# accumed

Automatic Upper Arm Blood Pressure Monitor


C5
model

EN Blood Pressure Monitor

www.accumed.ch

## Introduction

Blood pressure measurements determined with C5 are equivalent to those obtained by a trained observer using cuff/stethoscope auscultation method, within the limits prescribed by the American National Standard, Electronic or Automated Sphygmomanometers. This unit is to be used by adult consumers in a home environment. Do not use this device on infants or neonates. C5 is protected against manufacturing defects by an established International Warranty Program. For warranty information, you can contact your local distributors.

Attention: Consult the accompanying documents. Please read this manual carefully before use. For specific information on your own blood pressure, contact your physician. Please be sure to keep this manual.

## PARR(Pulse Arrhythmia) Technology

Pulse Arrhythmia (PARR) technology specifically detects the existence of pulse arrhythmia, including atrial fibrillation (AF, AFib), Atrial and / or Ventricular Premature Contractions (PC). Pulse Arrhythmia may be related to cardiac disorders, needs medical attention and thus early diagnosis is of paramount importance. The PARR technology detects arrhythmia during regular blood pressure checks without any additional user skills, user interaction and measurement prolongation. Beside the blood pressure diagnosis a specific pulse arrhythmia diagnosis is provided with PARR.

Note: The PARR detection of AFib and PC is provided with a clinically proven high detection probability [1]. However, the sensitivity and specificity is limited, thus most, but not all pulse arrhythmia will be detected and displayed. In certain patients with uncommon clinical conditions the PARR technology may not be able to detect pulse arrhythmia. This partly comes from the fact that some arrhythmia can only be found with an ECG diagnosis, but not with a pulse diagnosis. Thus PARR is not meant to replace any medical ECG diagnosis by your doctor. PARR provides an early detection of certain pulse arrhythmia, which inevitably need to be presented to your doctor in charge.

Remark: [1] Clinical Investigation of PARR - A new Oscillometric Pulse Arrhythmia Type Discriminating Detection Technology.

## Atrial Fibrillation Detection (AFib)

The upper chambers of the heart (the atria) do not contract, but quiver and thus blood is driven irregularly and with lower efficiency into the ventricles. Subsequently irregular heartbeats occurs, which mostly are associated with a fast, yet highly instable heart rate. This condition is associated with a higher risk for the formation of cardiac blood clots. Amongst others, they may elevate the risk of brain strokes. Beside this atrial fibrillation may contribute to the severity of a chronic or acute heart failure condition and may be associated with other heart-related complications. Age dependent, about 10 %- 20 % percent of patients who suffer from an ischemic stroke also suffer from atrial fibrillation.

Atrial fibrillation most often initially occurs with temporary periods of arrhythmia and may progress to a permanent state of this disorder in the course of time. No matter, whether you intent to safeguard yourself from an undetected AFib state, or you measure during an ongoing period of active atrial fibrillation, or you measure in between periods of AFib, the PARR technology can be applied at any of these conditions. This unit is able to detect Atrial fibrillation (AFib). The ARR and AFib icons ( **♥AFib** ) are displayed right after the measurement if Atrial Fibrillation was detected.

Note: It is strongly recommended, that you consult your physician, if either the AFib icon occurs newly for several times, or, if your AFib is known to your doctor, but the incidence of AFib readings changes over time. Your doctor will then be able to provide all required medical test and possible therapeutic procedures.

Note: The presence of a cardiac pacemaker may impair the AFib detection by PARR.

## Premature Contraction Detection (PC)

Extra abnormal heartbeats generated in irregular excitation sites of your heart, either in the atria (PAC), the ventricle (PVC) or the cardiac conduction nodes (PNC). These extra beats may disrupt your regular rhythm, they may come in early or cause a significant pauses regarding your perceivable pulse. This is called palpitations, which can be felt in your chest. They may occur as isolated, single events, as a series of irregular pulses or can be distributed all over your pulse beats. If they are not related to mental stress, or acute demanding physical load, they may be a marker for a multitude of cardiac disorders. Some of these disorders go along with an elevated risk profile for ischemic events, either in the heart (e,g, coronary heart disease) or outside the heart, e.g. an elevated risk for a stroke. Some PCs may indicate on valvular or myocardial disorders and become very important if a myocarditis (infection of the heart muscle) is suspected. This unit is able to detect premature contractions ( **♥PC** ). The ARR and PC icons are displayed right after the measurement if premature contractions have been detected.

