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A hands-free, germ-free future

A look into the offerings of residential touchless faucets.

Photo credit: Kohler Co.

Kohler's Sensate touchless kitchen faucet features a sensor located underneath the spout and requires a deliberate motion to activate it.

Kitchen and bathroom faucets and handles are two of the germiest surfaces in the home — even more so than the toilet seat. A survey of 35 U.S. homes, conducted by the Hygiene Council, shows the kitchen faucet handle has 13,227 bacteria per sq. in. and the bathroom faucet handle has 6,267 bacteria per sq. in., whereas the toilet seat has 295 bacteria per sq. in. In an effort to reduce the spread of germs, touchless faucets were created.

The first automatic faucets were seen in airport restrooms in the 1950s. These faucets then slowly moved to commercial buildings. According to many plumbing manufacturers, a touchless faucet — also known as hands-free faucet, electronic faucet, motion-sensing faucet or infrared faucet — can inhibit the spread of germs and help save up to 70% of water. With more states adapting low-flow codes, the initiative to reduce the amount of wasted water is becoming more important.

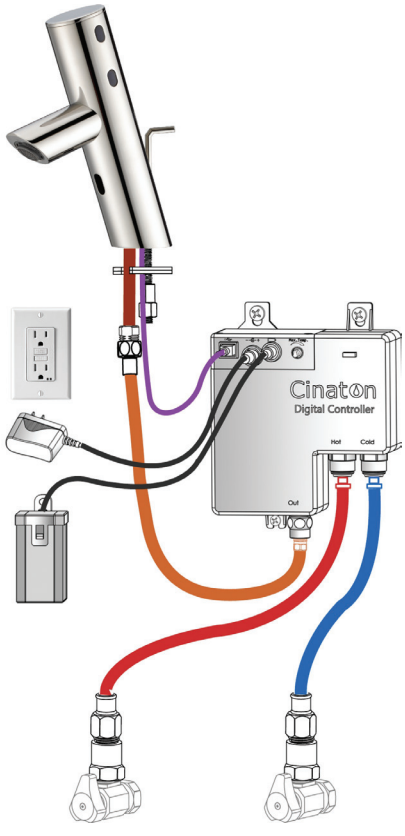

Photo credit: Cinaton

Cinaton's iSense Touch-free Intelligent Faucets require an electrical outlet to connect to the control box. Four backup AA batteries for the AC adapter are included with the faucet kit.

A hands-free, germ-free future

Photo credit: Moen

Moen's MotionSense features two infrared sensors — a ready sensor at the base and a wave sensor at the top of the spout.

Most recently, hands-free faucets have been moving into residential spaces. "Consumers got used to having touchless faucets in commercial settings, so a transition into homes only seemed natural," says **Tom Tylicki**, Moen's senior product manager for kitchen.

The touchless function can reduce germ spread, especially when handling raw foods. Also, not touching the faucet or handles results in less of a mess, which means less cleaning.

"Busier lifestyles demand more convenience," notes **Danyel Tiefenbacher**, brand manager at Pfister. "Faucets with touch-free technology have many advantages over standard and touch-operated faucets. These new faucets help you speed through food prep, dishwashing and cleanup."

Touchless faucets are great for kids. "I have a five-year old and she thinks it's great because she can stick a glass under the faucet and get water without having to turn the handle, which she can't reach," Tylicki says. "It allows you to be efficient and perform tasks with greater ease."

Location, location, location

Typically touchless faucets are controlled by a single electronic sensor to turn the water on and off at a preset temperature. This could present some challenges for residential applications:

- Most applications in the home require various temperature adjustments.
- With a conventional touch-free faucet, the user must keep a hand within the sensor detection zone to keep the water continuously flowing. In a home, continuous flow is a necessary function for the kitchen and bathroom faucet.
- A residential touch-free faucet needs to be able to allow users to work in the vicinity of the faucet without triggering the water flow sensor and wasting unnecessary water.

These challenges can and have been addressed by most manufacturers. Every touch-free faucet is different. They can be battery- and/or AC-powered. Sensors are not always in the same location. Moen's MotionSense faucets feature two sensors to set water in motion — a ready sensor at the base for quick tasks and a wave sensor at the top of the spout. There's also a two-min. timer that will shut off the water in case the faucet is accidentally left on. The sensors also can be deactivated.

