

Safety Products Buying Guide





Residential Safety Products Buying Guide

Advancements in building products technology present new opportunities to upgrade the electrical safety in your home. Leviton has been a leading innovator of electrical safety for over 100 years. Our safety products help protect you, your family and your property, all while meeting or exceeding National Electrical Code® requirements, UL and CSA standards. This guide will help you understand the products that are available and where and how they can be used.

Leviton safety products can be divided into two categories: those which protect from electrical hazards and those which create a safer living environment.

Products designed to help protect you, your family and your property from inherent electrical dangers include:

- AFCI Outlets - help detect potentially dangerous arc-faults in your electrical system, which can cause home fires
- GFCI Outlets - protect residents from the dangers of shock or electrocution by tripping when a ground fault is detected
- Tamper-Resistant Outlets - provide protection against injury by helping to prevent foreign objects from being inserted into outlets
- Weather-Resistant Outlets and Covers - protect outdoor outlets from the elements

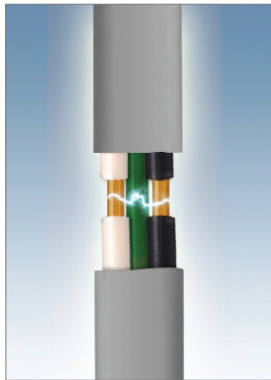
Products designed to help create a safer living environment within the home include:

- Sensors - automatically turn lights ON and OFF when you step into or out of a room or space
- Timers - program your lights to turn ON and OFF to provide a lived-in look when you are out
- Guide Lights and Illuminated Switches - provide a safe path in the dark

AFCI Outlets

While many homes are equipped with items such as smoke detectors, extinguishers and ladders which are designed to help if a fire breaks out, few are equipped with products that help actually prevent fires. An Arc-Fault Circuit Interrupter is designed to help prevent electrical fires that can be caused by potentially dangerous arc-faults in an electrical circuit. An arc-fault is an unintentional arcing condition that occurs in an electrical circuit. Arcing can create high intensity heat which may over time ignite surrounding material such as wood framing or insulation. Arcing may be caused by damaged wires behind a wall or damaged cords that are plugged into an outlet. Based on the area that you live in, arc-fault protection is now required by the National Electrical Code in most areas of the home. Until recently, arc-fault circuit interrupters were only available for use in a home's service panel. Today, there is an AFCI Outlet which offers AFCI protection at the outlet itself for added convenience.

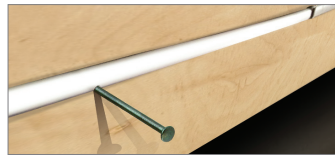
Parallel arc



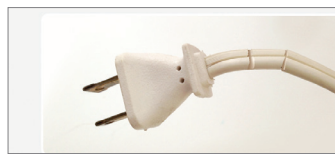
Series arc



Often unseen, arc faults can occur anywhere in the home's electrical system including:



Within walls from nails, screws or staples inadvertently driven into wires



Through old or cracked wires or cords



At loose electrical connections or cords damaged by doors closing on them



Within electrical cords accidentally damaged by furniture resting or pressing upon them



Through wires or cords damaged by heat, sunlight or humidity



What are AFCI Outlets?

Outlet Branch Circuit Arc-Fault Circuit Interrupter (AFCI) Outlets are designed to recognize potentially hazardous arc-faults that can occur anywhere in the home's electrical system including within walls and through items plugged into the outlets to help provide protection from electrical fires.

What do they do?

Electronics in the AFCI outlet constantly monitor a circuit for the presence of arcing conditions. If a hazardous arcing condition is detected, the AFCI will respond by interrupting the electricity in that circuit.

Where would I use them?




According to the current National Electrical Code®, AFCIs are required in kitchens, family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, laundry rooms, or similar rooms or areas. The requirements are based on the Electrical Code that is currently in effect in your area and affect new construction, renovations and replacement outlets. Even if this type of protection is not yet required in your area, it will be when your area adopts the current electrical code.

What is the cost of an AFCI Outlet?

AFCI Outlets can be purchased for about \$30.