Note: It is strongly recommended, that you consult your physician, if either the PC icon occurs newly for several times, or, if your PC is known to your doctor, but the incidence of PC readings changes over time. Your doctor will then be able to provide all required medical test and possible therapeutic procedures.

## Pulse Arrhythmia Detection (ARR)

Once the occurrence of pulse arrhythmia has been detected in the course of your blood pressure measurement, the icon ARR is displayed. In the case, that the found pulse arrhythmia can be specified by the PARR technology, the ARR icon is accompanied by the specifically detected type of arrhythmia, e.g. PC or AFib. Once the kind of found pulse arrhythmia cannot be safely determined by PARR, the device is displaying ARR without any additional pulse arrhythmia type icon.

Note: It is strongly recommended, that you consult your physician, if either the ARR icon occurs newly for several times, or, if your ARR is known to your doctor, but the incidence of ARR readings changes over time. This is independent whether the ARR icon is specified by another pulse arrhythmia icon or not. Your doctor will then be able to provide all required medical test and possible therapeutic procedures.

The PARR technology is able to detect and display combined pulse arrhythmia findings.

| Dispaly | Results |
|---|---|
| - | Normal finding |
| **ARR** | Pulse Arrhythmia without type-specific detection |
| **ARR PC** | Pulse Arrhythmia-Premature ventricular, atrial or nodal beat detection |
| **ARR AFib** | Pulse Arrhythmia-Atrial fibrillation detection |
| **ARR AFib PC** | Combined Pulse Arrhythmia: Atrial fibrillation & Premature beats detection |

## Real Fuzzy Measuring Technology

This unit uses the oscillometric method to detect your blood pressure. Before the cuff starts inflating, the device will establish a baseline cuff pressure equivalent to the air pressure. This unit will automatically determine the appropriate inflation level based on pressure oscillations, followed by cuff deflation.

During the deflation, the device will detect the amplitude and slope of the pressure oscillations and thereby determine your actual the systolic blood pressure, diastolic blood pressure, and pulse rate.

## Preliminary Remarks

This Blood Pressure Monitor complies with the European regulations and bears the CE mark "CE 0120". The quality of the device has been verified and conforms to the provisions of the EC council directive 93/42/EEC (Medical Device Directive), Annex I essential requirements and applied harmonized standards.

EN 1060-1: 1995/A2: 2009 Non-invasive sphygmomanometers - Part 1 - General requirements

EN 1060-3: 1997/A2: 2009 Non -invasive sphygmomanometers - Part 3 - Supplementary requirements for electro-mechanical blood pressure measuring systems

EN 1060-4: 2004 Non-invasive sphygmomanometers - Part 4: Test Procedures to determine the overall system accuracy of automated non-invasive sphygmomanometers. This blood pressure monitor was designed for long service time. To ensure accurate measurements, this monitor is recommended to be re-calibrated every two years.

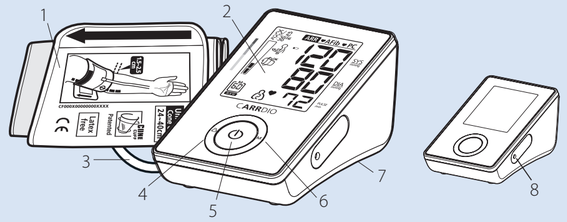
## Blood Pressure Standard

Refer to the definitions of the World Health Organization, the blood pressure ranges can be classified into 6 grades. (Ref. 1999 WHO-International Society of Hypertension Guidelines for the management of Hypertension). This blood pressure classification are based on statistical data, and may not be directly applicable to any particular patient. It is important that you consult with your physician regularly. Your physician will tell you your normal blood pressure range as well as the point at which you will be considered at risk. For reliable monitoring and reference of your blood pressure, keeping long-term records is recommended. Please download the blood pressure log at our website www.rossmax.com.

