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How Does It Work?

For an intuitive 3D animation illustrating the KosherSwitch[®], see [here](#).

Like many inventions, KosherSwitch[®] technology employs simple concepts to provide indispensable benefits. Our technology revolves around several layers of Halachic uncertainty, randomness, and delays, such that Halachically, a user's action is not considered to have caused a given reaction. Within the KosherSwitch[®], algorithms operating on the internal micro-controller create all of the patented innovation. Once installed, a KosherSwitch[®]-based device is constantly and autonomously functioning through the cycles detailed below.

When you slide the on/off button, you're moving an isolated piece of plastic. It is purely mechanical, and is not attached to anything electrical (electro-mechanically isolated). This is done at a time when you see a green Status Light, which provides 100% assurance that the relevant components within the switch are inactive. Subsequently, after a random interval, the device will activate and determine the position of the plastic by flashing an internal light pulse. The attached light fixture will be triggered only after the switch overcomes two failure probability processes – one prior to this light pulse and one after it. Halachically, your action is simply the movement of an isolated piece of plastic with no implications of causation.

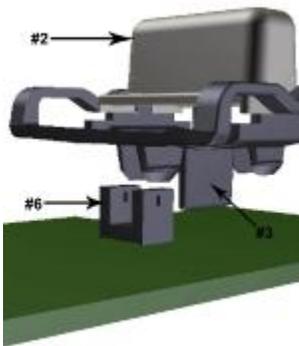
To best understand how the technology works, let's take a closer look at our KosherSwitch[®] Classic wall switch (for a less technical approach, try the analogy; for highly technical, see the full patent). Although the device contains many internal components, the following are the relevant ones for this purpose. We refer to numbered items on the accompanying images using the notation [x]; click on an image for an enlarged view:



Mode Selection door clearly indicating that this device is KasherSwitch®-enabled and certified



Key design elements in the KasherSwitch® Classic provide the requisite distinctiveness ("heiker")



Internal exploded view. The on/off button is not attached to anything electrical and is only hovering in space.

A plastic door displaying the KasherSwitch® logo, clearly indicating that this device is KasherSwitch®-enabled and certified. The door opens [#1], to expose the Mode Selection button [#5 below] and basic instructions on acceptable use.

A mechanical on/off button [#2], that slides and snaps into either an "off" or an "on" position. This button is what's used to indirectly turn the switch on or off, both on weekdays and on Shabbat/holidays. It is critical to understand that this button is completely mechanical and is not attached to any electrical

components. Instead, it is attached to another plastic piece [#3] that has a lip that protrudes into the switch's cavity, and simply hovers in space. When the on/off button is in the "off" position, this lip is in an obstructing position that will block the Light Pulse Pair [#6] (see below); when in the "on" position, it is in a non-obstructing position, allowing a light pulse to pass through.

A Light Pulse Pair [#6], with one side being the transmitter, and the other the receiver. At certain intervals, the KosherSwitch® uses the transmitter to send a light pulse lasting only a few milliseconds, while using the receiver to determine if the pulse of light was received. The pulse will be successfully received when the on/off button [#2] is in the "on" (or non-obstructing) position. In Sabbath mode, the light pulse sometimes fails to function.

A Status Light [#4] that can be in one of three states: off, green, or red. On Shabbat/holidays, the KosherSwitch® may be used only when the Status Light is green.

A Mode Selection button [#5] used to choose the mode of operation. The KosherSwitch® Classic operates in two distinct modes: In Normal Mode, it behaves like a traditional wall switch, turning the attached fixture on/off instantly. In Sabbath Mode, the device must go through one or more cycles, each with a possibility that it will fail to function as intended. (Note that the Mode Selection switch is a regular electrical switch and should only be used when use of regular electrical devices is permissible!)

Normal Mode

In Normal mode, use of the KosherSwitch® mimics a traditional wall switch, when turning the attached fixture on/off is instant and guaranteed. This is because the switch will use the Light Pulse Pair several times a second to send a light pulse and determine if the on/off button is in the on or off position. However, even in Normal mode, the KosherSwitch® is superior than a traditional switch since it does not constitute a prohibited act with the same severity as a regular wall switch.

Cycle logic summary:

Start of cycle.

Status Light: off.

Pause for a fraction of a second.

Light Pulse Pair: the transmitter sends a light pulse and the receiver looks for this light pulse to determine if it was received, depending on the obstructing/non-obstructing position of the on/off button. This step lasts a few milliseconds.

Trigger the attached fixture/circuit into the appropriate on/off state, based on the results of the Light Pulse Pair step (on if the light pulse was received and off if it was not). Do nothing if the attached fixture is already in appropriate state.

