



# Application Alley

## Smart Wireless Sensing

*WE MATTER | WE CONNECT - Smart Home Security*

## Advanced Electronic Components Bring Smart Home Security Features Alive

With the advent of “smart” technology, integrating wireless/connected functionality and control into products that serve purposes in homes, cars, appliances, and more has grown tremendously. Companies and the market continue to grow their interest related to smart technology features, and products that are connected. With the rise of the “Internet of Things”, the demand for products to have these smart capabilities also increases the need for components to enable such performance.

As smartphone and other handheld technology use have seen tremendous growth in recent years, an accompanying shift has occurred in the home security market. Once comprised of fairly simple systems to detect intrusion and fire, modern home security systems encompass a far broader range of tasks, most of which allow remote access and control from users’ mobile devices. As with historic home security systems, modern “smart homes” rely heavily on magnetic sensors and other electronic components to generate and relay messages.

## WE HELP SECURE - The evolution of sensors technology in the Security market

Conventional early home security systems were

fairly simple, relying on wired sensors to report conditions as either “normal” or “alarm” state to a central control panel. These sensors were normally intended to detect fire or intrusion only.

Sensors to detect intrusion typically incorporated a magnetic sensor, such as a reed switch, and an accompanying magnet on doors, windows and other possible points of entry. As the door or window was opened, the magnet and switch would lose contact, changing the state of the sensor from “normal” to “alarm”.

Fire and smoke sensors typically utilized optical, ionization, and temperature detection technologies to trigger an alarm state. Many also used magnetic reed switches in “push to test” and proximity actuation of these sensors.

These sensors communicated via a wired local control panel, which could then report an alarm state to a central station system at the security company and/or local emergency services dispatch locations. Improvements in technology and changes in demand have led to dramatic changes in sensor technology, as well as the introduction of many additional functions for the Smart Home.



## WE CONNECT - Connected Homes, Strong Engineering, and Smart Components

### *Giving consumers control, the market value, and providing components that matter*

One of the greatest changes to home security technology has been the introduction of remote monitoring and control of systems via mobile devices. This fundamental change in the way home security systems are accessed has led to the inclusion of the monitoring of HVAC, power, water, door locking, real time web cam monitoring and more in home security systems' sensors and controls.

Some of the most prominent changes are those that are activated by users remotely to check on the state of their homes. Smartphone access to the systems allows homeowners to remotely change the thermostat set point, check to see if closed doors are locked or even lock them, change window shade positions, turn interior and exterior lights on/off, check whether garage doors are open or to close them, and many other applications. These changes transform home security system into full smart home systems, giving users electronic access to a huge number of the most important aspects of their homes.

Other key additions to home security systems' offerings include monitoring and control of: sump pump levels, primary power usage, HVAC overflow, primary water flow, and home appliances. Nearly all of these systems require magnetic technology in the form of reed switches, Hall sensors and current transformers. Float type sensors are used for some water-level sensing applications and may also use reed switches, electromechanical

switches, or conductive technology. Though these applications are new the basic technologies that make integrating them into smart homes possible is not. Electrical component companies like Standex Electronics have been perfecting magnetic sensor and other electrical component technologies for decades.

Intrusion and fire sensors have remained largely similar to those used in home security systems from past decades. Most updated sensors are now wireless, relying instead on small battery packs, due to increased reliability and ease in installation. In addition, some versions of the magnetic position sensors in doors and windows now use magnetic Hall sensors and their derivatives, which can sometimes be available in smaller mechanical packages than other types of magnetic sensors.

### Why Magnetic Sensors?

Magnetic sensors have some unique features that are very useful in home security applications. Reed switches and Hall sensors are capable of providing millions of trouble free operating cycles. Both of these types of components sense the magnetic field generated by common permanent magnets, which are relatively inexpensive. In addition, Reed switches can be supplied with higher open circuit breakdown voltages, increasing the reliability of sensors to withstand lightning strikes. Reed switch-based sensors, if configured properly, draw no power until an alarm condition exists. In the case of wireless magnetic sensors, all sensors will draw some power. The power usage in these cases is small because the reporting is not continuous; the sensors are "polled" by the control panel for very short periods of time.



Magnetic sensors and other electrical components still matter

If anything, changes to the demands on a home security system have led to increased usage of magnetic sensors, like reed switches, and other electrical components. Standex Electronics is one company where the quality and reliability of magnetic sensors and electrical components for home security systems is tantamount.

Standex Electronics brings to the table a broad experience base in many of the sensor technologies needed for the modern intelligent home monitor and control system, including magnetic reed switches, Hall sensors, conductive technology, and current transformers used to measure power usage within the home.

These sensor technologies are a large part of making home security and smart home systems work, but they aren't the only way Standex Electronics's

contributions to home security systems matter. In addition, the company provides many of the building blocks other than sensors, such as power transformers and relays, used in the controls of appliances and security system control panels. As smart home technology continues to advance, cutting edge sensors, switches, and other electrical components like those manufactured and sold by Standex Electronics will continue to be necessary parts of effective security systems.

### Let's talk!

More information about Standex's capabilities for designing and executing customized electronics solutions, as well as about specific industry applications, the company's history, and more can be discovered on the Standex Electronics website at [www.standexelectronics.com](http://www.standexelectronics.com), or email [info@standexelectronics.com](mailto:info@standexelectronics.com).



## About Standex Electronics

Standex Electronics is a worldwide market leader in the design, engineering, and manufacture of standard and custom electro-magnetic components, including magnetics products and reed switch-based solutions.

Our magnetics offerings include planar, current sense, and conventional low- and high-frequency transformers and inductors. Reed switch-based solutions include Meder, Kent, and KOFU brand reed switches, as well as a complete portfolio of reed relays, and a comprehensive array of fluid level, proximity, motion, water flow, HVAC condensate, hydraulic pressure differential, capacitive, conductive and inductive sensors.

We offer engineered product solutions for a broad range of product applications in the transportation, automotive, medical, test and measurement, military and aerospace, aviation, HVAC, appliance, security and safety, and general power and industrial markets.

Standex Electronics has a commitment to absolute customer satisfaction through a partner, solve, and deliver approach. With a global organization that offers sales support, engineering capabilities, and technical resources worldwide – we implement customer driven innovation that puts the customer first.

For more information on Standex Electronics, visit us on the web at [standexelectronics.com](http://standexelectronics.com).

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