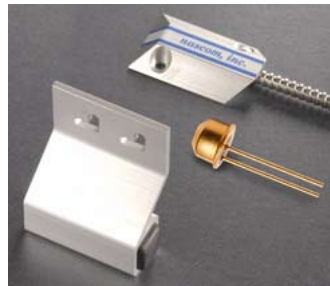


New High Security Switch Nabs Detainee

Late one evening, Joe decided to sneak out of the minimum security home for wayward youths where he was staying. He had heard from his friends that they had been able to fool the security sensor in the door by placing a magnet next to it, and that he could sneak out undetected. Having procured a magnet, he placed it on the sensor and left his room. Moments later he was caught and sent back. What Joe didn't know was that the door security switches that had been so easy to defeat previously had been changed to a new type of high security switch that sound the alarm when someone attempts to fool the device with a magnet.

Hard to believe, but magnets are the kryptonite of most standard security systems, because such systems are often built around the ubiquitous reed switch. Because a reed switch is magnetic, its contact blades respond to any nearby magnetic field, become temporarily magnetized, and close. This means that a strong, externally positioned magnet near the switch will override the switch's own weaker magnetic field. Armed with this information and an inexpensive magnet, detainees – or worse yet, burglars - are able to come and go as they please through doors and windows that are supposed to remain closed.

“In a facility like this, an individual in a room can see the switch, so he goes up and gets his big speaker magnet, clunks it on the door and exits,” says Marc Petersen, operations manager at Westec, the Western Michigan company called in to upgrade the security equipment at the facility.



A single high security switch with Magnasphere technology provides facilities with a level of perimeter security required by U.S. government, at a fraction of the cost and size. Pioneering the new technology in the marketplace is Nascom, Inc., a longtime innovator in magnetic switch technology.

“It's pretty well known that you can defeat most common security switches with a magnet,” says Petersen. “Obviously the individual who tried to get out of his room in this specific case knew how to fool the system. I've run into it quite a few times over the years.”

What made this incident significant is that Petersen had recently installed some new high security switches to replace older bias type switches that had failed. These high security switches are unique in that they use a brand new technol-

ogy that is designed to automatically sound the alarm when a magnet is used to defeat the system.

Petersen first found out about the youth's attempt to sneak out of the room on a subsequent service call to the facility.

“The facility managers thanked us because the

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high security switches did what they were supposed to do,” says Petersen. “The alarm let them know that a youth had left his room after hours and they were able to take action and handle the situation before it became a bigger problem.”

According to Petersen, this particular facility can't legally force individuals to stay, but might face certain liability issues if a youth were to leave unnoticed and later was injured or committed a crime. To prevent this from happening, these facilities are required to monitor the whereabouts of residents to ensure that they are on premises or where they are supposed to be.

For this reason, the biggest complaint from facility managers regarding the previously installed security system was the ease of which the switches could be defeated.

“The individuals at this facility were pretty ingenious in the way they would use the magnet,” adds Petersen. “A lot of the original security switches were surface mounted so they were easy to defeat. Later, we decided to change to a flush mount inside the doorframe, but they would take refrigerator magnets and slide them into the door frame.”

Westec originally installed bias type switches, believing they would provide more security than a normal reed switch. Biasing is when a reed switch is modified by adding a second magnet on, or in very close proximity, to the reed switch. Unfortunately, bias type switches are prone to failure; can false alarm if the switch is jolted – such as when a door slams; and are still not effective enough protection against magnets. In fact, Petersen estimates there is still a 50/50 chance the switch will be defeated if a magnet is used.

“At the time we felt we had the best switch for the application, but in hindsight the bias switch was not 100% appropriate for this job,” says Petersen. “What we found after the system had been in for about a year is that a number of bias type switches failed.”

Looking for a better solution, Petersen contacted Nascom of Vancouver, Washington (www.nascominc.com). During the call, a represen-



Nascom high security switches overcome the inherent weaknesses of the reed switch, while retaining the useful features such as ease of installation, smaller size, and aesthetics. This brand new switch technology was credited for helping capture an adolescent who was trying to sneak out of a minimum security facility.

tative from Nascom told him about the new Magnasphere switch technology, which is at the heart of their new high security switch. This technology is the reason these security switches are not susceptible to magnetic defeat.

The technology has already garnered attention, having been named best of the 2002 International Security Conference Show in the Intrusion Detection category, and winning the Gold Medal in the Sensors category at the 2002 Sensors Expo Show.

Although they carry many different styles of security switches, Nascom is currently the only switch manufacturer offering a high security switch incorporating Magnasphere technology.

At the heart of the high security switch is a tiny magnetic ball floating freely inside a small metal housing with two protruding wires. The switch remains closed only when a magnet is directly under the switch so it can pull the magnetic ball into contact with the case and electrode closing the switch.

In fact, a strong magnet placed near the switch has the opposite effect of the reed switch, as the magnetic force dislodges the ball and triggers the alarm. This design eliminates the possibility of magnetic tampering and provides quite a surprise for the escapee or - if installed in a home or business – an unsuspecting burglar.

For this particular project, Nascom also made a custom modification: they combined Magnasphere technology with an additional internal element Westec requested that was needed for their system.

“The new high security switches were much bet-

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ter than our original solution,” says Petersen. “They really solved the problem.”

One of the advantages of the Nascom high security switch is that it comes in the same size and shape package as common reed switches. Besides making it impossible for those who want to defeat the system to detect a visual external difference, this also means the switch is smaller and more aesthetically appealing. For Westec, it simplified installation and retrofitting of the new switches into the system.

“We were able to use the existing wiring in the existing hole so it was a nice, clean swap out. We didn’t have to re-drill. We just pulled the old switches out and installed the new ones,” says Petersen.

Petersen, for one, has had his fill of failures with overhead door switches. “I have been looking for a higher quality switch because at the end of the day that means less service calls, says Petersen. “As the installer, we have over 100 overhead doors in some locations so that is a big deal.”

For more info about using the Nascom high security switch in your alarm or security business, or to order, write to Nascom, Inc. at 14511-C N.E. 10th Ave., Vancouver, WA 98685; call 800-843-5530 or 360-546-2222; fax 800-727-4041; or visit www.nascominc.com on the Internet.