Kohler's Sensate touchless kitchen faucet features a sensor located underneath the spout and requires a deliberate motion to activate it. Any temperature setting can be used with the sensor — with no preset temperature, users can adjust as needed.

New to the residential touchless market, Pfister's Selia and Pasadena kitchen faucets feature a sensor at the base with SmartStop, which automatically shuts off the faucet after two min. of inactivity.

Not all touchless faucets have a placement-sensitive sensor. Delta's Touch2O.xt Technology for the bathroom features a 4-in. sensing field around the entire faucet. Once the handle is moved to the "on" position, the faucet automatically responds when a user approaches the sensing field — no infrared sensor is used. Moving hands out of range intuitively shuts off the water flow within seconds. These faucets also can be turned on and off with a touch anywhere on the faucet.

No only do these touchless faucet models have a sensor, many also feature a conventional handle. "In an ethnographic research study, Delta found that while certain tasks in the kitchen benefit from hands-free functionality, a majority of people gravitated to the control and responsiveness of touch activation," explains **Bob Rodenbeck**, research and development director for Delta Faucet. "However, consumers also noted hands-free technology added convenience for repetitive tasks, such as washing hands or rinsing a toothbrush or razor."

Denise Quasius, Kohler's associate product manager for kitchen faucets, comments: "How we interact with the kitchen faucet has changed — touchless and touch kitchen faucets have erupted in the past few years. At this time we only offer the residential touchless faucet for the kitchen. However, we are always investigating new opportunities to meet our customers' needs."

Many of the manufactures interviewed agree hands-free technology has taken off

A residential touch-free faucet needs to be able to allow users to work in the vicinity without triggering the water flow sensor.

Photo credit: Delta Faucet Co.

Delta's Addison collection with hands-free Touch2O.xt Technology features a 4-in. sensing field around the entire faucet and touch activation.

more in the kitchen than in the bathroom, believing the advantages are little more upfront and easier to understand in the kitchen. For example, Moen only offers touchless kitchen faucets.

"You can't just put an IR sensor on a lavatory faucet and expect people to love it," Tylicki notes. "It will take thoughtful design and making sure you are integrating it in the right way. You have to make sure the advantages/features you are giving to the consumers are going to be worth it. However, I can see growth for this in the future."

Lou Rohl, CEO and managing partner of Rohl, agrees the use of residential touchless faucets in the bathroom is happening, but at a slower rate. "Two things will force this to become a more acceptable design element," he says. "One, more and more designers will look at the impact of their designs, specifically in the bathroom, and begin incorporating universal design elements. Two, more and more people 'aging in place' will force the need for hands-free devices."

No hands, no handles

Introduced at KBIS 2011 in Las Vegas, Cinaton's faucets, for both the kitchen and bathroom, were well-received. "Our kitchen and bathroom faucets have the same function designs — completely touchless with no handle," says **Sherry Ling**, sales manager for Cinaton.

The company's iSense technology allows the user to wave his hand over five proximity sensors that perform up to 13 combined functions for full water temperature and flow control, and to save the user's favorite settings.

With no handle, there are two ways to turn the faucet on and off. The first is the Easy Sensor (sensor C) activation zone at the base. The water will turn on when a user's hands or an object is placed up to 8-in. in front of the sensor. It will turn off when the object is away from the activation zone.

The second is the two sensors on the right side of the faucet (sensors A and B). By placing a hand over sensors A and B, the water will turn on and continue to run until it is turned off again. A five-min. safety shutoff feature ensures water will not run continuously if accidently left unattended.

The faucets also feature a pause function.

Rohl also features a completely hands-free faucet for the bathroom. It utilizes a presence sensor which ensures the faucet isn't inadvertently turning on when someone walks by it or if someone happens to be placing something in the sink — which has been noted as a common concern among consumers.

Hands-free faucet technology will continue to evolve and will likely be offered on more and more items through more and more manufacturers. It can already be seen spreading to soap dispensers and beverage faucets. "We currently have four kitchen collections with MotionSense. While I can't speculate on what we may launch in the future, I expect technology to continue to evolve throughout the home," Tylicki adds. "I don't imagine it going away." **PM**

Cinaton

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Touch Free Faucet

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