**Blood Pressure Standard World Health Organization (WHO) : 1999**

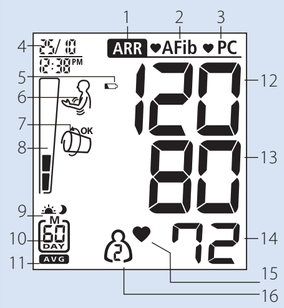
| | Systolic Pressure (mmHg) | | Diastolic Pressure (mmHg) |
|---|---|---|---|
| Optimal | <120 | and | <80 |
| Normal | 120~129 | or | 80~84 |
| High-normal | 130~139 | or | 85~89 |
| Grade 1 hypertension (mild) | 140~159 | or | 90~99 |
| Grade 2 hypertension (moderate) | 160~179 | or | 100~109 |
| Grade 3 hypertension | ≥180 | or | ≥110 |

## Name/Function of Each Part




1. Arm Cuff
2. LCD Display
3. Air Tube and Connector
4. User-Switching key
5. ON/OFF/START key
6. Memory Key
7. Battery Cover
8. AC Adaptor Jack

## Name/Function of Each Part




1. Arrhythmia Detection (ARR)
2. Atrial Fibrillation Detection (AFib)
3. Premature Contraction Detection (PC)
4. Date/Time Indication
5. Weak Battery Mark
6. Movement Mark
7. Loose Cuff Detection
8. Hypertension Risk Indication
9. Morning and Nighttime Mark
10. Memory/Date Mark
11. Memory Average Mark
12. Systolic Pressure
13. Diastolic Pressure
14. Pulse Rate
15. Pulse Mark
16. Memory Zone

## Loose Cuff Detection

If the cuff was applied too loosely, it may cause unreliable measurement results or measurements can fail to start. The "Loose Cuff Detection" can help to determine if the cuff is wrapped snugly enough. The specified icon appears once a "loosen cuff" has been detected during measurement. Otherwise the specified icon appears if the cuff is wrapped correctly during measurement.

## Movement Detection

The "Movement Detection" helps reminding the user to remain still and is indicating any adverse body movement during measurement. The specified icon appears once a "body movement" has been detected during and after such a measurement.

Note: It's highly recommended that you measure again if the icon appears.

## Guest Mode

This monitor has a non-stored single measurement function. Press the User-Switching key to select the memory zone of guest , and follow the Measurement Procedure to take a measurement correctly. When the measurement is completed, the measurement value will not be stored in memory zone.

## Hypertension Risk Indication (HRI)

The World Health Organization, classifying blood pressure ranges into 6 grades. This unit is equipped with an innovative blood pressure risk indication, which visually indicates the assumed risk level (optimal / normal / high-normal/ grade1 hypertension / grade 2 hypertension / grade 3 hypertension) of your result, making the meaning of your findings comprehensive.

## Error Codes for your reference

**EE / Measurement Error:** Make sure the L-plug is securely connected to the air socket and calmly measure again. Wrap the cuff correctly around your arm and keep arm steady during measurement. If the error keeps occurring, return the device to your local distributor or service centre.

**E1 / Air Circuit Abnormality:** Make sure the L-Plug is securely connected to the air socket on the side of the unit and calmly measure again. If the errors still occur, return the device to your local distributor or service centre for help.

**E2 / Pressure Exceeding 300 mmHg:** Switch the unit off and measure again quietly. If the error keeps occurring, return the device to your local distributor or service centre.

**E3 / Data Error:** Remove the batteries, wait for 60 seconds, and reload. If the error keeps occurring, return the device to your local distributor or service centre.

**Er / Exceeding Measurement Range:** Measure again quietly. If the error keeps occurring, return the device to your local distributor or service centre.

## Using the AC Adaptor (Optional)

1.Connect the AC adaptor with the AC adaptor jack on the right side of the unit.
2.Plug the AC adaptor into the socket. (AC adaptors with required voltage and current indicated near the AC adaptor jack.)

