

OMRON M4-1



Instruction manual
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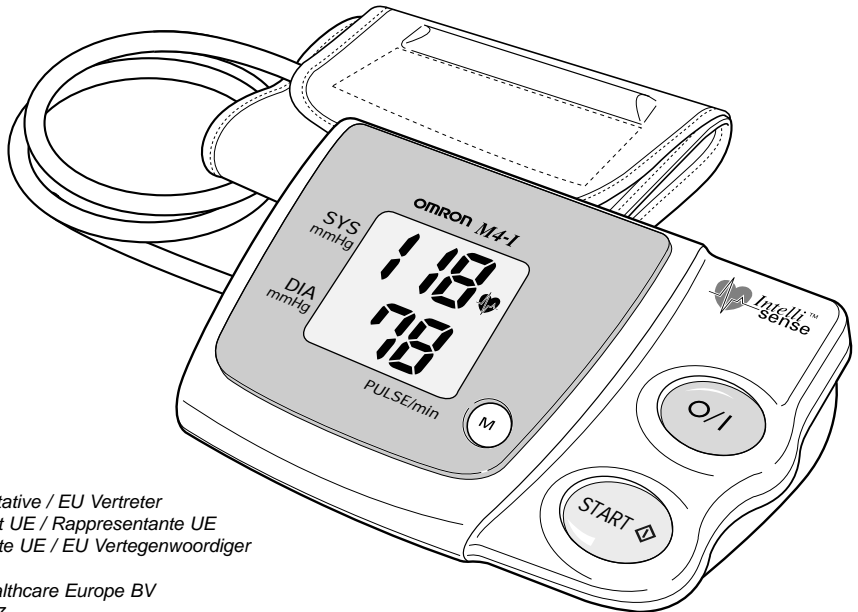
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EU representative / EU Vertreter
Représentant UE / Rappresentante UE
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Fully automatic blood pressure monitor

M4-1 Int-5-1

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Dear Customer

Thank you for purchasing an OMRON product. You can be sure you have made a wise choice. By buying the OMRON M4-I blood pressure monitor, you have chosen a high-quality, innovative instrument for health monitoring. During its development, particular emphasis was placed upon reliability and ease of use. **Before using for the first time, please read through this manual carefully.** If you should still have any questions regarding its use, please contact the OMRON customer service at the given address on the packaging. They will be pleased to help you.

Best wishes for a healthy future.
Yours sincerely,

OMRON HEALTHCARE

Regular blood pressure monitoring is essential for the prevention, the control and the management of hypertension. It also helps to support the doctors' work.

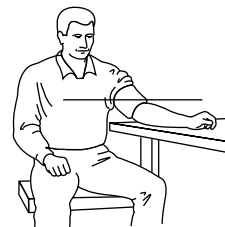
The World Hypertension League is a world-wide association of experts specialising in hypertension. The World Hypertension League recommends regular blood pressure monitoring by doctors and patients with clinically validated devices.

As the worlds leading manufacturer OMRON provides a range of products for regular blood pressure monitoring.



The World Hypertension League recommends regular blood pressure monitoring by doctors and patients with clinically validated devices

