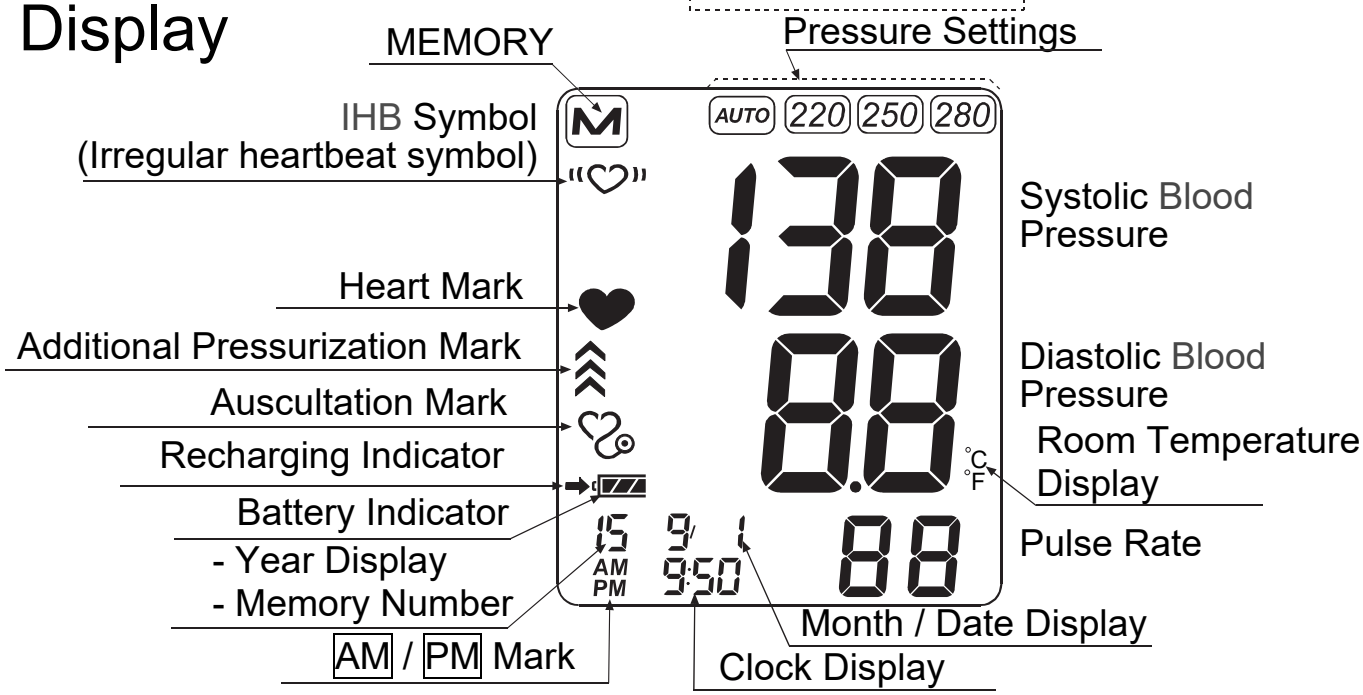
Specified battery pack

- ❑ Only the specified battery pack is allowed to be used with this device.
- ❑ Used equipment, parts and battery are not treated as ordinary household waste, and must be disposed of according to the applicable local regulations.
- ❑ Be sure to remove the specified AC adapter from the device when the specified battery pack is being re-installed in the device. Otherwise that may result in an electrical shock.
- ❑ Remove the specified battery pack from the device, and keep it elsewhere if you are not going to use the device for a month or more. Recharge the battery once every six months. Otherwise the battery may degrade.
- ❑ Be sure to use the device after the battery was recharged. Otherwise that may avoid from proper use for the device using the battery in emergency.
- ❑ If liquid leaked from the specified batteries gets into the eyes, avoid rubbing the eye and fully rinse the liquid off using water, then immediately seek medical attention.
- ❑ The specified battery pack should be used only on this device. Do not heat the battery pack, or do not break it up. That may cause a heat generation, catching fire, short circuit or explosion.
- ❑ Do not apply a pressure or mechanical shock to the specified battery pack. That may result in an expansion or explosion.
- ❑ Replace the specified battery pack with new one when the measurement time with this device is extremely short even after fully recharging.

Parts Identification



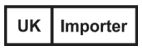
Display



Symbols

The symbols that are printed on the device and the packaging.

Symbols	Function / Meaning
	The blood pressure measurement is started when the START/STOP button is pressed at the standby mode. The blood pressure measurement is stopped when the START/STOP button is pressed during the measuring the blood pressure. The device proceeds to standby mode when the START/STOP button is pressed for at least three seconds.
SYS	Systolic blood pressure in mmHg
DIA	Diastolic blood pressure in mmHg
PUL	Pulse per minute
	Direct current
	Serial Number
	Unique Device Identifier
	Date of manufacture
	Type BF applied part
	CE marking
	European Authorized Representative
	UK Conformity Assessed marking
	UK Responsible Person
IP	International protection symbol
	WEEE label
	Manufacturer
	Medical Device
	Refer to instruction manual/booklet *1
	Class II device
	Polarity of DC jack
	UL Recognized Component Marks for Canada and the United States
	Do Not Dissasemble
	crossed-out wheeled bin symbol
	Indoor Dry Location Use Only

Symbols	Function / Meaning
	Consult the instruction manual
	PSE Recognized Component
	Warnig-Hot surface
	Temperature limit
	Humidity limitation
	Atmospheric pressure limitation
	EU Importer
	UK Importer

*1 The symbol color: Blue

Symbols that appear on the display

Symbols	Function / Meaning	Recommended Action
	Appears while measurement is in progress. It blinks when the pulse is detected.	Measurement is in progress. Remain as still as possible.
	**I**rregular **H**eart**b**eat symbol (IHB) Appears when an irregular heartbeat is detected. It may light when a very slight vibration like shivering or shaking is detected.	Apply the cuff correctly, then take another measurement. If the  symbol continue to appear, we recommend you to consult with your physician.
	Previous measurements stored in memory.	———
	Illuminates in order from bottom when the ▲ button is pressed to add the pressurization during constant speed exhaustion at the auscultation mode	———
	Illuminates when the auscultation mode is ON.	———
	FULL BATTERY The battery power indicator during the measurement.	———
	LOW BATTERY The battery power is low when it blinks.	Recharge the device using the AC adapter.

Symbols	Function / Meaning	Recommended Action
	Illuminates when the AC adapter is connected to the device. Blinks while the battery is being recharged.	———
Err	Unstable blood pressure due to movement during the measurement.	Take another measurement. Remain still during the measurement.
	The systolic and diastolic values are within 10 mmHg from each other.	Apply the cuff correctly, and take another measurement.
	The pressure value did not increase during the inflation.	
Err CUF	The cuff is not applied correctly.	
E	PUL DISPLAY ERROR The pulse is not detected correctly.	
ErrE	Blood pressure monitor internal error	Remove the batteries and press the START/STOP button, and then install the batteries again. If the error still appears, contact the dealer.
ErrF		
Err9		
AM	Means morning when the clock function is set to 12H display.	———
PM	Means afternoon when the clock function is set to 12H display.	———
AUTO 220 250 280	Pressure settings Indicates the pressure value previously set by the user.	———
Room Temperature (°C, °F)	Means Celsius or Fahrenheit of room temperature.	———