Caution:

⚠ 1. Please unload the batteries when operating with the AC mode for a longer period of time . Leaving the batteries in the compartment for a long time may cause leakage, which may lead to damage of the unit.
2. No batteries are needed when operating with the AC mode.
3. AC adaptors are optional. Please contact the distributor for the compatible AC adaptors.
4. Use only the authorized AC Adaptor with this blood pressure monitor. Information for the authorized AC adaptor, please refer to APPENDIX 1.

## Installing Batteries

1. Press down and lift the battery cover in the direction of the arrow to open the battery compartment.
2. Install or replace 4 "AA" sized batteries in the battery compartment according to the indications inside the compartment.
3. Replace the battery cover by clicking in the bottom hooks first, then push in the top end of the battery cover.
4. Replace the batteries in pairs. Remove batteries when unit is not in use for extended periods of time.

You need to replace the batteries when

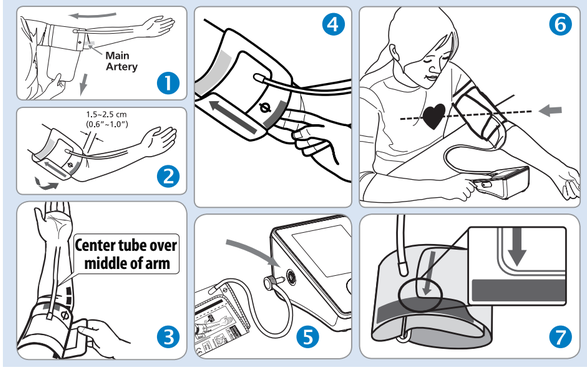
⚠ 1. low battery icon appears on display.
2. the ON/OFF/START key is pressed and nothing appears on display.

Caution:

1. Batteries are hazardous waste. Do not dispose them together with the household garbage.
2. There are no user serviceable parts inside. Batteries or damage from old batteries are not covered by warranty.
3. Use exclusively brand batteries. Always replace with new batteries together. Use batteries of the same brand and same type.

## Applying the Cuff

1. Unwrap the arm cuff, leaving the end of the cuff through the D-ring of the cuff.
2. Put your left arm through the cuff loop. The color strip indication should be positioned closer to you with the tube pointing in the direction of your arm (Fig. ①). Turn your left palm upward and place the edge of the arm cuff at approximately 1.5 to 2.5 cm above the inner side of the elbow joint (Fig. ②). Tighten the cuff by pulling the end of the cuff.
3. Center the tube over the middle of the arm. Press the hook and loop material together securely. Allow room for 2 fingers to fit between the cuff and your arm. Position the artery mark (Ø) over the main artery (on the inside of your arm) (Fig. ③,④). Note: Locate the main artery by pressing with 2 fingers approximately 2 cm above the bend of your elbow on the inside of your left arm. Identify where the pulse can be felt the strongest. This is your main artery.
4. Plug in the cuff connecting tube into the unit (Fig. ⑤).
5. Lay your arm on a table (palm upward) so the cuff is at the same height as your heart. Make sure the tube is not kinked (Fig. ⑥).
6. This cuff is suitable for your use if the arrow falls within the solid color line as shown on the right (Fig. ⑦). If the arrow falls outside the solid color line, you will need a cuff with other circumferences. Contact your local dealer for additional size cuffs.




## Measurement Procedures

Here are a few helpful tips to help you obtain more accurate readings:

- Blood pressure changes with every heartbeat and is in constant fluctuation throughout the day.
- Blood pressure recording can be affected by the position of the user, his or her physiological condition and other factors. For greatest accuracy, wait one hour after exercising, bathing, eating, drinking beverages with alcohol or caffeine, or smoking to measure blood pressure.
- Before measurement, it's suggested that you sit quietly for at least 5 minutes as measurement taken during a relaxed state will have greater accuracy. You should not be physically tired or exhausted while taking a measurement.
- Do not take measurements if you are under stress or tension.
- During measurement, do not talk or move your arm or hand muscles.
- Take your blood pressure at normal body temperature. If you are feeling cold or hot, wait a while before taking a measurement.
- If the monitor is stored at very low temperature (near freezing), have it placed at a warm location for at least one hour before using it.
- Wait 5 minutes before taking the next measurement.