FACT: In 2011, an estimated 47,700 home structure fires reported to U.S. fire departments involved some type of electrical failure or malfunction as a factor contributing to ignition. These fires resulted in 418 civilian deaths, 1,570 civilian injuries, and \$1.4 billion in direct property damage. And, according to the National Fire Incident Reporting System, arc-faults are “the principle electrical failure mode resulting in fire.”

- The U.S. Fire Administration (USFA)

Options Available	Benefit	Applications
<p>Standard AFCI 15 Amp and 20 Amp</p> 	<p>Provides protection for branch circuit wiring and anything that is plugged into that outlet.</p> <p>Utilizing an AFCI outlet offers the benefit of localized TEST and RESET. No need to go to the breaker box.</p> <p>Tamper-Resistant to block access to the contacts unless a two prong plug is inserted.</p> <p>The SmartlockPro® AFCI outlet has a reset lockout feature that automatically tests the AFCI every time the RESET button is pressed and won't allow it to be reset if the AFCI circuit is not working properly or if protection has been compromised.</p>	<p>Can be used in most areas of the home as the first outlet in the branch circuit.</p>
<p>Combination AFCI/Switch</p> 	<p>Provides both the convenience of a single pole switch to control the lights and AFCI protection.</p>	<p>To be used for new circuits or modifications to existing circuits where a switch will be the first outlet in the branch circuit.</p>
<p>Blank Face AFCI</p> 	<p>Can be used for outlet branch circuits where AFCI protection is desired but is located where an outlet is not desired. This could include installing in a location to make AFCI protection "readily accessible" per code requirements or on circuits that are feeding lighting loads.</p>	<p>May be used on circuits feeding lighting loads and smoke detectors where a receptacle is not used.</p>

FAQs

What is the difference between an AFCI outlet and a GFCI outlet?

The function of an AFCI is to help provide protection against potentially dangerous arc-faults that could lead to an electrical fire that may injure people and damage homes. The function of a GFCI is to directly protect people from the hazards of electrocution or shock that could occur if parts of an electrical appliance or tool they are using become energized due to a ground fault.

Can an AFCI outlet and a GFCI outlet be used on the same circuit?

Yes, they both can be used on the same circuit.

Will I need to replace all my outlets with AFCI Outlets?

No, AFCI outlets provide what is called “feed-through” protection to other outlets in the same circuit. This means that any outlet that is fed through the load side of the AFCI outlet is protected. Protection is also provided to those items plugged into the protected outlet.

Learn more at www.leviton.com/afci

GFCI Outlets

Whether you are upgrading, renovating or creating a new living space, GFCIs help provide protection to people against shock or electrocution in the home, near water sources, or where people may be exposed to the elements when using power. A ground fault is an unintentional electrical path between a power source and a grounded surface. These currents can occur when an appliance is damaged or the electrical parts get wet, causing the electrical current to flow outside of the circuit conductors. There is a potential that the human body can provide a path from the electrical source to the ground causing shock, burn or electrocution to the person. Ground Fault Circuit Interrupters (GFCIs) are required by the National Electrical Code.

What are GFCI Outlets?

Ground Fault Circuit Interrupter (GFCI) Outlets help protect people from shocks and electrocution.

What do they do?







A GFCI Outlet monitors the current flowing through the electrical circuit and interrupts power if a current imbalance typically associated with a ground fault is detected.

Where would I use them?

GFCIs are required by the National Electrical Code in wet or damp locations such as kitchens, bathrooms, basements, laundry rooms, garages, porches and any other areas where water or exposure to the elements may be present when using power.

FACT: Since GFCI technology has been implemented in homes, the number of household electrocutions has decreased by 75%. And, although Ground Fault Circuit Interrupters (GFCIs) have been around for years, 25% of consumers don't understand their purpose.