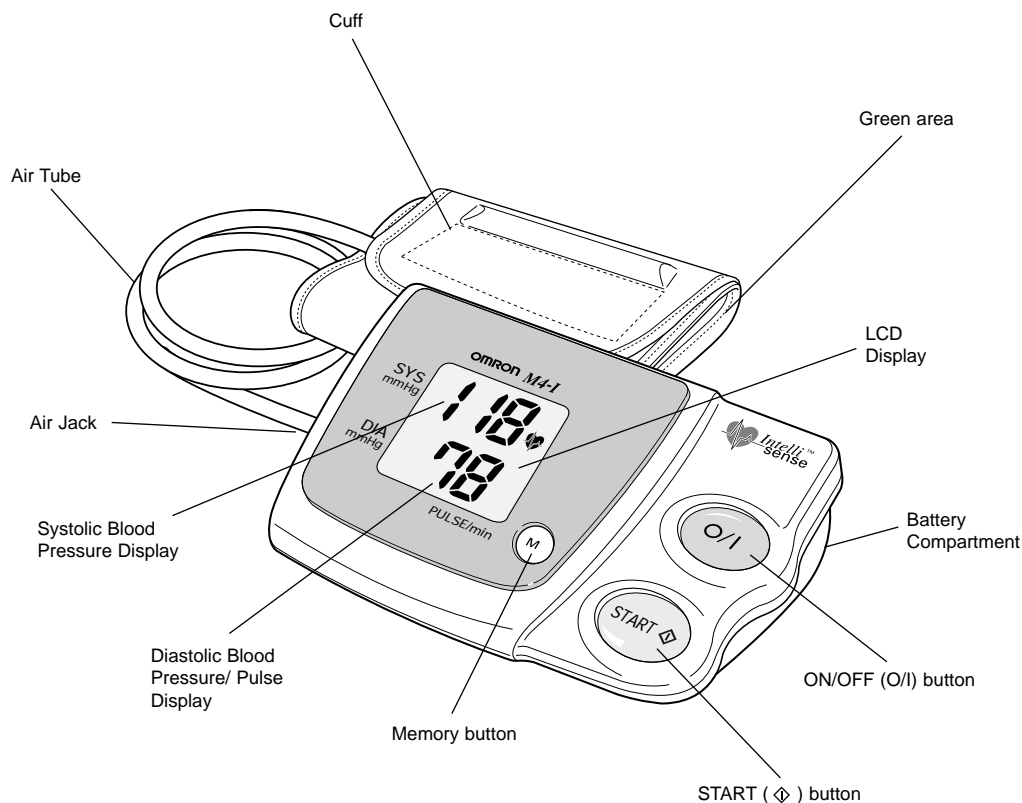
Important instructions to help you obtain meaningful readings



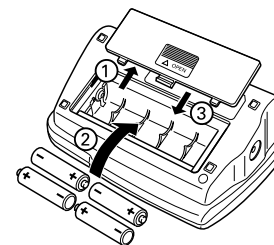
- **Important:** Blood pressure measurement is not suitable in cases of serious arteriosclerosis (hardening of the arteries).
- The pulse display is not suitable for monitoring the frequency of cardiac pacemakers.
- If you suffer from disorders of heart rhythm, known as arrhythmia, you should only use this blood pressure monitor in consultation with your doctor. In certain cases the oscillometric measuring method can produce incorrect readings.
- Pregnant women should only measure their own blood pressure in consultation with their doctor, since the readings may be changed by pregnancy.
- You should avoid eating, drinking (alcohol), smoking and sports before measuring your blood pressure, as this could affect your blood pressure level.
- Don't move, don't speak while measurement is being taken.
- Make yourself comfortable in a chair and relax before each reading.
- We recommend that you monitor your blood pressure twice a day, in the morning after getting up and in the evening after work, or as advised by your doctor.
- **Please remember: Self-measurement is not the same as medical treatment! You should never change the dose of medicines prescribed by your doctor.**

Your blood pressure monitor: the benefits

OMRON M4-I is a compact, fully automatic blood pressure monitor. Monitor, operating on the oscillometric principle. It measures your blood pressure and pulse simply and quickly. It contains an intelligent "fuzzy logic" system for controlled inflation, known as "Intelli-sense". This is an advanced method of oscillometric measurement. and does not require pressure pre-setting or re-inflation. OMRON is the world leading manufacturer of blood pressure monitors with the goal to always fulfill the need for reliable regular monitoring.



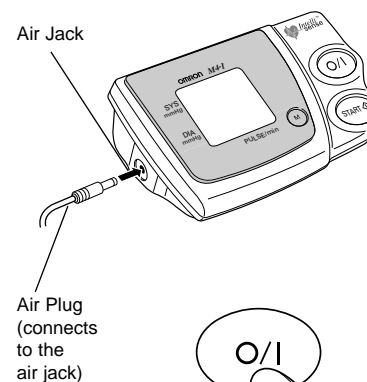
Measuring your blood pressure



1 Preparing the unit

Open the battery compartment and insert 4 x 1.5v batteries (supplied). Ensure polarity (+/-) of the batteries is correct.