Go back to the start.

KosherSwitch® Sabbath Mode

In its Sabbath mode, the KosherSwitch® functions completely differently than in Normal mode, and switching modes can be understood as a virtual installation of a totally different switch. The Status Light which is always off during Normal mode, is either green or red. The cycles which are near-instant in Normal mode are much longer and random in length. The Light Pulse Pair that is constantly pulsing in Normal mode will only pulse a single time at the very end of each cycle. In Sabbath Mode, nothing is ever instant nor is it guaranteed. In fact, the KosherSwitch® will usually have to attempt several cycles before it succeeds in turning the attached fixture on or off.

KosherSwitch® Sabbath Mode includes several key elements:

Unpredictability through random cycle lengths – no way to predict or anticipate how the cycle will behave.

Uncertainty through two random failure probabilities. In each of the switch's cycles, there are two chances that things will fail and that the attached fixture will stay unaffected. This creates two safeiks (Halachic uncertainty): the first, whether or not the light pulse of the Light Pulse Pair will fail; the second, whether the switch will fail in triggering the circuit based on the results of the Light Pulse Pair. There is no way of predetermining how many cycles would be required to overcome for both of these safeiks.

Guaranteed distance: The Status Light is a visual indicator giving insight as to what's occurring "behind the scenes." Green means "safe to use" while red means "don't use because something is about to happen." Here's why: During the random delay while the Status Light is green, we have assurance that the device is totally dormant or "dead". Several seconds prior to "waking up" the Status Light will illuminate red to warn that some activity is imminent. This provides a way of distancing any user activity from an impending light pulse by the Light Pulse Pair. Much like a traffic light – green means go, and red means stop. The Status Light also serves as a Halachic and psychological "safety net", providing a buffer zone between a user's action and any future light pulses that may or may not be blocked by the plastic on/off button.

Cycle logic summary:

Start of cycle.

Status Light: green.

Random delay. During this time, use of the mechanical on/off button is permissible. During this delay when the Status Light is green, the user is presented with a visual cue providing the assurance that the

device is totally dormant or “dead” and that one’s action is only the movement of a piece of plastic with no Halachic implications.

Status Light: red.

Pause for predefined duration. This duration is Halachically significant, and it provides the optimal “distancing” between the user’s action, and any reaction that may come about in the future.

Failure Probability #1: The KosherSwitch® picks a random number between 1 and 100. This number must exceed a certain threshold (also random but within a preset range). If it is (a “winner”), it continues to the next step. Otherwise, this cycle has failed, and the device must restart from the beginning.

Light Pulse Pair: the transmitter sends a light pulse and the receiver looks for this light pulse to determine if it was received, depending on the obstructing/non-obstructing position of the on/off button. This step lasts a few milliseconds, and is the only time during the entire cycle that this component is active (the rest of the time, it’s “dead”).

Failure Probability #2: The KosherSwitch® picks a random number between 1 and 100. This number must exceed a certain threshold (also random but within a preset range). If it is (a “winner”), it continues to the next step. Otherwise, this cycle has failed, and the device must restart from the beginning.

Trigger the attached fixture/circuit into the appropriate on/off state, based on the results of the Light Pulse Pair step (on if the light pulse was received and off if it was not). Do nothing if the attached fixture is already in appropriate state. [Technical note: In some versions of our devices, this is a true on/off using a relay while in others the circuit always remains on and the current is throttled using a triac.]

Go back to the start.

Next >> How to Use?

More common questions answered in the FAQs...

Technology

Is KosherSwitch® technology similar to the Zman Switch? (ZmanSwitch)?

No, KosherSwitch® is quite different! The product marketed as “Zman Switch” is simply a timer/Shabbos clock that is pre-programmed with Halachic times/zmanim for Shabbat and holidays. Unlike the KosherSwitch®, it cannot be used for on-demand control of electricity on Shabbat/holidays — when and where it’s needed. Like a traditional timer, it must be pre-configured with on/off times based on an anticipated and predetermined schedule that cannot be changed during Shabbat or holidays.

KosherSwitch® also yields significant energy savings, which the ZmanSwitch does not. For more details on the advantages that KosherSwitch® yields, please see [here](#) and [here](#).

Is the KasherSwitch® Classic UL certified?

Yes. Our production units are UL® Listed / UL Certified with a cULus rating.

How long does it take for the fixture attached to a KasherSwitch® Classic to turn on/off?