- **Electrical Safety Foundation International (ESFI)**

Options Available 15 Amp and 20 Amp	Benefit	Applications
<p>Standard GFCI</p> 	<p>Provides protection to people from shocks or electrocution.</p> <p>SmartlockPro® GFCI has a reset lockout feature that automatically tests the GFCI every time the RESET button is pressed and will not allow it to reset if the circuit is not working properly or if protection has been compromised.</p> <p>It also has a line-load reversal diagnostic which prevents the GFCI from being reset and stops power from being fed to the outlet face or through downstream devices if the GFCI is wired improperly due to the reversal of the line and load wires during installation.</p> <p>Available in Tamper-Resistant to block access to the contacts unless a two prong plug is inserted.</p>	<p>Kitchens, bathrooms, basements, laundry rooms and garages.</p>
<p>GFCI with Guide Light</p> 	<p>This GFCI has the added benefit of a built in guide light that provides additional light at night or in dark areas while still allowing use of both outlets.</p>	<p>Most common area for use would be a bathroom or laundry room.</p>
<p>Self Test GFCI</p> 	<p>This GFCI adds an extra level of safety, by testing itself to confirm that protected power is available. If the self-test detects any condition that would indicate GFCI protection might be compromised, visual indicators will provide an alert.</p>	<p>Can be used instead of a standard GFCI to help provide an extra level of safety.</p>
<p>Combination GFCI/Switch (15 Amp only)</p> 	<p>This GFCI saves space by combining GFCI protection and a switch in one device.</p>	<p>Ideal in small scale kitchens, bathrooms and laundry rooms where a switch and GFCI are both needed.</p>
<p>Blank Face GFCI</p> 	<p>When downstream protection is a priority this GFCI provides the necessary safeguards with a clean appearance that blends into the wall space.</p>	<p>The most common use would be for a spa/tub. Another use includes mounted inside the home to provide GFCI protection to weather-resistant outdoor outlets.</p>
<p>Weather-Resistant GFCI</p> 	<p>This GFCI is designed to be used outdoors when paired with a weather-resistant cover. Look for the WR symbol on the face to ensure it is rated for outdoor use.</p>	<p>Outdoor locations such as decks, patios, and pool areas.</p>

FAQs

Will I need to replace all my outlets with GFCI Outlets?

No, GFCI outlets provide what is called “downstream” protection to other outlets in that circuit. This means that any outlet that is fed through the GFCI outlet is protected. Protection is also provided to those items plugged into the protected outlet.

What is the cost of a GFCI Outlet?

GFCI Outlets can be purchased for under \$15.

Are GFCI Outlets required?

Yes, the National Electrical Code currently requires that GFCIs be used in kitchens, bathrooms, garages, unfinished basements, crawlspaces and outdoors.

Learn more at www.leviton.com/gfci

Tamper-Resistant Outlets

Tamper-Resistant (TR) Outlets help protect children from electrical hazards that can occur if they attempt to insert a foreign object into an outlet. Every home today should install Tamper-Resistant (TR) Outlets, a safer alternative to standard devices. Required since the 2008 NEC[®] code in new construction, they are equally as important in older homes whether or not children are present.

What are Tamper-Resistant Outlets?

These outlets are designed with a spring-loaded shutter mechanism inside the outlet that helps block access to the slots unless a two-prong plug is inserted.

What do they do?




A shutter mechanism inside the TR device will help block access to the contacts from anything but a two- or three-prong plug. When equal pressure is applied simultaneously to both sides, the shutters will open, allowing a standard plug to make contact with the outlet's contacts. Without this synchronized pressure, the shutters remain closed, preventing the insertion of most foreign objects which could cause a shock or burn injury.

Where would I use them?

Tamper-Resistant Outlets should be used in every outlet inside and outside your home and can be used regardless of whether or not you have children.

FACT: Each day, nearly seven children are treated in hospital emergency rooms for electrical shock or burn injuries caused by tampering with a wall outlet. The 2008 NEC mandated the installation of tamper-resistant receptacles (TRRs) in all new residential construction to reduce this risk.

- **Electrical Safety Foundation International (ESFi)**

Options Available 15 Amp and 20 Amp	Benefit	Applications
<p>Standard TR Outlet</p> 	<p>Easily replaces plastic caps and shuttered wallplates for a permanent tamper-resistant solution.</p>	<p>Required by code for all outlets in new construction homes but are equally valuable in older homes.</p>
<p>Combination Guide Light/ TR Outlet</p> 	<p>Provides tamper resistance with a guide light that lights up in the dark.</p>	<p>Perfect in children's bedrooms and bathrooms.</p>
<p>TR GFCI</p> 	<p>Provides tamper-resistant protection in areas requiring a GFCI outlet.</p>	<p>Kitchens, bathrooms, basements, laundry rooms and garages.</p>

FAQs

How can I tell if an outlet is tamper-resistant?