1. Press the User-Switching key to select memory zone 1, memory zone 2 or guest mode. After a memory zone is selected, press the ON/OFF/START key to reset the monitor so it can start measurement in the chosen memory zone.
2. Press the ON/OFF/START key. All digits will light up, checking the display functions. The checking procedure will be completed in 2 seconds.
3. After all symbols appear, the display will show a blinking "0". The monitor is ready to measure and will automatically inflate the cuff slowly to start measurement.
4. When the measurement is completed, the cuff will exhaust the pressure inside. Systolic pressure, diastolic pressure and pulse will be shown simultaneously on the LCD screen. The measurement is then automatically stored into the pre-designated memory zone.
5. In order to enhance the probability of pulse arrhythmia detection by the PARR technology, measurement repetitions are recommended.

This monitor will re-inflate automatically to approximately 220 mmHg if the system detects that your body needs more pressure to measure your blood pressure.

Note: 1. This monitor automatically switches off approximately 1 minute after last key operation.

2. To interrupt the measurement, simply press the ON/OFF/START key; the cuff will deflate immediately.
3. During the measurement, do not talk or move your arm or hand muscles.

## Recalling Values from Memory

1. The monitor has two memory zones (1 and 2). Each zone can store up to 60 measurements.
2. To read memory values from a selected memory zone, use the User-Switching key to select a memory zone (1 or 2) from which you want to recall values. Press the Memory key. The first reading displayed is the average of all morning readings from the last 7 days.
3. Continue to press the Memory key to view the average of all nighttime readings from the last 7 days.
4. Press the Memory key again to view the average of the last 3 measurements stored in memory, and the last previously stored measurement. Every measurement comes with an assigned memory sequence number.

Note: The memory bank can store up to 60 readings per memory zone. When the number of readings exceeds 60, the oldest data will be replaced with the new record.

Note: AM is defined as 4:00 AM – 11:59 AM

Note: PM is defined as 6:00 PM – 2:00 AM

## Clearing Values from Memory

1. Press the User-Switching key to select memory zone 1 or memory zone 2.
2. Press and hold the Memory key for approximately 5 seconds, then the data in the memory zone can be erased automatically.

## Time Adjustment

1. To adjust the date/time in the monitor after installing or replacing batteries. The display will show a blinking number showing the year.
2. Change the year by pressing the Memory key, each press will increase the number. Press the ON/OFF/START key to confirm the entry and the screen will show a blinking number representing the date.
3. Change the date, the hour and the minute as described in Step 2 above, using the Memory key to change and the ON/OFF/START key to confirm the entries.
4. "0" will reappear as the Blood Pressure Monitor is ready for measurement again.

## Troubleshooting

If any abnormality will arise during use, please check the following points.

| Symptoms | Check Points | Correction |
|---|---|---|
| No display when the ON/OFF/START key is pressed | Have the batteries run down? | Replace them with four new batteries. |
| | Have the batteries' polarities been positioned incorrectly? | Re-insert the batteries in the correct positions. |
| EE mark shown on display or the blood pressure value is displayed excessively low (high) | Is the cuff placed correctly? | Wrap the cuff properly so that it is positioned correctly. |
| | Did you talk or move during measurement? | Measure again. Keep wrist steady during measurement. |
| | Did you vigorously shake the cuff during measurement? | |

Note: If the unit still does not work, return it to your dealer. Under no circumstance should you disassemble and repair the unit by yourself.