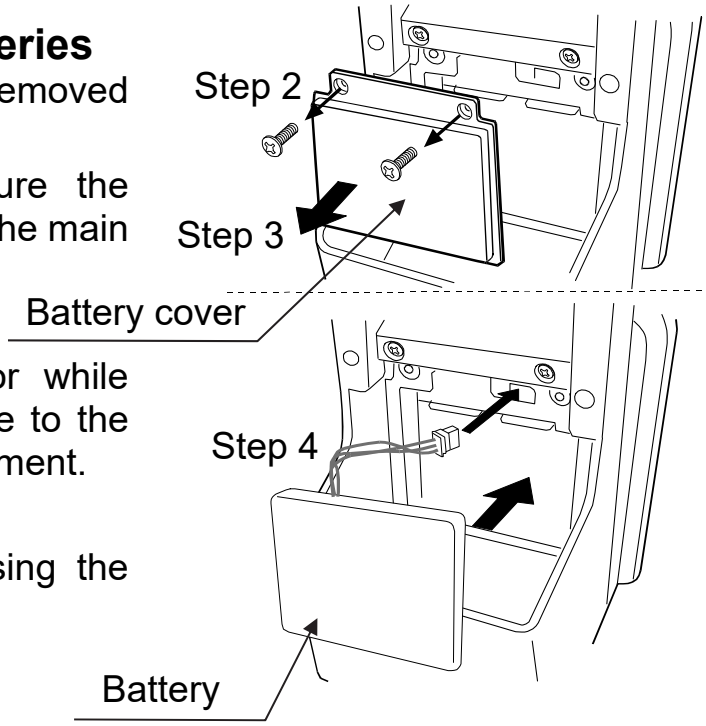
Mode list

Mode No.	Mode name	Function
F01	Pressurization value setting	A pressurization value at the blood pressure measuring can be changed.
F02	Auscultation setting	A setting about whether the auscultation measurement is carried out at the blood pressure measuring is possible.
F03	Auscultation exhaust speed changing	An exhaust speed for when the auscultation measurement is performed can be switched between “Hi” or “Lo”.
F 10	Clock setting	A current date and time can be set.
F 11	Clock display setting	A clock display can be switched between 12H or 24H.
F 12	Auto power OFF time setting	A time for timeout for when no operation is made can be switched between “5” or “10” minutes.
F 14	Room temperature unit changing	A unit for displayed room temperature can be switched between °C or °F.

Using the Monitor

Inserting / Changing the Batteries

1. Confirm that the AC adapter is removed from outlet.
2. Remove the screws that secure the battery cover on the rear side of the main body.
3. Remove the battery cover.
4. Connect the battery's connector while pushing the hook at the left side to the connector in the battery compartment.
5. Close the battery cover.
6. Secure the battery cover by using the screws.

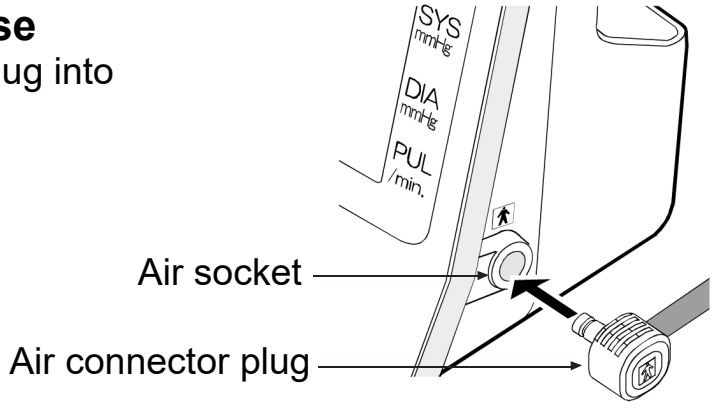


CAUTION

- ❑ When (LOW BATTERY mark) blinks on the display, recharge the battery. After the device turns off, wait a few seconds before replacing the batteries. If (LOW BATTERY mark) appears even after the battery is replaced, take a blood pressure measurement. The device may then recognize the new battery.
- ❑ (LOW BATTERY mark) does not appear when the battery is drained.
- ❑ The battery life varies with the ambient room temperature and may become shorter at low room temperatures.
- ❑ Use the specified battery only.
- ❑ Remove the battery if the device is not to be used for a long time. The battery may cause leakage and operational issues.
- ❑ Exchange the battery with new one when an operation time using the battery with this device is extremely short even after recharging.
- ❑ We recommend exchanging the battery once every two years.
- ❑ Be sure the time was reset when the battery was replaced.

Connecting the Air Hose

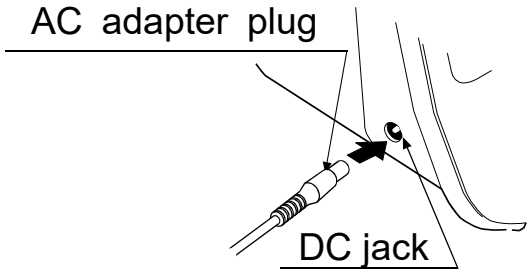
Insert the air connector plug into the air socket firmly.



Connecting the AC Adapter

Insert the AC adapter plug into the DC jack.
Next, connect the AC adapter to an electrical outlet.

❑ Use the specified AC adapter.
(Refer to page 31.)



Note: The device is operated using the battery when the power is not supplied to the main body from the AC adapter.

Recharging the Battery

- By connecting the AC adapter to the device, the recharging is started.
- The recharging completes about four hours after the AC adapter is connected to the device.
- The recharging mark (➡) blinks during recharging.
- The recharging mark continues to illuminate when completing recharging.

Note: A certain amount of time is required for the device temperature display to reach room temperature after recharging.

Operation

Standby mode

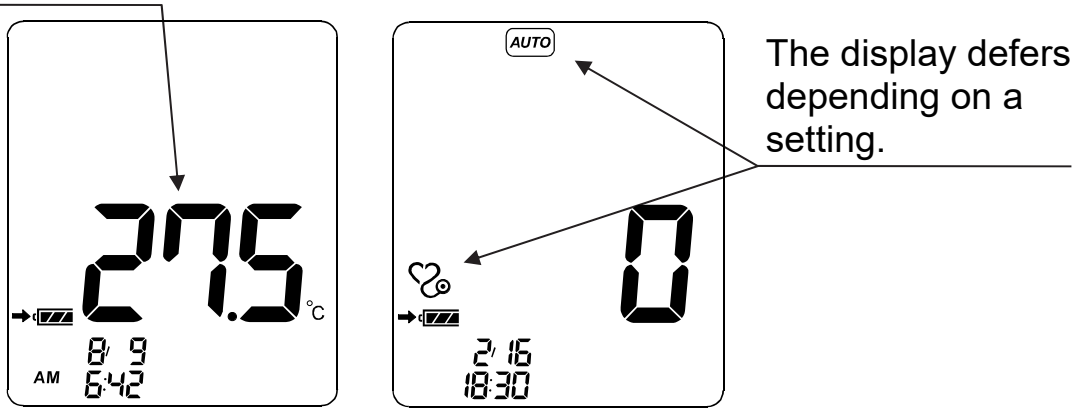
- The device goes into standby mode when the power is turned on, and a current room temperature is displayed at the display for diastolic blood pressure.
- The device proceeds to standby mode when the START/STOP button is pressed and held, or no operation is made for a regular time at all status other than blood pressure mode and auscultation mode.
- Press the ▲ or ▼ button to read out the memory.
- Press the MODE button to proceed to the pressurization value setting mode.
- Press and hold the MODE button to proceed to the clock setting mode.
- Press the START/STOP button to start the measurement.

Measurement standby mode

- The device proceeds to measurement standby mode when the auscultation mode is set to OFF at the auscultation setting mode, or the MODE button is pressed at the auscultation exhaust speed changing mode, or the measurement is stopped.
- Also, the device proceeds to measurement standby mode when the measurement is completed. In this case, the device remains measurement results displayed.
- Press the ▲ or ▼ button to read out the memory.
- Press the MODE button to proceed to the pressurization value setting mode.
- The device proceeds to the standby mode automatically after a regular time.
- Press the START/STOP button to start the measurement.

A current temperature is displayed.

The display defers depending on a setting.



Standby mode Measurement standby mode

Model UM-211 is designed to detect the pulse and to inflate the cuff to a systolic blood pressure level automatically.
If re-inflation occurs repeatedly, use the following methods.

