

Safe Use of Power Strips

A power strip or more accurately, a relocatable power tap (RPT) is simply a variation of an extension cord, where the cord terminates in a row or grouping of receptacles. Power strips are commonly used in offices to provide multiple receptacles to office equipment. In general, the policies pertaining to extension cords also apply to power strips. Most are rated for 15 amps and should not be overloaded.

Good practice and OSHA interpretation letters suggests that major appliances such as microwaves, refrigerators, space heaters, coffee makers, toaster ovens and other appliances or tools with high power loads must be plugged into the wall outlet directly. Power strips are not designed for high power loads such as space heaters, refrigerators and microwave ovens, which can easily exceed the recommended ampere ratings on many power strips.

Additional requirements are:

1. Only UL (or other NRTL) approved device can be used.
2. A RPT cannot be permanently mounted to any facility surface, except as allowed in 3 below. It may hang from screws or hooks if manufactured with for that purpose with slots or keyholes.
3. In equipment racks, the preferred method of supplying 120/208-volt utility power to rack-mounted instruments is via a special power strip specifically designed to be rack-installed.

Surge Protective Device (SPD) Power Strips

Surge protection devices (SPDs) are used to protect sensitive electronic equipment such as computers, monitors, scanners and printers, from transient over-voltages. SPDs can be manufactured as corded power strip or a wall mount outlet(s) and may have protected outputs for phone, network, and coaxial cable. Both types are considered as power strips and adding additional cords or power strips would be “daisy chaining.”

All surge suppressors have a limited useful life. Metal oxide varistors (MOVs) inside the suppressor slowly degrade over time as they absorb excess energy from the power source. Most surge suppressors will continue to function as a power strip, even though the MOV may have been destroyed by a power spike. This presents two possible dangers:

1. If another power surge should occur, it can damage the equipment or appliances that are plugged into this surge protector.
2. If sufficient voltage passes through the surge protector due to a second power spike, a resistant short may have been formed, allowing heating to occur and a fire to ignite.

Surge suppression devices with lights that indicate proper operation should be inspected on a regular basis. Devices without any visual or audible indication, as well as devices manufactured before 1998 should be removed from service and disposed of.

Additional requirements are:

1. All surge protectors or power strips need to be UL approved. Be sure that the product is listed as a TRANSIENT VOLTAGE SURGE SUPPRESSOR.
2. Use only devices that have an internal circuit breaker. These units will trip the breaker if the power strip is over loaded or shorted to prevent overheating and fire.
3. If at any time the surge protector or power strip is hot to the touch remove and replace the unit. The electrical load for this strip should be evaluated for overloading.
4. Do not locate a surge protector or power strip in any area where the unit would be covered with carpet, furniture, or any

other item that will limit or prevent air circulation.

5. Do not locate a surge protector in a moist environment.
6. Minimum energy suppression rating of 1200 joules. The larger the minimum energy suppression rating, the better the protection against overheating and fire.

For examples of acceptable and unacceptable combinations of extension cords and power strips, see Figure 1 Extension Cord Use Examples. The examples have been chosen as representative of applications commonly, however acceptable and unacceptable combinations are not limited to the examples.