## Cautionary Notes

1. The unit contains high-precision assemblies. Therefore, avoid extreme temperatures, humidity, and direct sunlight. Avoid dropping or strongly shocking the main unit, and protect it from dust.
2. Clean the blood pressure monitor body and the cuff carefully with a slightly damp, soft cloth. Do not press. Do not wash the cuff or use chemical cleaner on it. Never use thinner, alcohol or petrol (gasoline) as cleaner.
3. Leaky batteries can damage the unit. Remove the batteries when the unit is not used for a long time.
4. The unit should not be operated by children so to avoid hazardous situations.
5. If the unit is stored near freezing, allow it to acclimate at room temperature before use.
6. This unit is not field serviceable. You should not use any tool to open the device nor should you attempt to adjust anything inside the device. If you have any problems, please contact the store or the doctor from whom you purchased this unit or please contact Rossmax International Ltd.
7. As a common issue for all blood pressure monitors using the oscillometric measurement function, the device may have difficulty in determining the proper blood pressure for users diagnosed with diabetes, poor circulation of blood, kidney problems, or for users suffered from stroke, or for unconscious users.
8. This unit is able to detect common arrhythmia (atrial or ventricular premature beats or atrial fibrillation). The ARR, AFib and PC icons are displayed after the measurement if Atrial Fibrillation and Premature Contraction was detected during the measurement. If ARR, AFib or PC icons are displayed, you are advised to wait for a while and take another measurement. It is strongly recommended that you consult your physician if the ARR, AFib or PC icons appear often.
9. While the given device is able to detect specific pulse arrhythmia, the measurement accuracy of the blood pressure meter may be impaired with the occurrence of pulse arrhythmia.
10. To stop operation at any time, press the ON/OFF/START key, and the air in the cuff will be rapidly exhausted.
11. Once the inflation reaches 300 mmHg, the unit will start deflating rapidly for safety reasons.
12. Please note that this unit can be a home healthcare product, but it is not intended to serve as a substitute for the advice of a physician or medical professional.
13. Do not use this device for diagnosis or treatment of any health problem or disease. Measurement results are for reference only. Consult a healthcare professional for interpretation of pressure measurements. Contact your physician if you have or suspect any medical problem. Do not change your medications without the advice of your physician or healthcare professional.
14. Electromagnetic interference: The device contains sensitive electronic components. Avoid strong electrical or electromagnetic fields in the direct vicinity of the device (e.g. mobile telephones, microwave ovens). These may lead to temporary impairment of measurement accuracy.
15. Dispose of device, batteries, components and accessories according to local regulations.
16. This monitor may not meet its performance specification if stored or used outside temperature and humidity ranges specified in Specifications.
17. Please note that when inflating, the functions of the limb in question may be impaired.
18. During the blood pressure measurement, blood circulation must not be stopped for an unnecessarily long time. If the device malfunctions, remove the cuff from the arm.
19. Avoid any mechanical restriction, compression or bending of the cuff line.
20. Do not allow sustained pressure in the cuff or frequent measurements. The resulting restriction of the blood flow may cause injury.
21. Ensure that the cuff is not placed on an arm in which the arteries or veins are undergoing medical treatment, e.g. intravascular access or therapy, or an arteriovenous (AV) shunt.
22. Do not apply the cuff on the side, where a mastectomy has been performed in your patient history.
23. Do not place the cuff over wounds as this may cause further injury.
24. Only ever use the cuffs provided with the monitor or original replacement cuffs. Otherwise erroneous results will be recorded.
25. Batteries can be fatal if swallowed. You should therefore store the batteries and products where they are inaccessible to small children. If a battery has been swallowed, call a doctor immediately.

## Specifications

| | |
|---|---|
| Measurement Method | Oscillometric |
| Measurement Range | Pressure: 30~260 mmHg; Pulse: 40~199 beats/minute |
| Pressure Sensor | Semi conductor |
| Accuracy | Pressure: ± 3 mmHg; Pulse: ± 5% of reading |
| Inflation | Pump Driven |
| Deflation | Automatic Air Release Valve |
| Memory capacity | 60 memories for each zone x 2 zones |
| Auto-shut-off | 1 minute after last key operation |
| Permissible Operating Temperature and Humidity | 10°C~40°C (50°F~104°F); 15%~85% RH; 700~1060 hPa |
| Permissible Transport and Storage Temperature and Humidity | -10°C~60°C (14°F~140°F); 10%~90% RH; 700~1060 hPa |
| DC Power Source | DC 6V four AA Batteries |
| AC Power Source | DC 6V, ≥600mA (Plug size: outer(-) is Ø4.0, inner(+) is Ø1.7) |
| Dimensions | 146.7 (L) X 100 (W) X 74 (H) mm |
| Weight | 285g (G.W.) (w/o Batteries) |
| Arm circumference | Adult: 24~40 cm (9.4"~15.7") |
| Limited Users | Adult users |
| | Type BF: Device and cuff are designed to provide special protection against electrical shocks. |
| IP Classification | IP21: Protection against harmful ingress of water and particulate matter |

