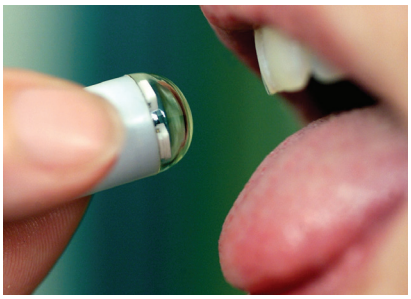
NEXT-GEN MEDICAL DEVICES INCORPORATING
RedRock® TMR Magnetic Sensor Technology

Whether monitoring fluid flow, liquid level, proximity, anti-tampering, or enabling "wake-up" applications, next generation measurement and detection device requirements dictate sensors to be smaller, more sensitive, and to consume the lowest possible power.



RedRock® TMR sensors (offered by Coto Technology, Inc.) offer the lowest power, highest sensitivity, smallest packaged magnetic sensors on the market – addressing the many constraining requirements of next-generation medical devices. RedRock® TMR magnetic sensors are the #1 replacement for reed switches as well as a top consideration for those currently using Hall Effect as, in addition to its much sought-after inherent qualities, RedRock® TMR technology is robust, reliable, has short leadtimes and is extremely cost effective. All combined, TMR's features allow for unprecedented flexibility to design engineers – giving them complete freedom to build their ideal systems.

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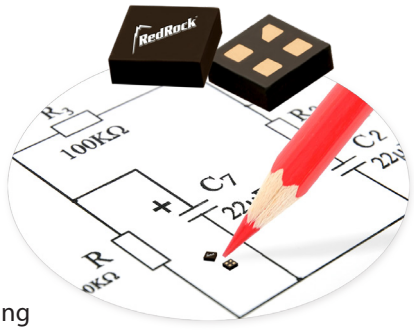
Medical applications benefitted by TMR technology include portable and battery-powered devices such as ingestibles and implantables that are hermetically sealed and, therefore, need a way to be triggered without compromising their protective encasement. Many of these devices (such as capsule endoscopes) need to be able to be stored in standby mode on a physician's shelf for up to 18 months before being used; battery power conservation is critical to ensure there is a sufficient charge left in the device when it comes time to activate it. The small size of these devices and their hermetic seals (which enable them to survive the gastrointestinal tract) necessitate a tiny, contactless means for "waking up" the microprocessor from the outside, (e.g. presenting a small permanent magnet near where the sensor is installed inside the device).

Insulin management via continuous feed insulin pumps is another critical medical application. These battery-powered pumps are worn on the belts of diabetic patients who have implanted micro-syringes continuously measuring blood sugar levels and administering insulin doses as needed. The insulin reservoirs need to be replaced when they are empty and the pump needs to both recognize when the reservoir is empty, and when it is not present in order to avoid complications. The RedRock® TMR magnetic sensor can provide a seamless means of detecting the replacement of the insulin reservoir by responding to the presence of a small magnetic shunt on it.



Hearing aids also use magnetic sensors as a means of mode switching, whether it's for turning the device on or off, performing diagnostic checks, or re-tuning the hearing aid's response when a telephone speaker is brought near the ear. Hearing aid usage is expected to increase drastically over time; meanwhile the device size continues to decrease as users transition from "behind-the-ear" to "in-ear" designs that cater to those who need help hearing but do not want the associated stigma of a visible device. Those same consumers also want maximum battery life. The decrease in size, emphasis on prolonged battery life, and need for a long air gap activation distance are all answered by RedRock's ultra-miniature LGA-4 package, low average current consumption, and high sensitivity, respectively.

In addition to a full selection of TMR magnetic sensors, Coto Technology can supply critical Application Support to design engineers looking to incorporate this technology into their devices. For more information and a free demo, please contact ***RedRock@cotorelay.com***.

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