Insert air tube to air jack (on the left side of the device). The cuff must be airless.

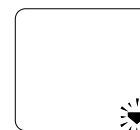
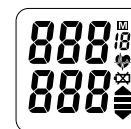
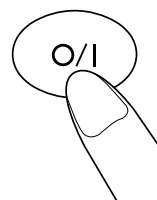


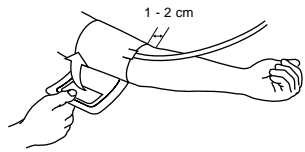
2 Switching on the unit

When you press the (O/I) button all the symbols on the display light up for approximately two seconds in order to check the display.

Then all the symbols disappear and the air release symbol (♥) begins to flash.

When preparations for measurement are complete the (♥) symbol appears in the display to indicate that the monitor is ready to take a blood pressure measurement.





3 Fitting the cuff

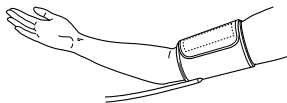
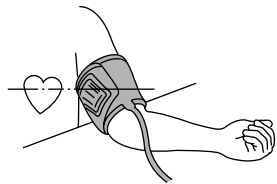
Wrap the cuff around your **bare** left arm so that the green colored band (indicating the centre of the bladder) is positioned 1 – 2 cm above your elbow joint on the inside of your arm (see picture).

Important! If you push up your sleeve, ensure it does not constrict the blood flow in your arm.

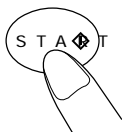
Close the cuff with the fabric fastener. The green area of the cuff must cover the brachial artery.

The standard-sized cuff is designed for an **arm circumference of 22 – 32 cm**. To ensure accurate readings on arms with a circumference greater than 32 cm a large cuff will be required. (large cuff code: CL)

Lay your arm on a table or support (e.g. a cushion) with the palm of your hand facing upwards so that **the cuff** is approximately at **heart level**. In this way you ensure that the blood pressure measurement obtained is neither artificially high (measurement below heart level) nor low (measurement above heart level).



Right hand measurement

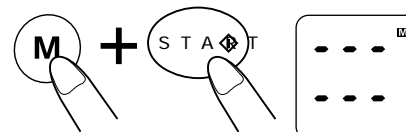
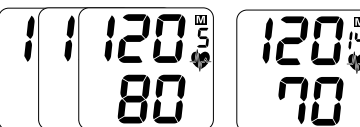
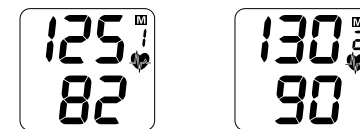
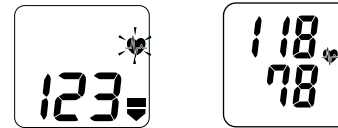
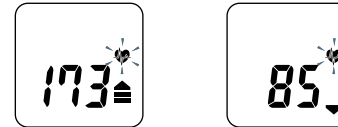
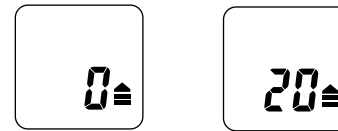


4 Inflating the cuff

The OMRON M4-I is a blood pressure monitor with an intelligent system to detect your personal blood pressure.

Using the intelligence of the “Fuzzy Logic” this device determines automatically the correct level of inflation pressure. Just push the START button (◊).

The cuff must only be inflated when fitted to your arm!



5 The measurement starts

When the target inflation value is reached, the air is automatically released. The value in the display counts downwards.

As soon as the monitor detects your pulse the (♥) symbol begins to flash.

When the monitor no longer detects your pulse whilst the cuff pressure is dropping, your systolic and diastolic blood pressures (upper and lower values) will be displayed.

The deflation symbol (▼) will now flash to indicate the end of the measurement.