Measurement with the SET Pressure

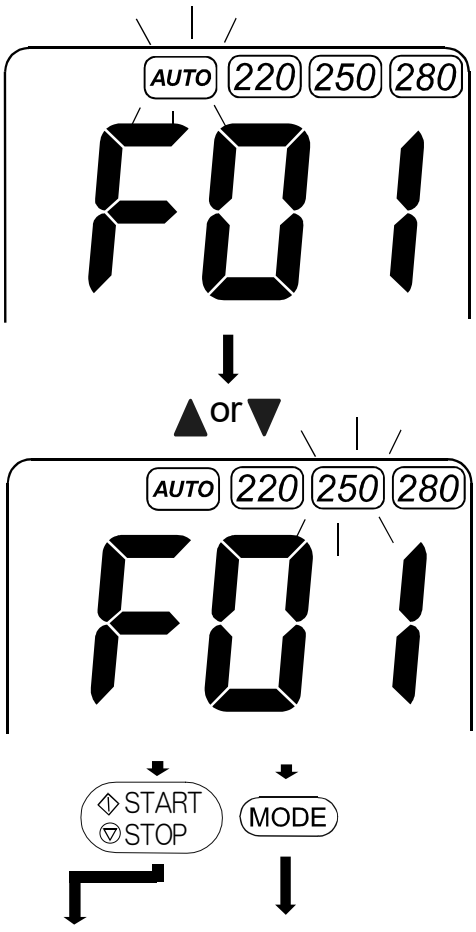
During the blood pressure measurement, re-inflation may occur.
A fixed pressure value can be set to avoid re-inflation.

1. Press the MODE button to go to the pressurization value setting mode. The current setting blinks.

2. Press the ▲ or ▼ button to select a pressure value about 30 mmHg or more above your expected systolic blood pressure from the following.

   AUTO : Automatic pressurization (default value)
   220 : Pressure value of 220 mmHg (fixed)
   250 : Pressure value of 250 mmHg (fixed)
   280 : Pressure value of 280 mmHg (fixed)

3. Press the MODE button to go to the auscultation setting mode.
   Press the START/STOP button to start the measurement. The device will proceed to standby mode automatically when no operation is made for a regular time.
   The next measurement will be performed with the new pressure value.

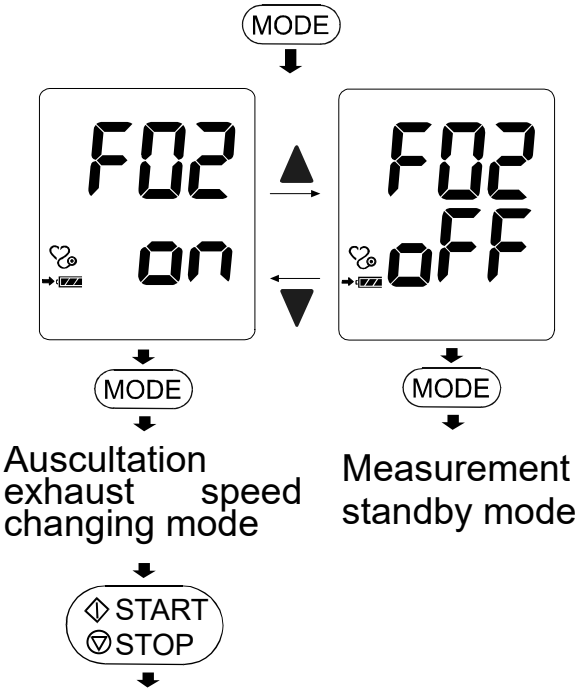


The measurement is started.

Auscultation setting mode

Auscultation setting

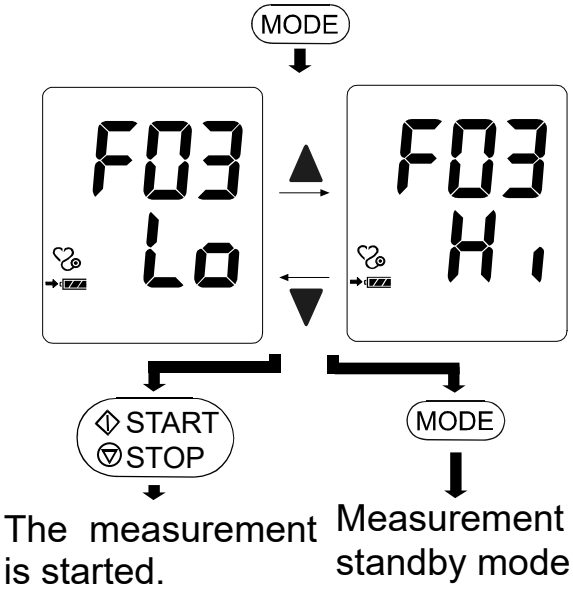
1. Press the MODE button at the pressurization setting mode to go into auscultation setting mode. The “F02” is displayed at the display for systolic blood pressure, and the current status is displayed at the display for diastolic blood pressure
2. Press to ▲ or ▼ button to switch between ON or OFF. The device illuminates the auscultation mark when the auscultation mode is set to ON.
3. Press the MODE button when the auscultation mode is set to ON to proceed to auscultation exhaust speed changing mode.
   Press the MODE button when the auscultation mode is set to OFF to proceed to measurement standby mode.
   Press the START/STOP button to start the measurement. Also, the device proceeds to standby mode automatically after a regular time.



Auscultation exhaust speed changing

Note: Select “Lo” when measuring normally. Should the patient pulse appear to be 100 or higher, measuring at the “Hi” is possible.

1. Press the MODE button at the auscultation setting mode when the auscultation setting is set to ON to go into auscultation exhaust speed changing mode.
   The “F03” is displayed at the display for systolic blood pressure, and the current status is displayed at the display for diastolic blood pressure
2. Press to ▲ or ▼ button to switch between Hi or Lo.
3. Press the MODE button to proceed to measurement standby mode.
   Press the START/STOP to start the measurement. Also, the device proceeds to standby mode automatically after a regular time.



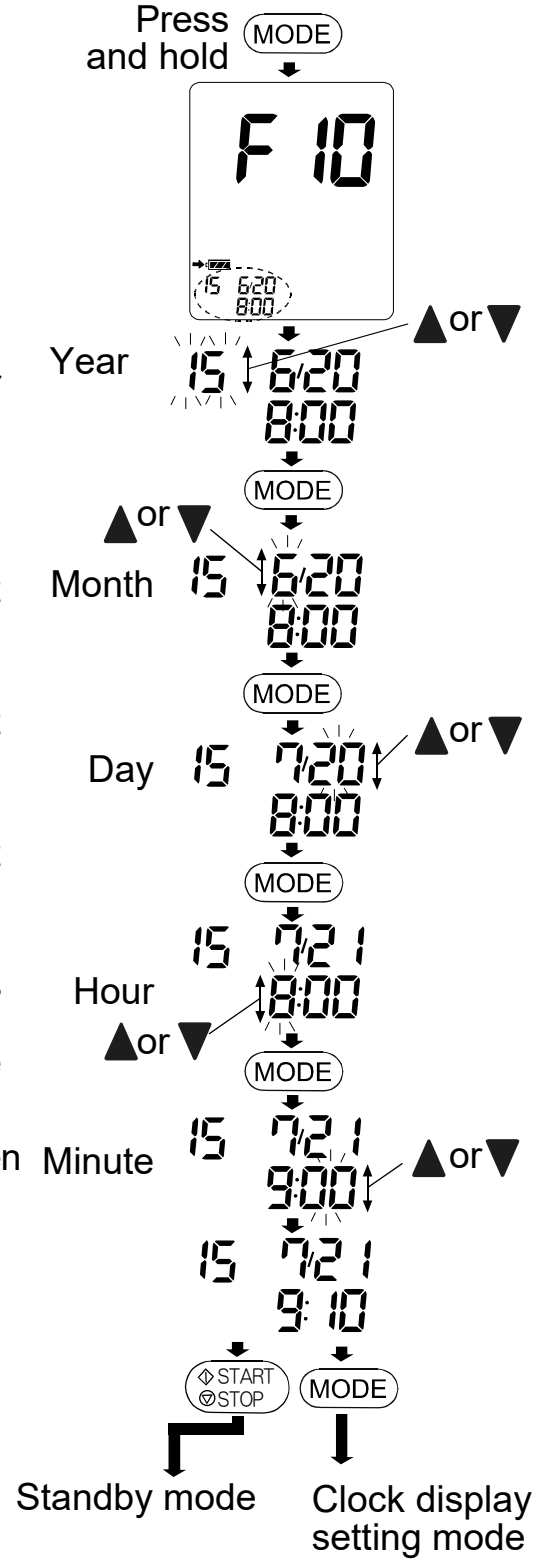
Adjusting the Built-in Clock

Adjust the clock prior to use.