In Normal Mode, it's instant. In KasherSwitch® Sabbath Mode, there's no way to predict how long it will take, since the device must go through one or more cycles, each with a possibility that it will fail to function as intended. Typically, it will take "dozens of seconds" but sometimes, randomly, it can take more than a minute or two.

Do we need to change our wiring, anything inside the wall, or our wallplate?

The KasherSwitch® Classic does not require changing any wiring, since it attaches to the existing in-wall wires. (Note that some versions of the switch require a "neutral wire" in the wallbox; see here for details.) It is designed to fit most electrical/junction boxes and wall cutouts. It fits perfectly within standard Leviton® Decora® style wallplates, which are the type of wallplates found in most homes and institutions. For those locations where the traditional "toggle switch" wallplates are used, only the wallplate would need to be replaced (these are widely available and very inexpensive). Wallplates are not included with our products.

Isn't KasherSwitch® technology similar to timers/Shabbos clocks/motion sensors?

Not at all. Use of motion sensors are forbidden, since they're akin to directly triggering an electrical switch, and timers do nothing to prevent Shabbat desecration ("Chilul Shabbos"). Timers/Shabbos clocks have many issues and limitations. They require knowing your schedule ahead of time, which is often impossible to do, especially when Shabbat is following a two-day holiday. Timers require programming, which invariably leads to errors that cause things to go on/off at undesired times. Also, because of the required programming "buffer" before and after your anticipated usage times, they are very wasteful. A KasherSwitch® addresses all of these limitations, and many more, allowing you to control your electricity when and where needed, in a way that's permitted.

Since the KasherSwitch® Classic is a "smart device" isn't it constantly wasting electricity?

No. The KasherSwitch® Classic draws less than 1.5W of electricity while it is installed. That's about a quarter of the consumption of most nightlights. By using a KasherSwitch® Classic, you will actually be reducing your overall electricity consumption in a significant manner.

Does the The KasherSwitch® Classic require anything else installed, like a computer or a base unit?

No. The KasherSwitch® Classic is a self-contained unit that does not require any external devices such as base units, computers, timers, etc. When we mention the device's "computer" or a "micro-controller", we're actually referring to a tiny computer that's included inside the switch's enclosure.

You claim that KasherSwitch® "pays for itself" in under a year. How is that possible?

The alternatives to KasherSwitch® are all relatively wasteful: 1) Leaving the fixture on for the entire duration of Shabbat and/or Jewish holiday. Obviously, this is extremely wasteful, since much of the time that the fixture is turned on, it's not in use (such as overnight). 2) Timers and Shabbos clocks: Since they need to be pre-programmed with the anticipated schedule required, they will always include wasteful "buffer" time before and after the actual use. So while you're sleeping in the bedroom, the dining room lights are still illuminating an empty room. (If an air conditioner is active in that room, it will be double the waste, since the unit will continue to work hard cooling a room that's vacant!) KasherSwitch® eliminates this waste by allowing the on-demand control of electricity in a manner that's permitted. So electrical devices go off soon after they're no longer needed. See the Energy Savings section for further information, including a sample calculation of the electricity savings possible.

Is KasherSwitch® technology similar to the KasherLamp™ (Kasher Lamp)?

Not at all. A KasherLamp™ is simply a light bulb that's constantly on and situated inside of a cylinder with an aperture that acts as a variable shade. Since it's fully enclosed, the lamp must be of very low intensity in order to avoid the risk of fire, so its uses are very limited (and it's marketed as a reading light). In direct contrast with KasherSwitch®, it can't control any other light fixture and is wasteful since the bulb remains on for the entire duration of Shabbat and Jewish holidays.

Is KasherSwitch® technology similar to the Shabbos Smart Switch? (ShabbosSmartSwitch)?

Not at all. The product marketed as "Shabbos Smart Switch" is simply a timer/Shabbos clock that installs over an existing toggle light switch. It must be programmed before Shabbat, and cannot be used to prevent Chilul Shabbos or to interactively control electricity on Shabbat/holidays.

Since the on/off button is mechanical and not attached to anything electrical, won't it break easily? Since the Status Light indicator is constantly in use, won't it burn out? Won't the door break off?

No. Our switch is designed to ensure tens of thousands of actuations. The Status Light is rated for millions of operations. Nevertheless, our products are backed by our support and a warranty.

Can the KasherSwitch® Classic coexist with other types of switches in the same electrical box/wall plate?

Yes. If you need to mix a KasherSwitch® with the more traditional toggle switches, multi-gang wall plates will allow you to mix and match devices in most configurations.

Is KasherSwitch® considered to be the KasherLamp™ (Kasher Lamp) killer?