When all the air has been released the (♥) symbol appears on the display and your blood pressure and pulse will be displayed on the screen for 5 minutes.

In some rare cases there are people where this measuring method does not work due to physical structure. In such cases OMRON recommends you to consult a doctor.

6 Successive readings

Please leave an interval of at least 2 – 3 minutes should be made in between two successive readings, otherwise the blood flow of the arm could be constricted, which would distort the results of the reading.

Switch off the device by pressing the ON/OFF (O/I) button. The device switches off automatically after approximately 5 minutes.

In order to obtain meaningful readings, you should measure your blood pressure regularly at the same time of day, ideally every morning and evening.

7 How to use the memory function

This monitor has a memory capable of storing fourteen sets of readings. Every time you complete the measurement, the monitor automatically stores blood pressure and pulse rate values.

Push the (M) button to recall stored readings while the Heart Symbol (♥) is displayed.

Once the memory holds fourteen sets of readings, the oldest set will be deleted to store a new set.

To delete stored readings, press the (M) button and the Start Button together, then all the readings will be deleted.

NOTE: You can not delete stored readings partially.

Hints on taking blood pressure readings

- Before measuring, stretch your back and sit up straight, breathe normally 5-6 times, relax your shoulders, arms and entire body.
- Slightly bend and support your elbow (e.g. on a table).
- Do not move, talk or touch the device during measurement.
- Stress influences your blood pressure, so try to relax before taking a measurement.
- To compare results, measurements must always be taken from the same arm.
- Do not place the cuff over thick clothes and do not roll up your sleeve if it is too tight.
- Align the cuff with the height of your heart (breast height). If necessary use a pillow or cushion.
- Coldness raises your blood pressure. It is recommended to measure at room temperature (+20°C).
- Relax before measurement. If necessary go to the bathroom before measurement.
- Do not measure directly after bathing.
- If you wish to interrupt measurement prematurely, press the (O/I) button. Inflation is stopped and the air is automatically released from the cuff.
- If you wish to repeat the measurement, follow the same procedure as before starting at step 4 (Inflating the cuff).
- Blood pressure measurements taken in a moving vehicle may be influenced by vibration.
- If an error has occurred during measurement [E] is displayed. Please refer to the next chapter.
- The monitor should be switched off after measurement to avoid running down the batteries unnecessarily. If you forget to do so, the monitor switches itself off automatically after 5 minutes.

Failure, causes and rectification

Failure and their possible causes	Rectification
<p>Incorrect measurement is indicated by [E]</p> <ol style="list-style-type: none"> 1. A correct reading could not be obtained because measurement was disturbed by movement of the body. 2. The cuff is not fitted correctly. 3. Your clothing has constricted your blood flow. 4. There is still air in the cuff when the monitor is switched off. 	<ol style="list-style-type: none"> 1. Repeat the measurement keeping perfectly still. Do not move your arm and do not speak. 2. Check that the cuff is correctly fitted. Then repeat the measurement. 3. Remove the item of clothing which caused the constriction. 4. The unit may be defective. Please have it examined and, if necessary, repaired by OMRON Customer Services.
<p>The start button was pressed before the () symbol was displayed</p>	<p>Wait for the () symbol indicating readiness before you press the start button.</p>
<p>The blood pressure values displayed are extremely low or high, or they are implausible.</p>	<p>Refer to the instructions and then repeat the measurement.</p>
<p>The display does not light up when the (O/I) button is pressed.</p> <ol style="list-style-type: none"> 1. The batteries are exhausted. 2. The +/- poles of the batteries have been reversed. 3. The battery contacts are dirty. <p>✗ The batteries are weak or exhausted.</p>	<ol style="list-style-type: none"> 1. Check the batteries and, if necessary, fit 4 new batteries. 2. Reinsert the batteries with the +/- poles the right way round. 3. Clean the battery contacts with a dry cloth. <p>Fit new batteries.</p>
<p>The cuff pressure does not rise although the pump motor can be heard.</p>	<p>Check that the air tube is properly connected to the monitor. Push the tube connector firmly into the socket.</p> <p>Contact Omron Customer Service.</p>

