

Using RoHS to Bring Electronic Audible Alarms into the 21st Century

By Dan O'Brien, Outside Sales Engineer, Mallory Sonalert Products, Inc.

Even though the RoHS European deadline of July 1, 2006 has passed, many U.S. companies and even entire industries still do not know or care what RoHS means (see the RoHS primer at the end of this article for an introduction to RoHS). While there are numerous U.S. based companies that can typically ignore the various edicts that periodically come out of Europe as their entire customer base is in the U.S., these companies will not be able to ignore RoHS too much longer because there are several U.S. states that are considering RoHS-like proposals. Once individual states (such as influential California) start adopting RoHS type requirements, large Distributors and OEM's will mostly likely require that all their vendors supply only RoHS compliant product, as they will not want to have to segregate inventory or production based on which U.S. state their customers are geographically located in.

The first action item of every company when they find out that their products need to be RoHS complaint is to assemble a project team to figure out what needs to be done and to lay out a plan of action. The composition of this team could be as simple as a couple engineers and a buyer, or the team could be more strategic in nature and include representatives from many different departments. The potential benefit of a strategic team is that it may very well uncover opportunities that can completely change the direction of a product line. An example of where this happened is with an electronic audible alarm product line that has been in existence for nearly 40 years.

Audible Alarms & the Marketplace

Electronic audible alarms are all around us and are important to ensure our safety. You hear them chime when you get into and out of an elevator, you cringe when you hear the sound of an alarm clock going off, and you are wary when you hear the beep-beep of a garbage truck backing up.

Panel mount electronic audible alarms were introduced by The P.R. Mallory Co. the late 1960's, and customers have come to expect that the same audible alarm models will be available for 10, 20, even 30 years. As a marketplace example of this expectation, the first audible alarm model introduced in 1968 was assigned part number SC628. This panel mount type alarm had a voltage range of 6 to 28 Volts DC, a medium sound level, and a continuous warning sound. This model is still available today with nearly identical physical and performance characteristics. This is a blessing for durable equipment manufacturers that have to periodically re-furbish their equipment. They can be confident that at least the audible alarm model can be re-ordered without hassle. However, this marketplace expectation for the audible alarm producers to have continuity in their product offering has created an environment where innovation can be very slow to adopt.

RoHS Changed the Rules

Electronic audible alarms are often considered "simple components" by system level designers and buyers. In reality, these alarms are complex electro-mechanical assemblies that use just

about every kind of circuit component from resistors and capacitors to various types of IC's. Just like everyone else working on the RoHS issue, audible alarm engineers quickly found out that meeting the RoHS requirements was not always as simple as calling the component suppliers and asking for an exact RoHS replacement. Many times, existing tooling or materials could not be adjusted to produce an exact "RoHS" copy of an existing component. Because of this realization that RoHS had now changed the rules for keeping audible alarm designs identical year after year, the audible alarm RoHS project team looked to see how this situation could be turned into an advantage.

What Dreams are Made Of

Imagine that a hundred ideas have been gathered over the years on how to improve something, but these ideas could never be implemented. Now imagine what would happen if all these ideas could be pulled together and implemented all at once. In the case of audible alarms, the result of pulling these numerous backlogged ideas together is the new RoHS compliant Mallory Sonalert "Solutions" line of panel mount audible alarms.

At first glance, these new panel mount alarms look similar to past alarms. However, closer inspection of the physical package and specifications begins to show the many vast improvements. The most obvious physical change is that the large metal blade terminals that have been coming out the back of the alarms for nearly 40 years have been upgraded to a screw block terminal system. This new termination system is finger-proof safe (a quantum leap in safety for AC voltage

users), and will save customers both installation time and labor (\$\$).

Other improvements include a standard package size that does not change across the various models, and four different sound level categories that range from soft to extra loud. Future models in this series will feature an embedded microcontroller which will turn these alarms into "smart" alarm devices that can interact with the environment and the systems that they are serving.

One of the best improvements in this new audible alarm series is more subtle. By redesigning the audible alarm from the ground up, future changes to the alarm design can be made very quickly. For example, whereas it previously could take anywhere from 8 to 12 weeks to develop a new audible alarm model from scratch, that cycle time has now been reduced to 2 to 4 weeks.



Primer- What is RoHS?

RoHS is a directive issued by the International Electrotechnical Commission (IEC). The RoHS Directive stands for "the restriction of the use of certain hazardous substances in electrical and electronic equipment". This Directive bans the placing on the EU market of new electrical and electronic equipment containing more than agreed levels of

lead, cadmium, mercury, hexavalent chromium, polybrominated biphenyl (PBB) and polybrominated diphenyl ether (PBDE) flame retardants. For most electronic products, the key to meeting the RoHS directive is removing the lead from the product. The implementation date for this directive has already passed, so any “new” products going into the European marketplace must meet this directive. Of course, there are various exemptions for products types and even whole industries that were written into the directive. Companies only need to self-certify that they meet the RoHS directive, so the services of outside testing agencies are not required.

For more information, contact:

Mallory Sonalert Products, Inc.
4411 S. High School Road
Indianapolis, IN 46241
Phone: 317-612-1000
Fax: 317-612-1010
Email: info@mallory-sonalert.com
Web: <http://www.mallory-sonalert.com>