No, we believe that they complement each other. While KasherSwitch® is superior to the KasherLamp™ because of its many benefits, the KasherLamp™ has certain advantages in the specific area that it's marketed: a reading light. Its variable shade offers "dimming" capabilities that we don't plan to include in the KasherSwitch® Classic. Additionally, since it's always on, there's no delay when turning the lights on or off. We think that the KasherLamp™ is a great product within its limited context, and believe that our products will co-exist with it.

KosherSwitch® Launch Video

Videos of Interest

KosherSwitch® is certified



Featured Shiur/Lecture

Rabbi Aryeh Lebowitz / YU Torah

Coming to a Wall Near You



KosherSwitch® Classic Wall Switch

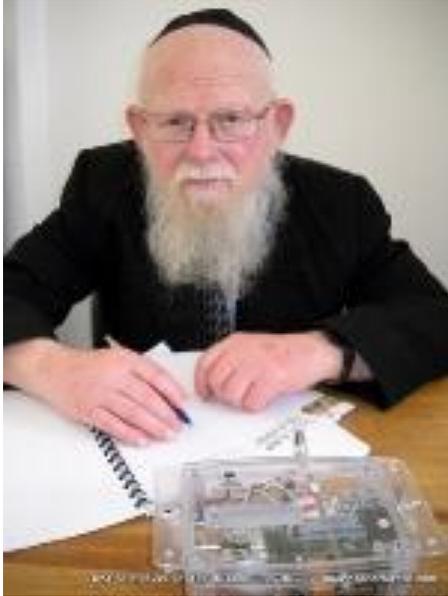
Rabbis & Poskim



HaGaon Rabbi Chaim Tzvi Shapiro



HaGaon R Yehuda Bracha Analyzing the KosherSwitch Prototype



HaGaon Rabbi Dzimitrovski Analyzing the KosherSwitch prototype



HaGaon Rabbi Avigdor Nebenzahl Analyzing the KosherSwitch prototype

Tell Us

Top of Form



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Would you choose a KosherSwitch®-enabled facility/product over one without it?

Yes

No

[View Results](#)

[Bottom of Form](#)

 Loading ...

[Top of Form](#)

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2

Would you use/buy KosherSwitch® ?

Yes

No

With more endorsements

[View Results](#)

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 [Shabbat Times \(NYC\)](#)

Havdalah (72 min): 8:50pm

Parashat Shmini

Candle lighting: 7:19pm

Yom HaShoah

Lectures/Videos

Rabbi Noach Isaac Oelbaum KosherSwitch Endorsement Video

Rabbi Aryeh Sokoloff KosherSwitch Endorsement Video

Rabbi Peretz Steinberg KosherSwitch Endorsement Video

Rabbi Eliyahu BenHaim (Ben-Chaim) KosherSwitch In-Depth Lecture & Endorsement Video

Rabbi Yitzhak Israeli KosherSwitch In-Depth Lecture & Endorsement Video

Rabbi Pinchas Zabihi KosherSwitch Endorsement Video

Rabbi Mordechai Hecht KosherSwitch Endorsement Video

Rabbi Nissim Bassalian KosherSwitch Endorsement Video

News

KosherSwitch launches on Indiegogo. PRE-ORDER AND SAVE 45%.

Rabbi Noach Isaac Oelbaum KosherSwitch Endorsement Video

Rabbi Aryeh Sokoloff KosherSwitch Endorsement Video

Rabbi Peretz Steinberg KosherSwitch Endorsement Video

Rabbi Eliyahu BenHaim (Ben-Chaim) KosherSwitch In-Depth Lecture & Endorsement Video

Rabbi Yitzhak Israeli KosherSwitch In-Depth Lecture & Endorsement Video

Rabbi Pinchas Zabihi KosherSwitch Endorsement Video

Rabbi Mordechai Hecht KosherSwitch Endorsement Video

Testimonials

We've needed this for 20 years already

This may save our people AND my marriage!

Kosher Switch is amazing!

Great help in the Shalom Bayit department

One of our community rabbanim specifically recommended your product

Not Shomer Shabbat like me

Is there a Jewish version of the Nobel prize?

Host forgot to set the timer in the dining room

The KosherSwitch® Blurb

Control Electricity on Shabbat! KosherSwitch® is innovative patented technology permitting the on-demand control of electricity on Shabbat and Jewish holidays, while making Shabbat desecration (“Chilul Shabbos”) impossible! KosherSwitch® is endorsed by leading Poskim & Orthodox rabbis. The KosherSwitch® Classic wall switch pays for itself by curbing wasted electricity, and is easy to install/use without programming (just wait for a green Status Light and flick the switch).

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