Maintenance and storage

- For cleaning the monitor only use a soft, lightly moistened cloth.
Do not use petroleum spirits, thinners or similar solvents!
- Stains on the cuff can be carefully removed using a moist cloth and soapy water.
Do not wash the cuff or make it wet!
- Keep your blood pressure monitor in the storage case to protect it from dust and moisture.
- Protect your monitor against vibrations and do not leave it in a place where temperatures are extremely low (below -20 °C) or extremely high (above 60 °C) or with high humidity(+ 85%).
- Do not use your monitor at very low temperatures (below 10 °C) or very high temperatures (above 40 °C).
- Do not fold the cuff or air tube together too tightly and do not crease them.
- Do not carry out repairs of any kind yourself. If a defect occurs, consult the OMRON Customer Service or seek the advice of your surgical appliance stockist or pharmacist.
- The well confirmed accuracy of this blood pressure monitor is designed to last a long time.
- In order to increase the lifetime of the batteries take them out when you store the device for a longer period than 2 months.
- Electro-magnetic fields can influence the measurement. Do not use a portable phone near this unit.

Technical data

Model:	OMRON M4-I
Display:	LCD digital display
Blood Pressure Measurement Range:	Pressure: 0 mm Hg to 280 mm Hg Pulse: 40 – 180/min.
Accuracy:	Pressure: ±3 mm Hg Pulse: ±5% of reading
Memory:	14 measurements
Inflation:	Fuzzy-Logic controlled by electric pump
Deflation:	Automatic pressure release valve
Pressure Detection:	Capacitive pressure sensor
Measurement Method:	Oscillometric method
Power Source:	4 Alkaline batteries 1.5V (Type LR6) or AC/DC adapter (optional, 6V = 4W)
Battery Life:	Capacity of new batteries is approx. 300 measurements
Operating Temperature:	10°C to 40°C
Storage Temperature:	-20°C to 60°C
Humidity:	30 to 85% RH
Storage humidity:	10 to 95% RH
Console Weight:	Approximately 450g with batteries
Outer Dimensions:	Approximately 167.5 mm x 65 mm x 106 mm
Cuff Dimensions:	Approximately 140 mm x 480 mm (arm circumference 22 – 32 cm)
Accessories:	Cuff, Type M (CR17); instruction manual, storage case, battery set

This device fulfils the provisions of the EC directive 93/42/EEC (Medical Device Directive). This blood pressure monitor is designed according to the European standard EN1060, Non-invasive sphygmomanometers Part 1: General requirements and Part 3: Supplementary requirements for electromechanical blood pressure measuring systems.

NOTE: Subject to technical modification without prior notice

- Disposal of this product and used batteries should be carried out in accordance with the national regulations for the disposal of electronic products.



OMRON spare parts



Mains adapter



Small cuff,
Arm circumference 15 – 22 cm
Code: CS



Normal cuff,
Arm circumference 22 – 32 cm
Code: CM



Extra large cuff,
Arm circumference 32 – 42 cm
Code: CL

Calibration

The accuracy of this blood pressure monitor has been carefully tested and is designed for a long service life. It is generally recommended to have the monitor inspected every two years to ensure correct functioning and accuracy. Please consult your authorised dealer or the OMRON Customer Service at the address given on the packaging/attached literature.

OMRON devices are especially designed for regular blood pressure monitoring. OMRON therefore has direct contact with medical specialists and takes advice, on the design and features of its blood pressure monitors.

Spare parts & accessories

Due to high company quality standards, OMRON considers the main unit as a non-serviceable part because of the necessity of proper calibration after replacement of high-tech components.

Some useful information about blood pressure

What is Blood Pressure?

Blood pressure is a measure of the force of blood flowing against the walls of the arteries. Arterial blood pressure is constantly changing during the course of the heart's cycle. The highest pressure in the cycle is called the **SYSTOLIC BLOOD PRESSURE**; the lowest is the **DIASTOLIC BLOOD PRESSURE**. Both pressure readings, the **SYSTOLIC** and **DIASTOLIC**, are necessary to enable a doctor to evaluate the status of a patient's blood pressure.