The face of the outlet will be marked with a TR symbol or the words “tamper-resistant”. Occasionally, the TR will be located on the metal strap of the device and can be seen when the wallplate is removed.

If I don't have children in my home, are Tamper-Resistant Outlets required?

Consult the National Electrical Code to find out the requirements in your area. Also take into account that even if you do not have children, you may have friends or family members that do and they may visit your home.

Are Tamper-Resistant Outlets costly?

The average cost for a standard Duplex model is approximately \$1.25. Decora models cost about \$5.00. This minimal increase in cost buys a significant increase in electrical safety for children.

Why are TR Outlets preferred over products such as outlets with caps or with sliding outlet covers?

TR outlets provide built-in security against the insertion of objects other than cord plugs into the energized parts of the outlet. Outlet caps may be lost and also may pose a choking hazard for younger children. Children can learn to defeat sliding outlet covers when they watch their parents do so.

Learn more at www.leviton.com

Weather-Resistant Outlets and Covers

When it comes to protection, it's important to be sure that outlets placed outdoors are designed to withstand the elements and are properly covered. If they are not, they can be damaged by the elements and pose an electrical danger to you and your family. The National Electrical Code® requires that all non-locking 15A and 20A outlets in damp or wet locations be GFCI protected, weather-resistant and protected by Extra Duty Raintight Weather-Resistant Covers.

What are Weather-Resistant Outlets and Covers?

Weather-Resistant Outlets are made from UV stabilized thermoplastic with high cold impact resistance and corrosion resistant mounting strap and screws that resist rust and stand up to the harsh elements of the outdoors. Weather Resistant Covers are made from UV resistant polycarbonate that protects the outlet from inclement weather without breaking or cracking and has a pre-mounted heavy gasket attached for a weatherproof seal.




What do they do?

Weather-Resistant Outlets provide easy access to electricity outdoors so you can plug in items such as lawn equipment, pool pumps, holiday lighting, music players and appliances. Weather-Resistant Covers are designed to allow access to the outlets while providing an extra shield of protection from moisture, debris and insects when they are not in use.

Where would I use them?

Weather-Resistant Outlets and Covers are required in damp and wet locations such as patios, decks, pool areas and outdoor workshops.

FACT: According to the Electrical Safety Foundation International (ESFI), power tools were responsible for 9% of electrocutions per year and landscaping and gardening equipment were responsible for 7%.

Options Available 15 Amp and 20 Amp	Benefit	Applications
<p>Weather-Resistant GFCI</p> 	<p>This GFCI is designed to be used outdoors and paired with a weather-resistant cover. Look for the WR symbol on the face to ensure it is rated for outdoor use.</p>	<p>Outdoor locations such as decks, patios, pool areas and hot tubs.</p>
<p>Weather-Resistant Outlet</p> 	<p>This outlet is designed to be used outdoors only when placed downstream from a GFCI that is feeding ground fault protection to this outlet.</p>	<p>Outdoor locations such as decks, patios, pool areas and hot tubs.</p>
<p>Extra-Duty While-in-Use Covers</p> 	<p>Available in vertical and horizontal configurations.</p> <p>Comes packaged with Decora® rectangle outlet opening and includes inserts for duplex and single outlets.</p> <p>Includes inserts that cover the cord opening to prevent insects and debris from entering the cover while not in use.</p>	<p>Ideal for use with lawn equipment, pools, hot tubs, holiday and landscape lighting, outdoor entertainment systems, barbeques, fountains, vending machines and other outdoor electrical applications.</p>

FAQs

How will I know if an outlet is weather-resistant?

All outlets rated for outdoor use will have a WR symbol on the face of the device.

What is Extra Heavy Duty?

Extra Heavy Duty is a new addition to the 2014 National Electrical Code requiring the cover to withstand more severe impact tests.

What makes an outlet rated as weather-resistant different from a standard outlet?

Weather-Resistant Outlets are made from UV stabilized thermoplastic with high cold impact resistance and corrosion resistant mounting strap and screws that resist rust and stand up to the harsh elements of the outdoors.