1. Press and hold the MODE button at the standby mode to go into clock setting mode. The "F10" is displayed at the display for systolic blood pressure, and the far right two digits of A.D. blink.
2. Select the year using the ▲ or ▼ button. Press the MODE button to set the current year and move to month/day selection. The date can be set anywhere between the years 14 and 59.
3. Select the month using the ▲ or ▼ button. Press the MODE button to set the current month and move to day selection.
4. Select the day using the ▲ or ▼ button. Press the MODE button to set the current day and move to hour/minute selection.
5. Select the hour using the ▲ or ▼ button. Press the MODE button to set the current hour and move to minute selection.
6. Select the minute using the ▲ or ▼ button. Press the MODE button while the minute is being adjusted to proceed to clock display. Press the START/STOP button while the time is being set to proceed to standby mode.

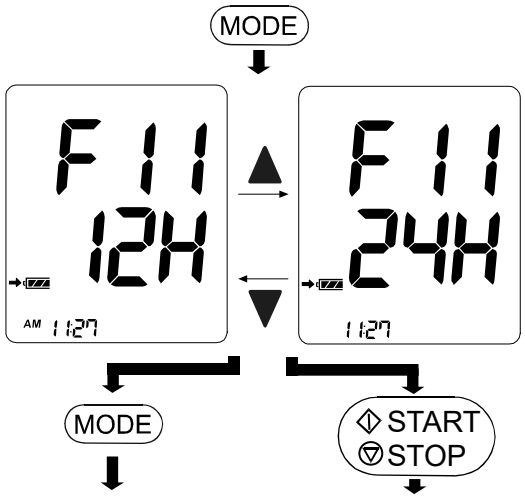
Note: The device proceeds to standby mode when no operation is made for a regular time.

❑ Holding down the ▲ or ▼ button will change the value continuously.



Clock display setting

1. Press the MODE button when the minute at the clock setting is being set to go into clock display setting mode.
   The “F11” is displayed at the display for systolic blood pressure, and the “12H” or “24H” is displayed at the display for diastolic blood pressure.
2. Press to ▲ or ▼ button to switch between 12H or 24H.
   Press the MODE button to proceed to auto power OFF time setting mode.
   Press the START/STOP button to proceed to standby mode.



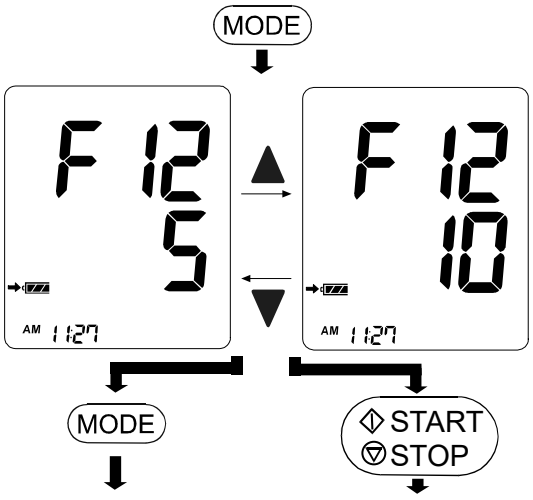
Auto power OFF time setting mode

Standby mode

Auto power OFF time setting

Set a time for timeout for when no operation is made. Either of five or ten minutes can be selected.

1. Press the MODE button at the clock display setting mode to go into auto power OFF time setting mode.
   The “F12” is displayed at the display for systolic blood pressure, and the “5” or “10” is displayed at the display for diastolic blood pressure.
2. Press to ▲ or ▼ button to switch between five or ten minutes.
3. Press the MODE button to proceed to room temperature unit changing mode.
   Press the START/STOP button to proceed to standby mode.



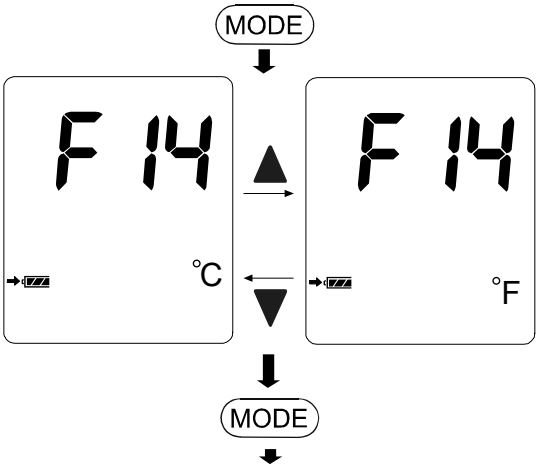
Room temperature unit changing mode

Standby mode

Room temperature unit changing

A unit for displayed room temperature can be switched between °C or °F.

1. Press the MODE button at the auto power OFF time setting mode to go into room temperature unit changing mode.
   The "F14" is displayed at the display for systolic blood pressure.
2. Press to ▲ or ▼ button to switch between °C or °F at the right end on the display to switch a unit for room temperature.
3. Press the MODE button to proceed to Pressure confirmation mode. Press the START/STOP button to complete the setting. The device proceeds to standby mode.



Pressure confirmation mode

Pressure confirmation mode

1. Press the MODE button at the temperature unit changing mode to go into pressure confirmation mode.
   The current pressure value is displayed at the display for systolic blood pressure and diastolic blood pressure.
2. When the pressure reaches 320mmHg or higher, the value indicated on the display flashes 320mmHg. After that, the display returns to previous one when the pressure display is less than 320mmHg.
3. Press the MODE button to proceed to clock setting mode. Press the START/STOP button to complete the confirmation. The device proceeds to standby mode.

Clock setting mode

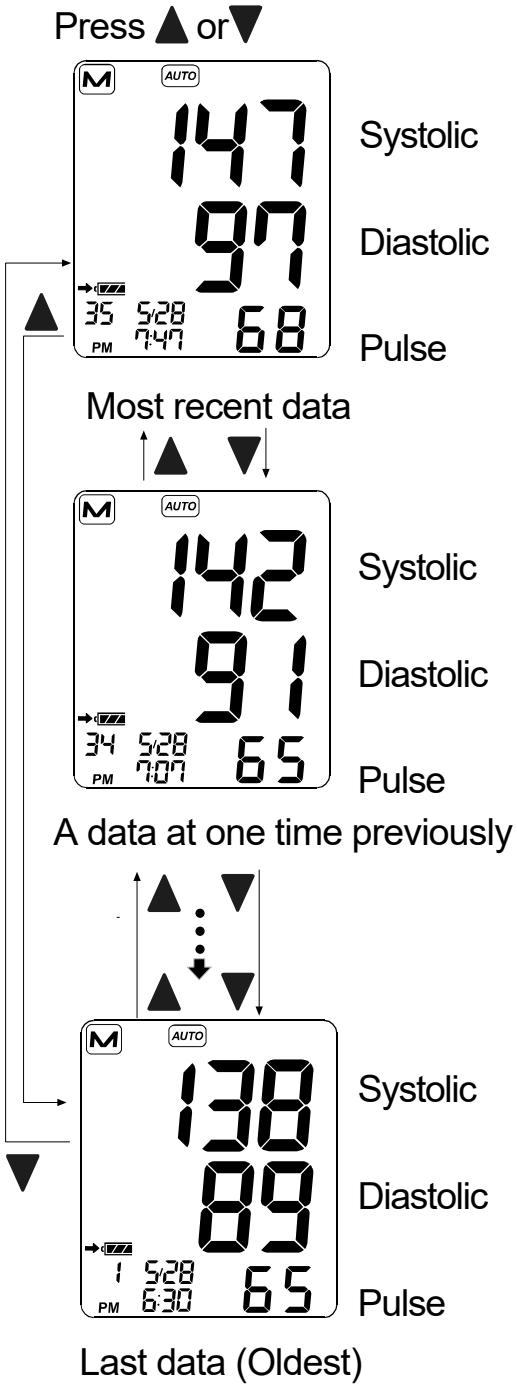
Recalling the Memory Data

Note: This device stores the last 99 measurements in memory.

