



World Leader in Capacitive Proximity Sensing



Kwikset Introduces New Deadbolt with Azoteq ProxSense® Touchscreen

Azoteq's technology makes SmartCode 916 most secure touchscreen lock available

In a continuous effort to provide innovative security solutions for homeowners, Kwikset®, the leader in residential door hardware, introduces industry-first SecureScreen™ technology to prevent the problem of "smudge" attacks associated with popular touchscreen and touchpad locks. Kwikset is unveiling SecureScreen technology with ProxSense® and a new, cutting edge design to its keyless entry lock platform with the SmartCode™ 916 Touchscreen Deadbolt at 2015 International CES.

With typical touchscreen locks, passcodes can potentially be jeopardized by unwanted guests detecting frequently used numbers and characters from the oily residues left on the touchscreen surface. SmartCode 916 is the only touchscreen deadbolt that prevents this threat by prompting the user to first touch two random numbers in order to display the full screen to enter the access code. Continuous use of the lock masks the correct access code.

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Azoteq enables next generation user interfaces for users to interact naturally with products through capacitive proximity and touch

Jean Viljoen

VP of Marketing for Europe and Asia

Jean Viljoen joined Azoteq in 2000 as a DSP Application Engineer. Mr. Viljoen was one of the key architects who created the ProxSense product line in 2004 and has been involved with the product line ever since. In 2005, Mr. Viljoen moved into a marketing role and also took on responsibility for the application group at the Paarl Development Centre. Since 2010 Mr. Viljoen has been the Marketing Manager for Europe and Asia where he established a support structure and distribution network for ProxSense.

Mr. Viljoen holds a Bachelor's degree in Electrical and Electronic Engineering from the University of Stellenbosch and an MBA from the University of Stellenbosch Business School.



Jean Viljoen

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Sales contact information can be found [here!](#)

Azoteq Sales Offices

Azoteq has distribution and sales representatives around the globe. But there are three main sales offices that can help assist designers with their capacitive sensing needs. Sales offices and contacts are as follows:

- North America
 - Kobus Marneweck – VP Marketing
- International
 - Jean Viljoen – VP Marketing: Europe & Asia
- Hong Kong
 - Eric Tsang

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“Kwikset is dedicated to finding innovative ways to keep our customers secure and ensure they feel confident in the locks they choose to protect their homes,” said Keith Brandon, director, residential access solutions. “SecureScreen with ProxSense® is another innovative solution from Kwikset that is at the forefront of technology trends and gives homeowners the most secure touchscreen lock available.”



The sleek deadbolt is the latest extension to Kwikset's SmartCode line that provides consumers the convenience of keyless home entry combined with the enhanced aesthetics of a capacitive touchscreen.

Key features new to the SmartCode 916 Touchscreen Deadbolt include:

- **Security:** Kwikset's SecureScreen technology with ProxSense® makes SmartCode 916 the most secure touchscreen option on the market
- **Sleek design:** New, polished touchscreen design and white LED display provides crisp, high-definition illumination, while a significantly reduced interior size increases aesthetic appeal

- **Convenience:** Ability to hold up to 30 access codes allows homeowners to give out different user codes to multiple guests at one time
- **Responsiveness:** An intuitive user interface features a responsive touchscreen that senses contact quickly for fast code entry and unlocking
- **Connectivity:** Kwikset's Home Connect™ technology integration through Z-Wave and Zigbee platforms allows users to pair the lock with other connected products in the home, such as lighting or entertainment systems, and adds the convenience of remote locking and unlocking from a smartphone anywhere in the world

SmartCode 916 Touchscreen Deadbolt with Home Connect Technology will be available for purchase in the professional channel in the first quarter of 2015. Consumers can preview the Zwave and Zigbee integrated SmartCode 916 at CES, while standalone options will be available later this year.

For additional information about SmartCode 916 Touchscreen with ProxSense® Deadbolt, please visit <http://www.kwikset.com/electronics/homeowners/smartcode-916.aspx>.

For information about Kwikset's latest products, please visit <http://kwiksetpresskit.com>.

Getting the most out of your Capacitive Sensors

Designers take several considerations when designing Capacitive Touch Electrodes. Some of these considerations are creating multiple buttons with a small amount of channels. Sliders and multiplexing buttons together achieves this. Sliders can change from a two-channel slider to simulate an 8-button touch controller. Multiplexing channels can increase the number of buttons.

Using Slider ICs

Designers can implement sliders to create multiple buttons. The IQS263 and IQS333 are ICs that have a native slider implementation. For a slider or swipe activation design, the figure below illustrates the electrode design.



Figure 1: Self-Capacitance Electrode Design

The IQS333 and IQS263 implement a three-channel self-capacitance slider to have eight virtual buttons.

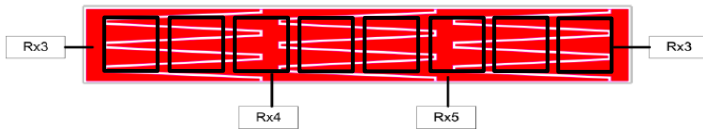


Figure 2: Slider with Eight Virtual Buttons

Multiplexing Buttons

Multiplexing buttons entails combining different channels to create differential buttons. The IQS263 implements six buttons this way and the IQS333 implements twenty-seven buttons.

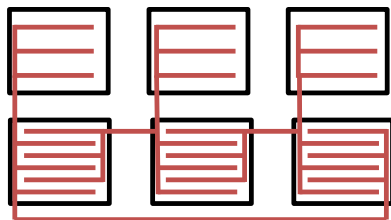
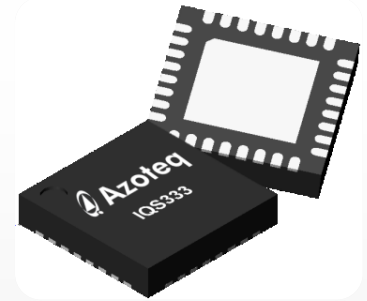


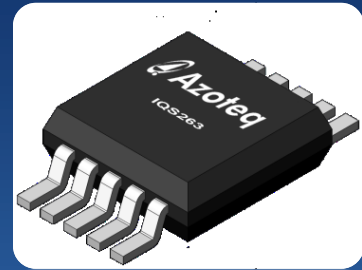
Figure 3: Multiplexed to Create Six Buttons

For more information, email info@azoteq.com



The IQS333 is a Seven Channel Self (Nine Projected) Capacitance IC that also implements sliders/scroll wheels

Azoteq's IQS263 3 Channel Controller with 8-bit Resolution Slider



The IQS263 uses three channels to implement three buttons, a slider, or a scroll wheel

The IQS263 ProxSense® IC is a 3-channel projected (or self) capacitive proximity and touch controller with best in class sensitivity, signal to noise ratio and power consumption. Other features include automatic tuning for sense electrodes, internal reference capacitor and internal regulator to reduce total system cost.

Full Datasheet found [here!](#)

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