Learn more at www.leviton.com

Occupancy Sensors

Motion Sensors (also referred to as Occupancy Sensors) provide a simple, cost-effective way to help make your home safer - both inside and out. Inside the home, reaching for light switches while carrying a basket of laundry or shopping bags can be difficult and sometimes hazardous; and entering dark hallways or navigating dark staircases can be equally dangerous. Outside, at night, darkened pathways and other areas of your home's exterior can be hazardous to you and your family and enticing to a would-be intruder. Sensors provide the safety and convenience of automatically activating lights based on motion detection.

What are Occupancy Sensors?

These sensors mount on the wall in place of a standard switch or outdoor versions that mount onto the exterior of a home. They automatically activate the lights to turn on when movement is detected and shut off when a presence is no longer detected after a set period of time.

What do they do?




Most residential sensors use passive infrared (PIR) technology which responds to infrared heat that is naturally emitted from living beings. When heat is sensed, sensors activate lights and turn them on automatically. When presence is no longer detected, the lights will automatically turn off.

Where would I use them?

Inside the home, sensors can be used in laundry/utility rooms, basements, closets, garages, pantries and storage areas. Outside the home they can be mounted to the house to light the driveway, side yard, backyard and walkways.

FACT: In addition to the safety aspect of sensors, they are also energy efficient by turning off lights when areas are not occupied. In some areas, local utilities offer rebates for occupancy sensors - check with your local utility to see if they are offered in your area. Where utility rebates are available, sensors pay for themselves in less than one year and most pay for themselves in two to three years without rebates.

- U.S. Department of Interior

Options Available	Benefit	Applications
<p>Relay Wall Switch Occupancy Sensor</p> 	<p>180° field of view with 900 sq. ft. of coverage.</p> <p>Can control LED, CFL, incandescent, fluorescent and motor loads.</p> <p>Has an ambient light override feature and will not activate lights if there is enough ambient light present.</p> <p>Can manually turn on and off lights if needed.</p>	<p>Laundry/utility rooms, basements, closets, garages, pantries, bathrooms and storage areas.</p>
<p>Occupancy Sensor with Dimmer</p> 	<p>All the benefits of an occupancy sensor with the ability to dim and brighten the lights.</p>	<p>Ideal in locations where you would want to control the light level such as bathrooms and basements.</p>
<p>Outdoor Motion Sensor</p> 	<p>Dual flood lights.</p> <p>Manually adjustable Sensor neck allows accurate area monitoring: 110 degrees vertical, 180 degrees horizontal, 110 degrees rotational.</p> <p>2500 sq. ft. Coverage.</p>	<p>Ideal for a wide range of residential settings including backyards, garages, entranceways, porches, pool areas, doorways and private docks.</p>

FAQs

If I have pets, will their movement trigger the occupancy sensor and turn the lights on?

There is a possibility that the movement of a pet or small child within 8 feet of an occupancy sensor will trigger the lights to turn on.

Can a sensor be triggered by humidity or a heat source?

In general this is highly unlikely. However, in some instances if the sensor is placed too close to a heat source such as a dryer, stove or heating vent, the heat generated MAY trigger the lights ON or prevent them from turning off. For optimal performance, Leviton recommends installing sensors a reasonable distance away from heat sources.

What is the difference between an occupancy sensor and a vacancy sensor?

An occupancy sensor automatically turns the lights ON when motion is detected within the sensor viewing range and automatically turns the lights OFF after a designated time elapses when the room is vacant and motion is no longer detected.

Vacancy sensors require the user to manually turn ON the lights. The sensor will automatically turn lights OFF after a designated time elapses when the room is vacant and motion is no longer detected. Vacancy sensors meet California Title 24 code requirements for lighting loads requiring manual ON.

Learn more at www.leviton.com/sensors

Programmable Timer Switches

A well-lit home is a safer home – inside and out. When you use timer switches to turn lights ON and OFF your home is well-lit even when you are not there. Timers are a valuable asset when at work or on vacation because they give your home a “lived in” look – which is a proven deterrent to burglars. Timer switches are also used to ensure that you never come home to a dark house – and outdoor lights can be set to turn on at dusk, creating a well-lit driveway and path to the front door.

What is a programmable timer switch?

It is a device with a built in timer that turns a circuit on and off.



What do they do?

Timer switches turn lights and motor loads on and off automatically at times preprogrammed by the user.

Where would I use them?

Indoor and outdoor lighting, landscape lighting, security lighting, pool filters and attic fans.