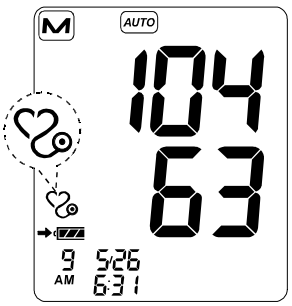
Recalling the Memory Data

1. Press the ▲ or ▼ button to display a most recent memory data.
   If no data, the memory number, time, SYS, DIA and PUL is displayed in bar display. Press the START/STOP button to carried out the measurement.
2. Each time the ▼ button (or the ▲ button to display the data in the reverse order) is pressed, the memory data is displayed as follows.

   Most recent data (No.n, in the example, No.35)
   The measurement data is displayed.
   ⋮
   Last data (No.1)
   The measurement data is displayed.
3. After the last data is displayed, press the ▼ button to display the most recent data.
4. Press the START/STOP button to carried out the measurement. The device will proceed to standby mode automatically when no operation is made for a regular time.



When the auscultation measurement is carried out and was completed, the device displays the auscultation mark and measurement results without displaying a pulse rate as shown in the figure at the right.

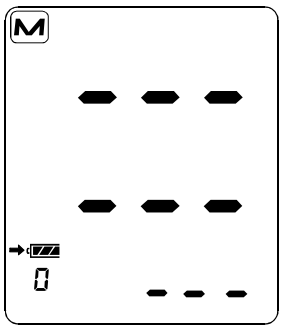


Deleting all Data Stored in Memory

Press and hold the MODE button for at least three seconds to illuminate the M and battery mark only.

Again press and hold the MODE button for at least three seconds to delete the saved data all.

The device shows a display as shown in the figure at the right when the ▲ or ▼ button is pressed when there is no memory data in the device.



Measurements

Selecting the Correct Cuff Size

Using the correct cuff size is important for an accurate reading. If the cuff is not the proper size, an incorrect blood pressure value may be displayed.

- ❑ The arm size is printed on each cuff.
- ❑ The arm cuff is a consumable. If it becomes worn, purchase a new one.

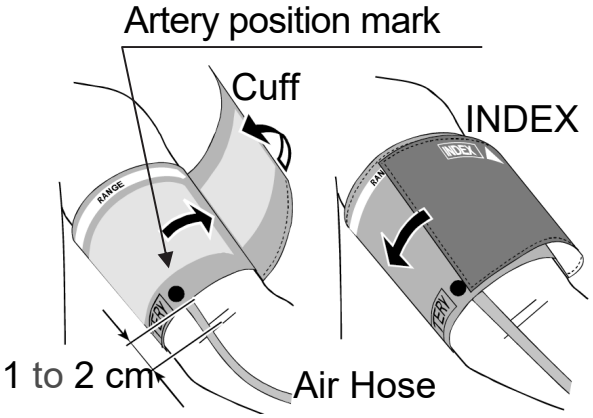
Arm Size	Cuff Size	Symbols	Catalog Number
41cm to 50cm	LL Cuff	LL	UM-LLRS4K1KEC
31cm to 45cm	LA Cuff	LARGE ADULT	UM-LARS4K1KEC
22cm to 32cm	A Cuff	ADULT	UM-AURS4K1KEC
16cm to 24cm	SA Cuff	SMALL ADULT	UM-SARS4K1KEC
12cm to 17cm	SS Cuff	SS	UM-SSRS4K1KEC

Arm size: The circumference of an upper arm.

Applying the Arm Cuff

1. Face the palm of the left arm upward, and wrap the cuff around the upper arm, about 1 to 2 cm above the inside of the elbow.
   A range where the INDEX mark can be overlapped on the RANGE mark shows a proper fit range for the cuff.
2. Apply the cuff on the upper arm so that the ● mark overlaps the artery.
3. Wrap while keeping the looseness with the cuff around the upper arm so that it allows the one or two fingers to insert between the cuff and arm.

Do not roll up shirtsleeve tightly.



Printing contents with the cuff

Symbols	Descriptions
REF	Means a code for when ordering the cuff to the manufacture.
▲ INDEX	Index symbol Means the symbol for showing that the cuff is wrapped in a proper fit range if this symbol is within the RANGE line.
ARTERY●	ARTERY symbol Place this symbol on the artery at the upper arm or thigh.
CE	CE marking
LOT	Means the symbol for showing a lot number for when manufacturing. The lot number is printed by the carved seal around this mark.
RANGE	RANGE symbol The index symbol with the cuff should be in a range of this symbol.
~~LATEX~~	Latex free

	Refer to instruction manual/booklet *1
	Cuff Wrap position
	Means the symbol for suggestions on operation.
THIS SIDE TO PATIENT	Means the symbol for the patient side.
ADULT	Symbol for the cuff size.
MD	Medical Device

*1 The symbol color: Blue

Normal Measurement

1. Apply the cuff on the arm.
   Sit quietly during the measurement.

2. Press the START/STOP button.
   All of the display segments are displayed.
   Zero (0) is displayed blinking briefly.
   The display changes, as indicated in the figure on the right, as the measurement begins. The cuff starts to inflate. It is normal for the users to feel tight.

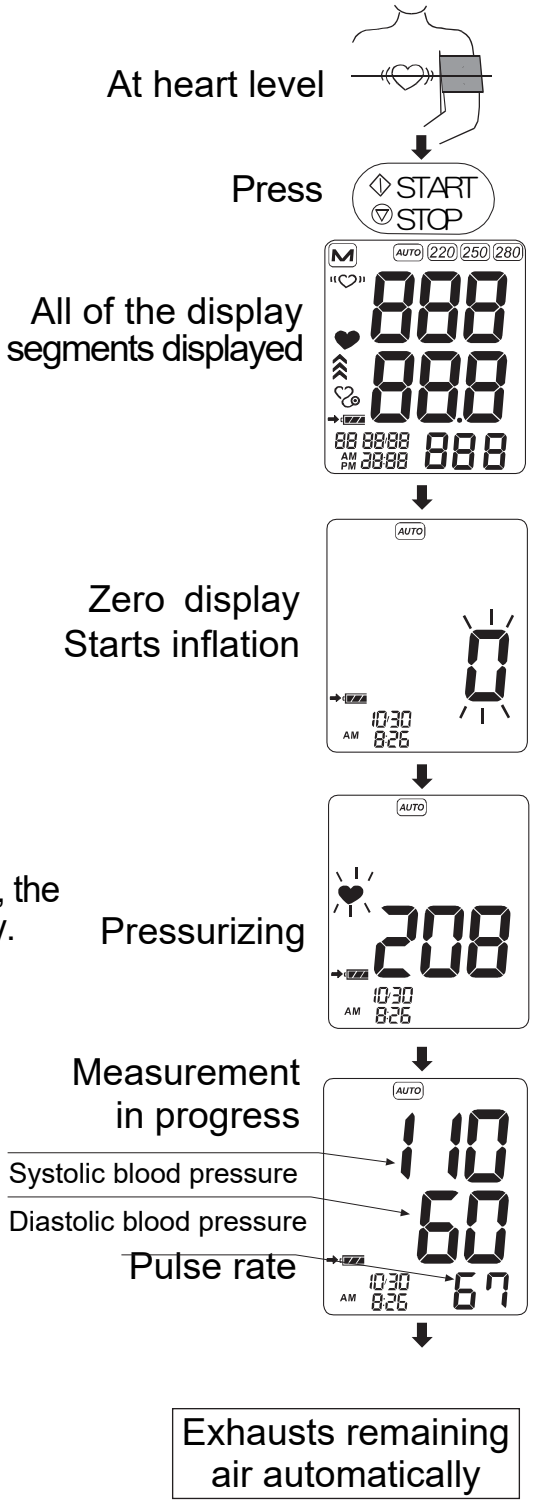
   Note: If you want to stop inflation at any time, press the START/STOP button again.