*Specifications are subject to change without notice.

### EMC guidance and manufacturer's declaration

Guidance and manufacturer's declaration-electromagnetic emissions

The C5 is intended for use in the electromagnetic environment specified below. The customer or the user of the C5 should assure that it is used in such an environment.

| Emission test | Compliance | Electromagnetic environment-guidance |
|---|---|---|
| RF emissions CISPR 11 | Group 1 | The C5 uses RF energy only for its internal function. Therefore, its RF emissions are very low and are not likely to cause any interference in nearby electronic equipment. |
| RF emissions CISPR 11 | Class B | The C5 is suitable for use in all establishments, including domestic establishments and those directly connected to the public low-voltage power supply network that supplies buildings used for domestic purposes. |
| Harmonic emissions IEC 61000-3-2 | Class A | |
| Voltage fluctuations/flicker emissions IEC 61000-3-3 | Compliance | |

Guidance and manufacturer's declaration-electromagnetic immunity. The C5 is intended for use in the electromagnetic environment specified below. The customer or the user of the C5 should assure that it is used in such an environment.

| Immunity test | IEC 60601 test level | Compliance level | Electromagnetic environment-guidance |
|---|---|---|---|
| Electrostatic discharge (ESD) IEC 61000-4-2 | ± 6 kV contact<br>± 8 kV air | ± 6 kV contact<br>± 8 kV air | Floors should be wood, concrete or ceramic tile. If floors are covered with synthetic material, the relative humidity should be at least 30% |
| Electrical fast transient/burst IEC 61000-4-4 | ± 2kV for power supply lines<br>± 1kV for input / output lines | ± 2kV for power supply lines<br>Not applicable | Mains power quality should be that of a typical commercial or hospital environment. |
| Surge IEC 61000-4-5 | ± 1kV line(s) to line(s)<br>± 2kV line(s) to earth | ± 1kV differential mode<br>Not applicable | Mains power quality should be that of a typical commercial or hospital environment. |
| Voltage Dips, short interruptions and voltage variations on power supply input lines IEC 61000-4-11 | <5% UT(>95% dip in UT) for 0,5 cycle<br>40% UT(60% dip in UT) for 5 cycles<br>70% UT(30% dip in UT) for 25 cycles<br><5% UT(>95% dip in UT) for 5 s | <5% UT(>95% dip in UT) for 0,5 cycle<br>40% UT(60% dip in UT) for 5 cycles<br>70% UT(30% dip in UT) for 25 cycles<br><5% UT(>95% dip in UT) for 5 s | Mains power quality should be that of a typical commercial or hospital environment. If the user of the C5 requires continued operation during power mains interruptions, it is recommended that the C5 be powered from an uninterruptible power supply or a battery. |
| Power frequency (50/60 Hz) magnetic field IEC 61000-4-8 | 3 A/m | 3 A/m | Power frequency magnetic fields should be at levels characteristics of a typical location in a typical commercial or hospital environment. |

NOTE: UT is the a.c. mains voltage prior to application of the test level.