FACT: Security experts agree that the first line of defense against intruders is a home that looks “lived in” – and lighting is a powerful deterrent.

Options Available	Benefit	Applications
<p>24-Hour Programmable Timer Switch (In-Wall)</p> 	<p>Allows the user complete flexibility to program the time the lights turn on and off.</p> <p>Can be programmed to adjust to local sunrise/sunset times and daylight saving time.</p> <p>Ability to program up to 50 different events per day.</p> <p>Can be programmed for weekdays, weekends, all days or any combination of days.</p> <p>Random mode will vary the on/off times for a "lived in" look.</p>	<p>Indoor/Outdoor lighting, landscape lighting, pool filters.</p>
<p>Plug-In Programmable Timer</p> 	<p>Same benefits as the in-wall programmable timer switch with the added ability to use with lamps that plug in to outlets.</p> <p>Ideal for use with holiday lighting.</p>	<p>Living room, family room and bedroom.</p>

FAQs

Do timer switches require programming?

Programming is required to set events so the lights or controlled loads will turn on and off at the times specified. Also, programming is needed to identify your home's longitude and latitude coordinates if you want the timer to automatically adjust to sunrise/sunset times and daylight saving time.

Learn more at www.leviton.com/vpt24

Do timer switches save energy?

Yes, they can reduce power usage by switching the lights off automatically which ensures that they are not left on inadvertently.

What types of bulbs (loads) do timers control?

The timers listed in this guide can control incandescent, LED, CFL, fluorescent and motor loads.

Learn more at www.leviton.com/timers

Guide Lights and Illuminated Switches

A simple trip to the bathroom or finding a light switch in the middle of the night can prove to be dangerous if obstacles such as furniture or toys cause you to trip and fall. Guide lights and illuminated switches are ideal solutions because they provide enough illumination at night to light the way. These devices can be used as a preventative measure to help keep your entire family - from youngest to oldest - safer at night.

What are Guide Lights and Illuminated Switches?

These are devices that contain an internal light that provides illumination when the room/space is dark.






What do they do?

Guide lights contain a sensor that monitors the ambient light in a room and will illuminate when a room reaches a certain level of darkness. Illuminated switches glow when they are in the OFF position making it easy to locate them in a dark room.

Where would I use them?

Ideal locations are hallways, staircases, kitchens, bathrooms and bedrooms.

FACT: According to the National Safety Council (NSC) each week, more than 30,000 Americans over the age of 65 are seriously injured by falling.

Options Available 15 Amp and 20 Amp	Benefit	Applications
<p>Tamper-Resistant Outlet with Guide Light</p> 	<p>Perfect for homes with young children. The shutter mechanism inside the outlet blocks access to the contacts unless a two-prong plug is inserted, helping ensure that most foreign objects will be locked out.</p> <p>Provides an automatic night light when the room is dark.</p>	<p>Children's bedrooms</p>
<p>Full LED Guide Light</p> 	<p>Larger light that contains three LEDs. Provides more light in areas where more illumination is necessary.</p>	<p>Hallways, stairways</p>
<p>LED Guide Light with Switch</p> 	<p>The switch and LED guide light saves space wherever a switch and extra illumination is needed.</p>	<p>Bathrooms, laundry rooms</p>
<p>GFCI with Guide Light</p> 	<p>This outlet has GFCI protection and the added benefit of a built in guide light that provides additional light while still allowing use of both outlets.</p>	<p>Most common area for use would be a bathroom or laundry room.</p>
<p>Illuminated Switch</p> 	<p>Illuminated rocker switches make finding the light switch in the dark both safer and easier.</p> <p>Available in single pole, 3 way and 4 way switches.</p>	<p>Bedrooms, bathrooms, and hallways.</p>

FAQs

Do these devices stay lit all the time?

Guide lights contain a sensor that detects the ambient light in a room and only illuminate when the room is dark. Illuminated switches glow when they are in the OFF position making it easy to locate them in a dark room.

Do these devices waste energy?

No. LED guide lights are very energy efficient and use less than one watt of energy.

Learn more at www.leviton.com



Visit our Website at: www.leviton.com/safety

© 2014 Leviton Manufacturing Co., Inc. All rights reserved.
All trademarks are the property of their respective owners.