3. When inflation is completed, deflation starts automatically and the ♥ (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. To avoid re-inflation, see "Measurement with the SET Pressure" on the next page.

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

5. Press the START/STOP button to carry out the measurement again.
   The device will proceed to standby mode automatically when no operation



is made for a regular time.

Auscultation measurement

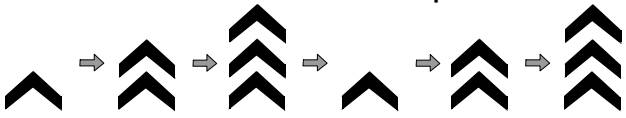
The auscultation measurement is performed when the auscultation setting mode is set to ON. Also, Press the START/STOP button while pressing the MODE button to perform the auscultation measurement.

The auscultation measurement is returned to OFF automatically when the device goes into standby mode.

1. Press the START/STOP button to start pressurization. When conditions for the pressurization to be completed will be arranged, the device starts the constant speed exhaustion after completing pressurization.
2. The device exhausts at constant speed. Press the MODE button to confirm the systolic blood pressure value. Press the MODE button again to confirm the diastolic blood pressure value, and the device exhausts at quick speed.
3. Press the ▲ button during exhausting at constant speed to perform the additional pressurization while the ▲ button is being pressed. The additional pressurization mark illuminates in order from bottom during the additional pressurization. When additional pressurization is applied up to the systolic blood pressure value or more, the systolic blood pressure value is cleared.

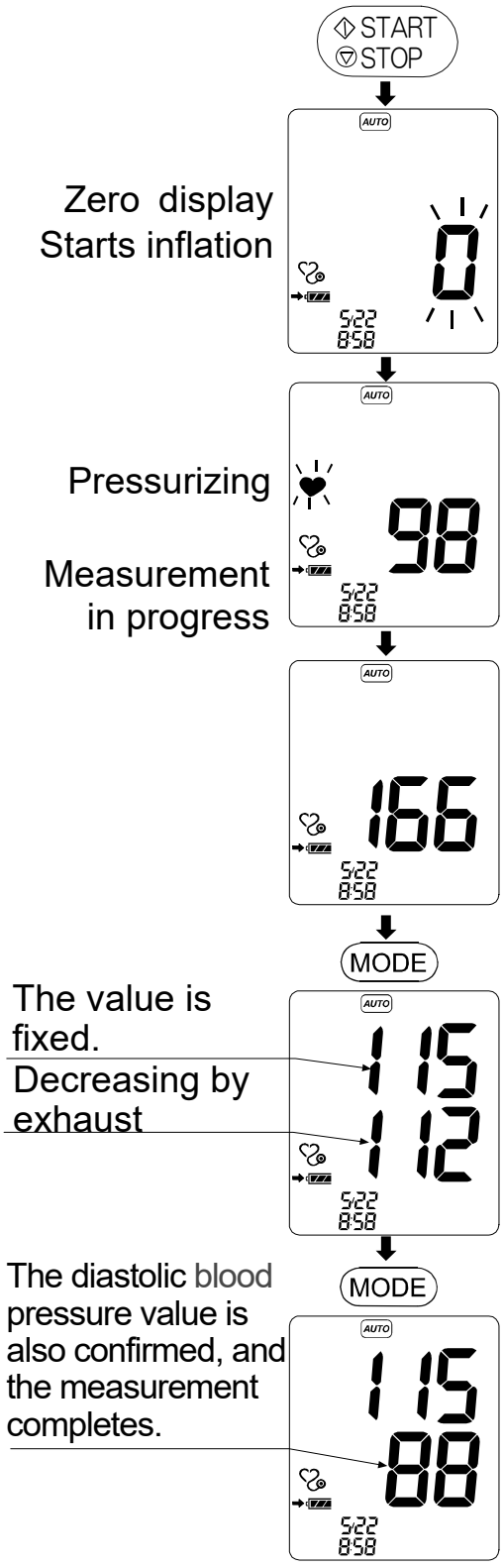
   Note: When the device is pressured at 300mmHg or more, the device performs forced exhaust automatically.

   A mark for the additional pressurization



4. Press the START/STOP button after measuring to carry out the auscultation measurement again.

   Note: Allow at least three minutes between measurements on the same person.



After Measurement

After measurement, the device proceeds to the standby mode when the START/STOP button is pressed and held (Three seconds). The device will proceed to the standby mode automatically when no operation is made for a regular time.

Remove the cuff and the readings will be recorded.

Notes for Accurate Measurement

- ❑ Let a patient sit down in a comfortable position. Confirm that the patient does not cross their legs, that their feet touch the floor (if possible), and that their back and the arm being measured are supported. Let a patient place the arm on a table with the palm facing upward and the cuff at the same level as patient's heart.
- ❑ Let a patient relax for about five to ten minutes before taking the measurement. If a patient is excited or depressed by emotional stress, the blood pressure reading may be higher (or lower) than a normal blood pressure reading and the pulse rate will usually be faster than normal.
- ❑ An individual's blood pressure varies constantly, depending on what a patient is doing and what a patient has eaten. What a patient drinks may have a strong and rapid effect on patient's blood pressure.
- ❑ This device bases its measurements on the heartbeat. If a patient has a weak or irregular heartbeat, the device may have difficulties determining patient's blood pressure.
- ❑ If the device detects a condition that is abnormal, it will stop the measurement and the error symbol will be displayed. Refer to pages 9 to 10 for the description of symbols.
- ❑ The blood pressure measurement may be affected by cuff position, patient's posture (standing, sitting or supine), exercise or physiological conditions.
- ❑ The automatic blood pressure monitor's performance may be affected by extreme temperature, humidity, impact, or altitude.

For the auscultation measurement

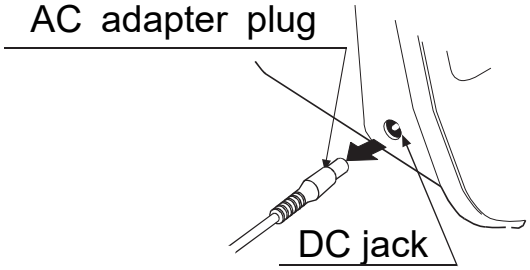
- ❑ K5 is recommended for the auscultation measurement in adults.
- ❑ K4 is recommended for the auscultation measurement in children aged 3 to 12 years.
- ❑ K5 is recommended for the auscultation measurement in pregnant women, however, K4 should be used if the sounds can be heard even with the cuff deflated.

❑ During the auscultation measurement, the operator should be in a position where the pressure value is clearly visible

Note: K5 is the point at which the Korotkoff sounds can no longer be heard. K4 is the point at which the Korotkoff sounds changed in the tones heard through a stethoscope from a clear tapping sound to a muffled sound.

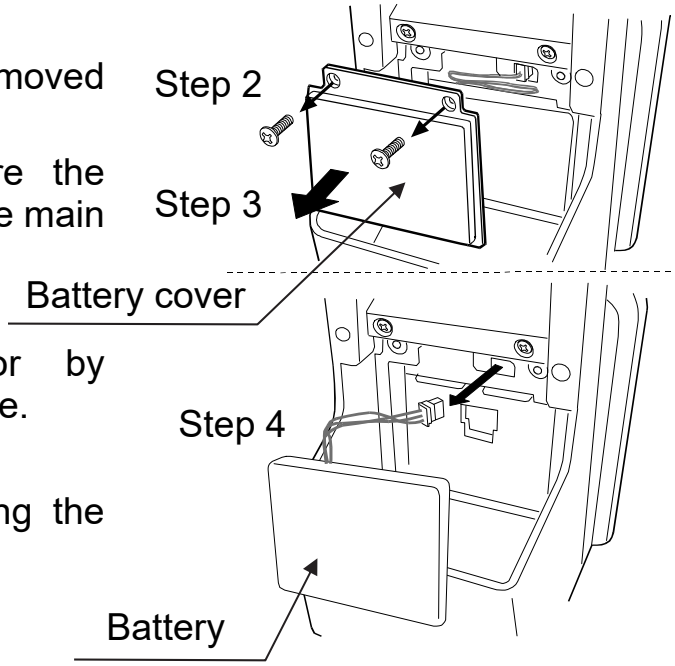
Unplug the AC adapter

Unplug the AC adapter from the outlet.
Unplug the AC adapter plug from the DC jack.