Guidance and manufacturer's declaration-electromagnetic immunity

The C5 is intended for use in the electromagnetic environment specified below. The customer or the user of the C5 should assure that is used in such and environment.

| Immunity test | IEC 60601 test level | Compliance level | Electromagnetic environment-guidance |
|---|---|---|---|
| Conducted RF IEC 61000-4-6 | 3 Vrms<br>150 KHz to 80 MHz | 3 Vrms | Portable and mobile RF communications equipment should be used no closer to any part of the C5 including cables, than the recommended separation distance calculated from the equation applicable to the frequency of the transmitter. Recommended separation distance:<br>$d = 1,2\sqrt{P}$; $d = 1,2\sqrt{P}$ 80MHz to 800 MHz; $d = 2,3\sqrt{P}$ 800MHz to 2,5 GHz<br>Where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer and d is the recommended separation distance in metres (m). Field strengths from fixed RF transmitters, as determined by an electromagnetic site survey, a should be less than the compliance level in each frequency range. b Interference may occur in the vicinity of equipment marked with the following symbol: |
| Radiated RF IEC 61000-4-3 | 3 V/m<br>80MHz to 2,5 GHz | 3 V/m | |

NOTE 1: At 80 MHz and 800 MHz, the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

a: Field strengths from fixed transmitters, such as base stations for radio (cellular/cordless) telephones and land mobile radios, amateur radio, AM and FM radio broadcast and TV broadcast cannot be predicted theoretically with accuracy. To assess the electromagnetic environment due to fixed RF transmitters, an electromagnetic site survey should be considered. If the measured field strength in the location in which the C5 is used exceeds the applicable RF compliance level above, the C5 should be observed to verify normal operation. If abnormal performance is observed, additional measures may be necessary, such as re-orienting or relocating the C5.

b: Over the frequency range 150 kHz to 80 MHz, field strengths should be less than 3 V/m.

Recommended separation distance between portable and mobile RF communications equipment and the C5

The C5 is intended for use in an electromagnetic environment in which radiated RF disturbances are controlled. The customer or the user of the C5 can help prevent electromagnetic interference by maintaining a minimum distance between portable and mobile RF communications equipment (transmitters) and the C5 as recommended below, according to the maximum output power of the communications equipment.

| Rated maximum output power of transmitter / W | Separation distance according to frequency of transmitter / m | | |
|---|---|---|---|
| | 150 kHz to 80 MHz / d=1,2√P | 80 MHz to 800 MHz / d=1,2√P | 800 MHz to 2,5 GHz / d=2,3√P |
| 0,01 | 0,12 | 0,12 | 0,23 |
| 0,1 | 0,38 | 0,38 | 0,73 |
| 1 | 1,2 | 1,2 | 2,3 |
| 10 | 3,8 | 3,8 | 7,3 |
| 100 | 12 | 12 | 23 |

For transmitters rated at a maximum output power not listed above, the recommended separation distance d in metres (m) can be estimated using the equation applicable to the frequency of the transmitter, where *P* is the maximum output power rating of the transmitter in watts (W) according to the transmitter manufacturer.

NOTE 1: At 80 MHz and 800 MHz, the separation distance for the higher frequency range applies.

NOTE 2: These guidelines may not apply in all situations. Electromagnetic propagation is affected by absorption and reflection from structures, objects and people.

**Warranty Card**

This instrument is covered by a 3 year guarantee from the date of purchase. The guarantee is valid only on presentation of the warranty card completed or stamped by the seller/dealer confirming date of purchase or the receipt. Batteries, cuff and accessories are not included. Opening or altering the instrument invalidates the guarantee. The guarantee does not cover damage, accidents or non-compliance with the instruction manual. Please contact your local seller/dealer or www.accumed.ch.

**Customer Name:** _____

**Address:** _____

**Telephone:** _____

**E-mail address:** _____

**Gender:** ☐ **Male** ☐ **Female** **Age:** _____

**Product Information**

**Date of purchase:** _____

**Store where purchased:** _____

**WARNING:** The symbol on this product means that it's an electronic product and following the European directive 2012/19/EU the electronic products have to be dispose on your local recycling centre for safe treatment.

Rossmax Swiss GmbH,
Tramstrasse 16, CH-9442 Berneck,
Switzerland

ISO 9001/13485 CE 0120

AM_IB_C5(1)_NA9_EN_SW_ver1643.indd 2

2016/11/1 下午4:30