

CRITICAL SOUND COMPONENTS IN MEDICAL APPLICATIONS

Supported by Sonitron

LIFESAVING MEDICAL EQUIPMENT

Every day there are millions of people in the world who are in danger or in a critical state. The use of medical devices can help those people to stay alive. In fact the use of medical equipment is of vital importance as it shows the current state of the patient, so nurses and surgeons know when to intervene. Warning sounds are essential and "key one components" in these lifesaving medical equipment.



Respiratory care

One of the best solutions to help adults or pediatric patients, to manage their breathing process at home, is the use of home care ventilator.

This breathing monitor can offer a solution for sleep-therapy, respiratory medicine delivery and home respiratory care. The analysis tool will warn the patient about his breathing situation by simultaneous listening and visual representation of the breathing sounds.

Premature babies who suffer from a breathing disorder can be helped. The neonatal respiratory system works together in harmony with the baby due to the synchronization and continuous adaptation features. By this, nurses can note the breathing, heart rate and sounds of the neonatal care patient.



Point-of-care testing

POC tests are designed to be used at or near the site where the patient is located and are performed outside the physical facilities of the clinical laboratories.

A classic example of the POC testing is the blood glucose meter which measures the blood sugar level of a diabetic patient.



Importance of sound component

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Sonitron "critical soundcomponents" issue a loud, robust and reliable warning signal in dangerous situations on life support systems. In all described medical applications, Sonitron recommends the use of the "Standard-series" and "Smac-series", to warn for life danger.



Infusion pump

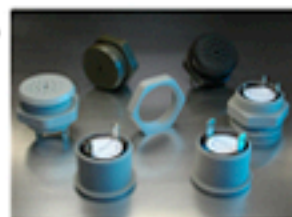
The infusion pump handles any medications, nutrients and other fluids in controlled amounts into a patient's body. Many infusion pumps are equipped with safety features, such as alarms or other operator alerts that are intended to warn in event of a problem. Some pumps are designed to alert users when air or another blockage is detected, others are designed to alert the user when there is a risk of an adverse drug interaction, or when the pump's parameters are outside of specified safety limits.

Anesthesia cases

Modern surgery is possible because of the development of safe and effective anesthesia. Anesthesia equipment is often used by medical professionals during surgical procedures to prevent a patient from feeling pain and to relax the surrounding muscles. During the procedure, an anesthesiologist will monitor the patient's vitals to ensure their well-being and regulate the amount of anesthesia being administered. However, doing both simultaneously can be difficult if a facility's monitoring equipment is not user-friendly.

Standard series medical history

Patient's name	<i>Standard series, Standard SVC, Standard SRA</i>
Blood group	<i>Standard series</i>
occupation	<i>2500 Hz - 3500 Hz</i>
Age	<i>min. 2000 hours (@21°C @12 Vdc)</i>
Body temperature	<i>-40°C to +85°C</i>
Blood pressure	<i>73dB - 98dB (@1m @12Vdc)</i>
Diagnosis	<i>0.7Vdc - 35Vdc</i>
Weight	<i>13g - 24g</i>
Status	<i>continuous/intermittent/sweep/ cricket/warbler</i>
Medications	<i>pins/fast-ons/wires</i>
Medical doctor	<i>Sonitron nv.</i>



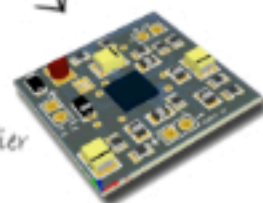
Medical standard IEC 60601-1-8

IEC 60601-1-8 contains basic requirements for the audible warning sound in specific medical equipment. The medical acoustic standard requires that an individual sound pulse must have a fundamental frequency between 150 and 1000 Hz with at least four harmonic sounds between 300 and 4000 Hz, all within 15 dB of the fundamental frequency sound level.

Sonitron can offer a specific medical speaker that reaches these requirements. Figure 1 shows a visible example of such an audible sound. The three priority condition warning sounds can be made by using an intermittent square wave with different amplitudes.



Speaker



amplifier

To help you select the best & the most robust reliable sound component...
Use Sonitron critical components to warn you about life danger!