Removing the battery

1. Confirm that the AC adapter is removed from outlet.
2. Remove the screws that secure the battery cover on the rear side of the main body.
3. Remove the battery cover.
4. Unplug the battery connector by depressing the hook on the left side.
5. Close the battery cover.
6. Secure the battery cover by using the screws.



Note: Should both the AC adapter and battery be disconnected from the device, the clock is initialized.

What is an Irregular Heartbeat

The UM-211 blood pressure monitor provides a blood pressure and pulse rate measurement even when an irregular heartbeat occurs. A heartbeat that fluctuates by a certain amount more than the average of all heartbeats during blood pressure measurement is called an irregular heartbeat.

Troubleshooting

Problem	Possible Cause	Suggestion
Nothing appears on the display, even when the power is turned on.	Battery is drained.	Recharge the battery.
	Useful life for the battery was over.	Replace the old battery with new one.
The cuff does not inflate.	Battery power is too low. (LOW BATTERY mark) blinks. If the battery is drained completely, the mark does not appear.	Recharge the battery.
The device does not measure. Readings are too high or too low.	The cuff is not applied properly.	Apply the cuff correctly.
	Movement is detected	Make sure patient remain still and quiet during the measurement.
	The cuff position is not correct.	Sit comfortably and still. Place patient's arm on a table with patient's palm facing upward and the cuff at the same level as patient's heart.
	———	If patient have a very weak or irregular heartbeat, the device may have difficulties in determining patient's blood pressure.
The battery runs out soon even after recharging the battery.	The battery has exhausted.	Replace the old battery with new one.
Other	———	Remove the batteries. Put them back properly and take another measurement.

Note: If the suggestions described above do not solve the problem, contact the authorized dealer. Do not attempt to open or repair this product, otherwise your warranty may be invalid.

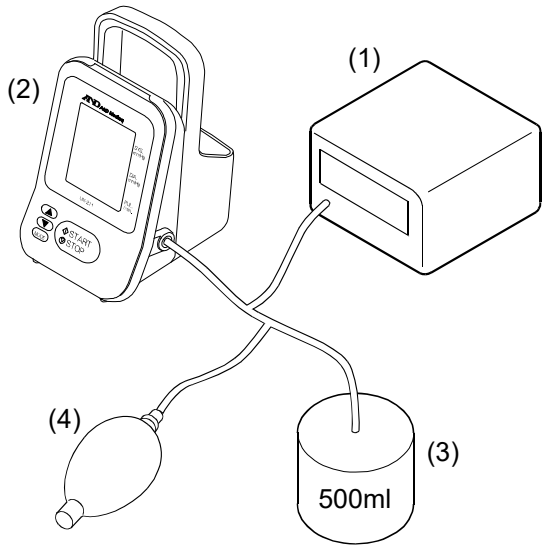
Maintenance

Maintenance

Do not attempt to open the device as the delicate electrical components and intricate air unit inside could be damaged. If you cannot solve the problem using our troubleshooting guide, request assistance from your authorized dealer or from any A&D service group.
The device is designed and manufactured for a long service life. However, it is generally recommended to have the device inspected every 2 years, to ensure proper functioning and accuracy. Please contact either your authorized dealer or A&D for maintenance.

Pressure confirmation

• Example of connection



(1) Calibrated pressure gauge
(2) UM-211
(3) Tank : 500ml
(4) Pressure generating device

1. Press and hold the MODE button at standby mode. The device goes into the built-in clock adjusting mode, and F10 is displayed at the display.

2. Press the MODE button several times to proceed to pressure confirmation mode.
   * Refer to the page 19 in this manual for its setting.

3. Add the pressure using the pressure generating device once the display at the UM-211 became **0** **0**, and confirm the pressure at the pressure gauge and UM-211.

Cleaning

- ❑ Remove the AC adapter from the device when cleaning the device.
- ❑ When the main body or cuff is dirty, gauze or cloth dipped in warm water and neutral detergent, wring well, and wipe off dirt completely.
- ❑ Do not use the moisten cloth etc. to wipe the DC jack and air socket. The DC jack and air socket must remain dry.
- ❑ To prevent a risk due to infection, disinfect the main body and cuff regulary. When disinfecting them, wipe them gently by using the gauze or dampened cloth with local antiseptic solution then wipe the moisture off the surface by using a dry soft cloth.
- ❑ Use the following disinfectants to clean the main body and cuff cover.

Disinfectants	Main body	Cuff cover
Ethanol (76.9-81.4%)	✓	✓
Isopropanol (70%)	✓	✓
Chlorhexidine Gluconate Solution (0.5%)	✓	✓
Benzalkonium Chloride Solution (0.1%)	✓	✓
Sodium Hypochlorite (0.05%)	✓	unavailable

  - Wipe lightly after squeezing the gauze soaked in the antiseptic solution.
  - After that, wipe off the antiseptic solution with gauze that has been soaked in water or lukewarm water and squeezed well.
    And wipe off the moisture with a soft, dry cloth.
  - After that, dry it thoroughly before use.
  - For the dilution rate, follow the instructions on the product's precautionary statement and use it as an aqueous solution.

- ❑ Clean the device about once every month, basing on a policy or instruction specified in the hospital or clinic.

CAUTION

- ❑ The blood pressure monitor is not waterproof device. Do not splash water on it and avoid exposure to moisture.
- ❑ Do not use a organic solvent such as thinner or benzine.
- ❑ The blood pressure monitor can not be sterilized by autoclave, EOG or formaline gas etc.

Regular inspection

- ❑ The blood pressure monitor is a precision device. Therefore, inspect it regularly. Request an inspection from the dealer where you have purchased the device when the device is in need of an inspection.
- ❑ The cuff is consumable. Regularly exchange the cuff with new one.

Disposal

This equipment and battery are not treated as ordinary household waste and must be disposed of according to the applicable local regulations.

Item	Parts	Material
Package	Box	Cardboard
	Cushion	Cardboard
	Bag	PE
Main unit and accessories	Enclosure	ABS, SR
	Internal parts	General electronic components
Battery pack	Outer case	ABS
	Cell battery	Nickel-hydrogen battery
	Internal parts	General electronic components

Technical Data

Type	UM-211
Measurement method	Oscillometric measurement
Measurement range	Pressure: 0 - 299 mmHg Systolic blood pressure: 60 - 279 mmHg Diastolic blood pressure: 40 - 200 mmHg Pulse: 40 - 200 beats / minute
Measurement accuracy	Pressure: ±3 mmHg Pulse: ±5%
Temperature unit	°C or °F
Temperature accuracy	±2.5°C (+5°C to +40°C)
Power supply	Built-in 3.6V battery (UM-211-30) or AC adapter (TB-268)
Number of measurements	Approx. 300 measurements, when built-in battery is used, with pressure value of 180 mmHg at room temperature of 23°C
Classification	Internally powered ME equipment (Supplied by batteries) / Class II (Supplied by adapter) Continuous operation mode
Clinical test	According to ISO81060-2: 2018+A1: 2020
EMD	IEC 60601-1-2: 2014+A1: 2020
Memory	Last 99 measurements
Operating condition	+5°C to +40°C / 10%RH to 85%RH (Not condensed) 800 hPa to 1060 hPa
Transport / Storage conditions	-20°C to +60°C / 10%RH to 95%RH (Not condensed) 700 hPa to 1060 hPa
Dimensions	Approx. 120 [W] x 200 [H] x 140 [D] mm
Weight	Approx. 550 g, excluding the battery
Ingress protection	Device: IP21
Applied part	Cuff Type BF 
Useful life	Device: 5 years Cuff: 1 year or 30000 times AC adapter: 5 years

