



DENA 1210 Quick Reference Guide

 This Quick Guide is only for professional users who are proficient in using the device (and extensions and attachments) who have already read the user manual of the device.

 Refer to User manual for more information.

Power ON



Turn the device On by pressing this button on the keypad.

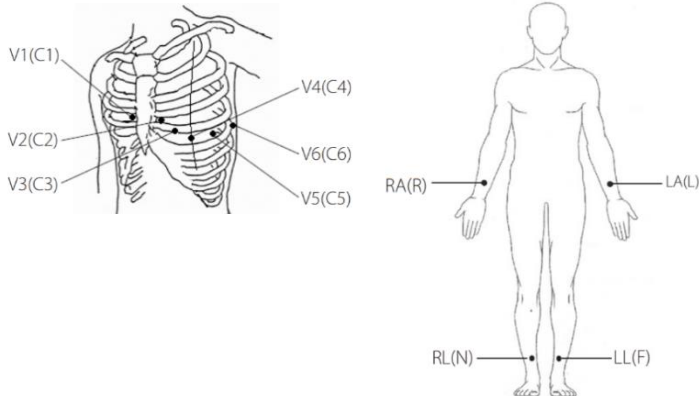
Patient preparation

1. Make sure the patient is relaxed and the ambient temperature is appropriate.
2. If necessary, shave the hair where the electrodes are placed on the skin.
3. Thoroughly clean the skin with alcohol.
4. Dry the skin before attaching the electrodes.

ECG cable connection

Connect the patient cable to the connector on the right side of the device. Make sure the cable is connected to the device by tightening the screws.

Electrodes placement



Attach 6 chest electrodes and 4 limb electrodes to the patient:

- R and L electrodes must be placed on wrists.
- N and F electrodes must be placed above the ankles.
- C1: Fourth intercostal space at the right margin of the sternum
- C2: Fourth intercostal space at the left margin of the sternum
- C3: Midway between C2 and C4
- C4: Fifth intercostal space at the left midclavicular line
- C5: Left anterior axillary line at the horizontal level of C4
- C6: Left mid-axillary line at the horizontal level of C4

Main menu



By default, the Menu is on the left side of the screen. If you are in the menus or in full screen layout, use these two keys on the keyboard or touch screen to access the main menu and apply the desired settings.



Patient Info



- Enter patient information by selecting this item from the main menu.
- The accuracy of the measurement and interpretation results increases with accurate entering of information such as the patient's age and gender.

Recording



- Pressing this button in front panel or touching it on the screen, starts and stops the recording operation.
- Make sure the paper is well placed.

Rec. mode



Use the Rec mode menu to set the recording mode (Auto, Manual or Rhythm).

Rec. setting



Use the Rec setting menu to set the recording time, paper speed and gain.

Data management

Save



To save the recording information in Auto and Rhythm modes in the system's internal memory, enter the User menu and activate the Save option.

Archive



- Use the Archive menu to review and record the stored signals.
- This information can also be exported via the USB port.

Measurement & Interpretation



- If measurement is enabled, the values of cardiac parameters are calculated and the interpretation of possible abnormalities is reported at the end of the recording.
- This feature is based on the algorithms of the University of Glasgow.

After Sales Service: +98 21 73098000, +98 912 1977157.

Fax: +98 21 77960761

www.saadatco.com

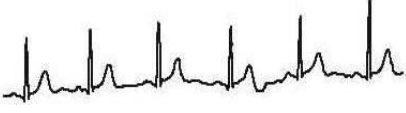

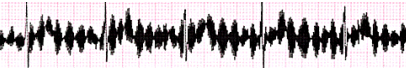
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Problem	Possible Cause	Solution
<p>There is irregular up and down shifts in ECG waveform from baseline</p> 	<ul style="list-style-type: none"> ● Various electrodes are used together. ● Loose connection of electrodes to lead wires. ● Electrodes are placed on bony site of body. ● Unclean or sulfated electrodes. ● Insufficient gel is applied to electrodes. ● Patient skin is not prepared. ● Abnormal patient breathing. 	<ul style="list-style-type: none"> ● Use similar electrodes. ● Check connection of electrodes to lead wires. ● Check proper placement of electrodes. ● Clean electrodes after each use. ● Apply sufficient gel. ● perform actions before recording (Patient preparation chapter). ● Relax patient in a comfortable position. ● If the problem still persists, use Drift filter.
<p>High frequencies and muscle artifacts make ECG signal noisy. (This may occur concurrently with AC noises)</p> 	<ul style="list-style-type: none"> ● Patient has stress or is in an uncomfortable condition. ● Patient feels cold and starts shaking. ● Patient's limbs are not placed properly. ● Bed dimensions are not suitable for comfortable placement of patient hands and feet. ● Limb electrodes are attached tightly. 	<ul style="list-style-type: none"> ● Relax the patient. ● Warm the patient with a suitable blanket. ● Check electrodes connection. ● If the problem persists, use Low pass or EMG filter. ● If the problem still persists, take the following actions to reduce AC noise.
<p>Noisy ECG signal due to AC power interferences</p> 	<ul style="list-style-type: none"> ● Electrodes are placed on bony site of the patient body. ● Unclean or sulfated electrodes. ● Insufficient gel is applied. ● Contact with metal parts of bed, trolley, etc. ● Lead wires, patient cable or power cable fail to make connection. ● There are other electronic devices in the vicinity of the electrocardiograph. ● Improper ambient light for example using fluorescent lamp in the room which ECG record is taken. ● Improper HUM filter. ● Improper Earth system. 	<ul style="list-style-type: none"> ● Check electrodes and lead wires connection. ● Check that lead wires are not tangled or connected to ground. ● Check that the patient does not contact the metal parts. ● Check that patient cable and power cable are not tangled. ● Turn on the HUM Filter. ● If the problem persists, unplug the power cable (the device runs on the battery). ● If the problem still persists, noise source may be other devices, room or its earth system. As a result, this room is not suitable for ECG recording.