Many factors such as physical activity, anxiety, or the time of day, can influence your blood pressure. Blood pressure is typically low in the morning and increases from afternoon to evening. It is lower in the summer and higher in the winter.

Blood pressure is measured in millimetres of mercury (mmHg) and measurements are written with the systolic pressure before the diastolic e.g. A blood pressure written as 140/90, is referred to as 140 over 90 mmHg.

High Blood Pressure

The discovery that you have high blood pressure is more often than not a chance finding. People with high blood pressure usually feel well unless the blood pressure has been high for some time, and complications have occurred. Such complications may effect the heart, brain and other important organs. They may bring on ill health and affect your enjoyment of life. It is because of the complications, rather than the high blood pressure itself, that this condition is taken so seriously today.

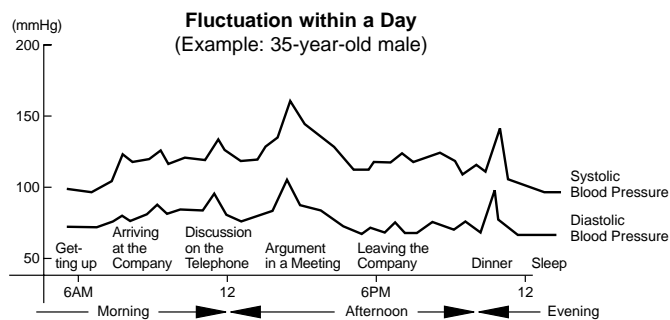
High blood pressure is sometimes referred to as raised blood pressure, elevated blood pressure, or hypertension. Most people with this condition require regular long-term drug treatment, usually in the form of tablets. Some can lower their blood pressure sufficiently by other means, such as changing diet and lifestyle.

People who have high blood pressure, and who also understand their condition, have an advantage. They are more likely to attend for regular check-ups, to cooperate with advised diets and changes in lifestyle, and to take medicines correctly. This immediately leads to better health. It is hoped that, by a better understanding of high blood pressure and how it is treated, you will take an active and informed part in your health care, and so enjoy a better quality of life.

What Causes High Blood Pressure?

Blood pressure is only classed as high if it doesn't go down when you rest. Permanently raised blood pressure can be caused by several factors such as hardening of the arteries, smoking or drinking too much alcohol. It can also be caused by cholesterol, a type of fat, building up inside your blood vessels and making them narrower. Being under stress can add to the problem.

High blood pressure is also known to run in families hence if you find you have a high blood pressure it is a good idea to test other closely related members of your family.



Why is it a Good Thing To Measure Blood Pressure at Home?

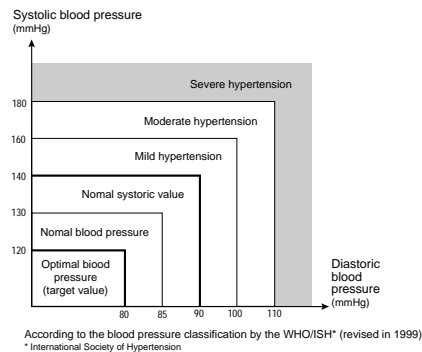
Having your blood pressure measured by a doctor can cause anxiety which is a cause itself of high blood pressure. As a variety of conditions affect blood pressure, a single measurement may not be sufficient for an accurate diagnosis.

The blood pressure measured first thing in the morning after getting up, before eating and while at rest, is known as the fundamental blood pressure. In practice it is rather difficult to record the fundamental blood pressure, but it is important to get readings in an environment that is as close as possible to this.

Classification of Blood Pressure by the World Health Organization

The World Health Organization (WHO) and the International Society of Hypertension (ISH) developed the Blood Pressure Classification shown in this figure. This classification is based on the blood pressure values measured on people in a sitting position in outpatient departments of hospitals.

**There is no universally accepted definition of hypotension. However, those having the systolic pressure below 100 mmHg are assumed as hypotensive.*



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