Contents *2	1 Blood Pressure Monitor, 1 Instruction Manual 1 Cuff, 1 Battery, 1 AC adapter, 1 AC cable
Rechargeable Battery (UM-211-30)	Nickel-Metal Hydride Battery 3.6V Typ.2000mAh Min.1750mAh
AC adapter (TB-268)	The AC adapter is required to be inspected or replaced periodically. Input: 100-240V, 50-60 Hz, 0.3 A Output: 6V ⎓ 2000mA

Accessories sold separately

Cuff

Arm Size	Cuff Size	Catalog Number
41cm to 50cm	LL Cuff	UM-LLRS4K1KEC
31cm to 45cm	LA Cuff	UM-LARS4K1KEC
22cm to 32cm	A Cuff	UM-AURS4K1KEC
16cm to 24cm	SA Cuff	UM-SARS4K1KEC
12cm to 17cm	SS Cuff	UM-SSRS4K1KEC

Rechargeable battery

Catalog Number
UM-211-30

Support mobile

Catalog Number
UM-ST002

*2: Confirm that all of the parts are included to ensure that the medical device is ready to perform safely and as intended.

Note: Specifications are subject to change without prior notice.
IP classification is the degrees of protection provided by enclosures in accordance with IEC 60529. This monitor is protected against solid foreign objects of 12 mm diameter and greater such as a finger. This monitor is protected against vertically falling drop of water.

EMD Technical Data Battery-operated or AC Adapter-operated Blood Pressure Monitor

Medical Electrical Equipment needs special precautions regarding EMD and needs to be installed and put into service according to the EMD information provided in the following.
Portable and mobile RF communication equipment (e.g. cell phones) can affect Medical Electrical Equipment.
The use of accessories and cables other than those specified may result in increased emissions or decreased immunity of the unit.

Table 1 －EMISSION Limits－

Phenomenon		Compliance
Conducted and radiated RF EMISSION	CISPR 11	Group 1, Class B
Harmonic distortion	IEC 61000-3-2	Class A
Voltage fluctuations and flicker	IEC 61000-3-3	Compliance

Table 2 －IMMUNITY TEST LEVELS：Enclosure Port－

Phenomenon	IMMUNITY TEST LEVELS
Electrostatic discharge IEC 61000-4-2	±8 kV contact ±2 kV, ±4 kV, ±8 kV, ±15 kV air
Radiated RF EM fields IEC 61000-4-3	10 V/m 80 MHz - 2.7 GHz 80 % AM at 1 kHz
Proximity fields from RF wireless communications equipment IEC 61000-4-3	See table 4
Rated power frequency magnetic fields IEC 61000-4-8	30 A/m 50 Hz or 60 Hz
Proximity magnetic fields IEC 61000-4-39	See table 5

Table 3 －IMMUNITY TEST LEVELS：Input a.c. power Port－

Phenomenon		IMMUNITY TEST LEVELS
Electrical fast transients / bursts	IEC 61000-4-4	±2 kV 100 kHz repetition frequency
Surges Line-to-line	IEC 61000-4-5	±0.5 kV, ±1 kV
Conducted disturbances induced by RF fields	IEC 61000-4-6	3 V 0.15 MHz - 80 MHz 6 V in ISM and amateur radio bands between 0.15 MHz and 80 MHz 80 % AM at 1 kHz
Voltage dips		0 % U_T; 0.5 cycle At 0°, 45°, 90°, 135°, 180°, 225°, 270°, and 315°
	IEC 61000-4-11	0 % U_T; 1 cycle And 70 % U_T; 25/30 cycle Single phase: at 0°
Voltage interruption	IEC 61000-4-11	0% U_T; 250/300 cycle
NOTE U_T is the AC mains voltage prior to application of the test level.		

Table 4 －Test specifications for ENCLOSURE PORT IMMUNITY to RF wireless communications equipment－

Test frequency (MHz)	Band (MHz)	Service	Modulation	Maximum power (W)	Distance (m)	IMMUNITY TEST LEVEL (V/m)
385	380 - 390	TETRA 400	Pulse modulation 18 Hz	1.8	0.3	27
450	430 - 470	GMRS 460 FRS 460	FM ±5 kHz deviation 1 kHz sine	2	0.3	28
710	704 - 787	LTE Band 13,17	Pulse modulation 217 Hz	0.2	0.3	9
745						
780						
810	800 - 960	GSM 800/900 TETRA 800 iDEN 820 CDMA 850 LTE Band 5	Pulse modulation 18 Hz	2	0.3	28
870						
930						
1720	1700 - 1990	GSM 1800 CDMA 1900 GSM 1900 DECT LTE Band 1,3,4,25 UMTS	Pulse modulation 217 Hz	2	0.3	28
1845						
1970						
2450	2400 - 2570	Bluetooth WLAN 802.11 b/g/n RFID 2450 LTE Band 7	Pulse modulation 217 Hz	2	0.3	28
5240	5100 - 5800	WLAN 802.11 a/n	Pulse modulation 217 Hz	0.2	0.3	9
5500						
5785						

Table 5 －Test specifications for ENCLOSURE PORT IMMUNITY to proximity magnetic fields－

Test frequency	Modulation	IMMUNITY TEST LEVEL(A/m)
30 kHz	CW	8
134.2 kHz	Pulse modulation 2.1 kHz	65
13.56 MHz	Pulse modulation 50 kHz	7.5

MEMO

A&D Company, Limited
1-243 Asahi, Kitamoto-shi, Saitama-ken 364-8585 Japan
Telephone: [81] (48) 593-1111 Fax: [81] (48) 593-1119

EC REP **Emergo Europe B.V.**
Westervoortsedijk 60, 6827 AT Arnhem, The Netherlands

UK REP **A&D INSTRUMENTS LIMITED**
Unit 24/26 Blacklands Way, Abingdon Business Park, Abingdon, Oxfordshire, OX14 1DY, United Kingdom
Telephone: [44] (1235) 550420 Fax: [44] (1235) 550485

A&D Engineering, Inc.
4622 Runway Boulevard, Ann Arbor, MI 48108 USA
Telephone: [1] (888) 726-9966

A&D AUSTRALASIA PTY LTD
32 Dew Street, Thebarton, South Australia 5031, AUSTRALIA
Telephone: [61] (8) 8301-8100 Fax: [61] (8) 8352-7409

OOO A&D RUS ООО "ЭЙ энд ДИ РУС"
121357, Российская Федерация, г.Москва, ул. Верейская, дом 17
(Business-Center "Vereyskaya Plaza-2" 121357, Russian Federation, Moscow, Vereyskaya Street 17)
тел.: [7] (495) 937-33-44 факс: [7] (495) 937-55-66

A&D Technology Trading (Shanghai) Co. Ltd 爱安德技研贸易（上海）有限公司
中国 上海市自由贸易试验区浦东南路 855 号世界广场 32 楼 C,D 室 邮编 200120
(32CD, World Plaza, No.855 South Pudong Road,China (Shanghai) Pilot Free Trade Zone, 200120, China)
电话: [86] (21) 3393-2340 传真: [86] (21) 3393-2347

A&D INSTRUMENTS INDIA PRIVATE LIMITED ऐ&डी इन्स्ट्रूमेन्ट्स इण्डिया प्रा० लिमिटेड
509, उद्योग विहार , फेस -5, गुड़गांव - 122016, हरियाणा , भारत
(509, Udyog Vihar, Phase-V, Gurgaon - 122 016, Haryana, India)
फोन : 91-124-4715555 फैक्स : 91-124-4715599

Auto Control Médical an A&D Company / une compagnie A&D
6695 Millcreek Drive, Unit 6 Mississauga, Ontario L5N 5R8 Canada
Telephone: 1-800-461-0991

CE 2797 UKCA 0086