

Professional Sound Corporation Uses NKK Switches to Help Create Extreme Reliability in Portable Sound Equipment

Professional Sound Corporation (PSC) has designed and manufactured highly portable, rugged audio equipment for the television and motion picture industries since 1986. The Valencia, California based company's products have been used all over the world to capture sound for everything from television shows, commercials, newscasts and major sporting events to documentaries, feature films and corporate videos.

The rigorous demands placed on PSC's equipment present unique switching challenges that NKK's switches have helped to overcome.

Challenges

From audio mixers to distribution amplifiers, PSC's products are specially designed for use in the field. For example, they are often slung over a sound technician's shoulder as he treks through the jungle during the filming of a reality television show, or tossed in and out of a news van as a broadcast team keeps up with daily headlines.

"We never know exactly where our equipment will go, but we do know it will be used on the go," said Ron Meyer, president, PSC. "Because of this, our products must be made as small and lightweight as possible."

Despite its compact, portable nature, PSC's equipment must also be feature-rich.

"In most locations where our products are used – from mountain tops to stadium sidelines – the ability to carry one piece of equipment to get the job done as opposed to two or three is invaluable to our customers," Meyer added.

This means an incredible amount of functionality must be condensed to fit into a very small package. For instance, PSC must take the same core functionality of an in-studio audio mixer that could take up half a small room and put it in a package no larger than a laptop computer.

In addition, and perhaps most important, PSC equipment must be capable of withstanding even the harshest of environmental conditions.

"Our equipment has been used on every single continent and is found in every kind of environment possible," Meyer added. "From the Sahara Desert to Mount Everest and everywhere in between, it is exposed to a vast range of temperatures, dust and humidity."

Despite this, PSC's equipment must work without fail every time their customers call on it.

"If a piece of our equipment fails, film production can come to a complete standstill," Meyer said. "You've also got to consider that because our equipment is used in the field, replacement parts aren't usually within reach. This all equates to a lot of lost



Photos courtesy of Professional Sound

time and money. In many instances, it can even result in our customers – who are often freelance sound specialists – losing their contracts."

These three factors – compact design, high functionality and extreme environmental exposure – create a perfect storm of a design challenge.

"Because our products are compact but feature-rich, we have to use miniature switches on them to make everything fit," Meyer added. "However, by the nature of their size, miniature switches can be a bit delicate. This, combined with where and how our products are used, means switch failure and subsequent equipment failure is a real possibility."

Solution

PSC's designs therefore call for miniature switches capable of standing up to the same abuse as the equipment they are used on. Early on, PSC tried switches from C&K and TE Connectivity/Alcoswitch.

"The simple fact of the matter is that the switches were breaking," Meyer said. "They just could not stand up to the demands our customers were putting on our products. The switches were the weak link in our products' reliability."

In searching for a solution, Meyer saw switches from NKK Switches used on a competing company's product and was impressed.

"We switched to NKK Switches 25 years ago and have never looked back," he added. "They're just that good. I'm convinced no other company makes switches good enough to stand up to our customers and the places they take our equipment."

NKK's B Series of miniature switches can be found on nearly all of PSC's field audio mixers, distribution amplifiers, press boxes and power supplies.

"These switches are remarkably dependable," Meyer said. "Our customers use them every day in extreme temperatures, dust, dirt and rain and they just keep going and going; they're the Energizer Bunny of switches."

Meyer said NKK's B Series has stood up to his customers' rigorous demands because of three primary NKK features: an excellent mechanical design, a very good seal and ingenious self-cleaning contacts.

"We're also starting to use NKK's G Series," Meyer added. "I was really skeptical when I first saw it because it is so small. I said to myself, 'I know I can break that thing.' So, I put it in a PanaVise and pushed on the actuator with everything I had. I ended up with a bloody thumb, but no broken actuator. They're now one of my favorite switches, and my customers love them, too."

Meyer added that his experience thus far with NKK's G Series not only illustrates the switch's quality, but also the quality of NKK's customer service.

"The G Series comes with the option for red, green or amber illumination," he said. "But I wanted blue, and they're doing it for me. No matter the size of customer, NKK seems to bend over backwards to meet their needs. That's been my experience, at least."

According to Meyer, in 25 years at most two dozen out of the literally thousands of NKK switches they have implemented in their products have failed, and these failures were all the result of extreme impact or other extraordinary circumstances.

"The fact that we don't hear from our customers until they're ready to buy more equipment from us is the best feedback we can receive from them," he concluded. "NKK's switches play a huge role in that. I build our products around them and simply don't even think about them again because I know they will just work."

About Professional Sound Corporation

Professional Sound Corporation (PSC) is a leading manufacturer and distributor of professional audio products for the film and video industries. Since 1986, PSC has provided excellence in product engineering, assembly and service.



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PSC's catalog of products covers virtually every aspect of production audio for film and video, including: audio mixers, boom poles, phone interfaces, RF antennas, microphones, microphone power supplies, distribution amplifiers, equipment carts, cables, and adapters. For more information, visit: www.professionalsound.com.

About NKK Switches

NKK Switches designs, produces and sells the industry's most extensive selection of electromechanical switches setting the standard for quality, stability, and reliability in switch solutions. NKK provides a full suite of customizable solutions that include design, programming, and value added support by combining flexibility, expertise, and a commitment to our partners' success.

NKK's switches turn on millions of products around the world every day by offering more than 3.5 million different toggle, rocker, pushbutton, slide, rotary and keylock switches to illuminated, process sealed, miniature, specialty, surface mount and programmable switch devices. For more information, visit: www.nkkswitches.com.