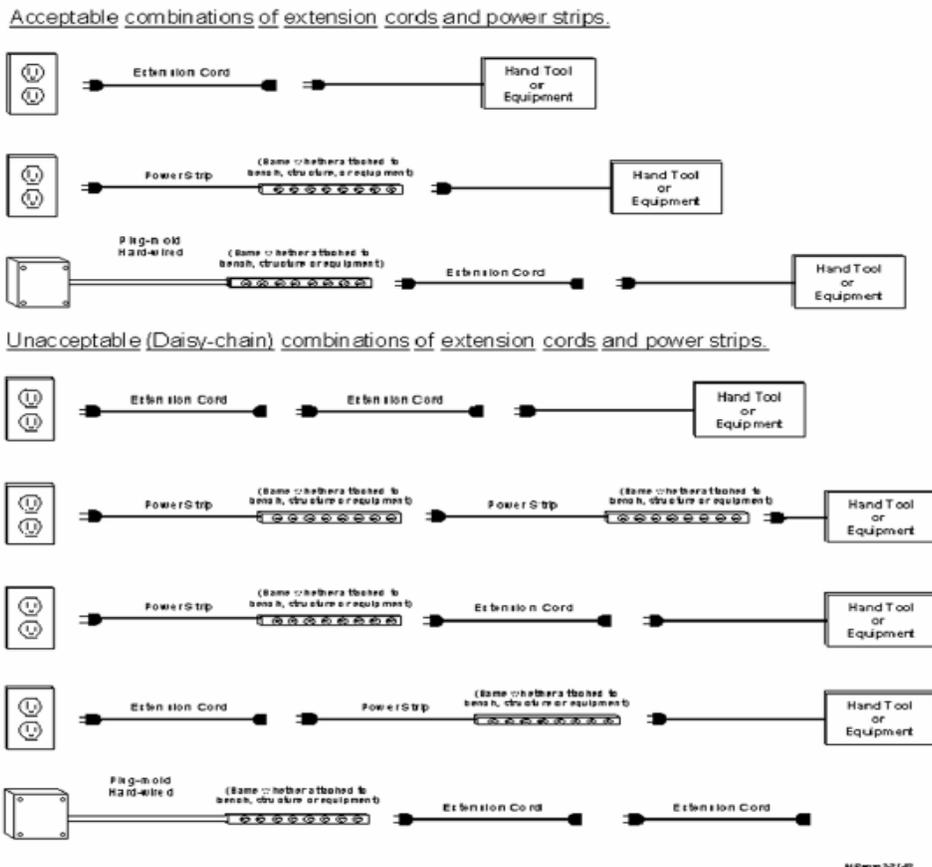


Figure 1: Examples of Extension Cord Combination Usage

Power Strips Save Energy Combat Power Draw

Almost all computers, computer peripherals (printers, modems, scanners, etc.) and home entertainment products (stereo, DVD player, televisions, etc.) draw an idle electrical current even after they have been turned off. Some devices still draw the same amount of power even when turned off. To alleviate this, the device needs to be physically unplugged from the wall. Using a power strip allows multiple devices to be plugged into one unit. Rather than having to unplug multiple devices, you only need to unplug (and plug back in) the power strip in this case making it a much easier process that you are more likely to remember.

5 Power Strips that Add Some Smarts

The lowly extension cord can do more than collect dust bunnies under a desk or entertainment center

We tend to ignore the ever present extension cord that's behind our desk—a hub for black electrical cables and dust bunnies. Not much has advanced in the years since some strips married themselves to surge protectors, aside from some added protection for cable and phone wiring.



The Powramid Power Strip

Now, smarter strips can help conserve power by warding off vampire power, send juice through a USB cable, or avoid having

to crawl under a desk. They can help tame a PC that refuses to sleep, or at least shut down all its peripherals.

Attaching some small extension cables or simply switching off a strip can get the same results, but not so elegantly or conveniently. But none will change your life, and their prices generally seem steep for what you get.

Here are five cleverly designed power strips worth looking into:

Belkin Conserve. Switching off a power strip can cut nocturnal losses to the "standby" mode of a TV or DVD player, but it's a pain to crawl among the dust bunnies behind a desk or entertainment system. The Conserve helps with a simple remote control that shuts down six of eight outlets. It works as advertised, although the remote feels cheaply made as it rocks back and forth. The strip can pay for itself in a couple of years with energy savings. Of course, you have to keep track of another remote.

Socket Sense. Individual sockets slip back and forth on a strip that stretches or contracts. The flexibility ensures that all six sockets have enough room for fat power bricks, while not taking up any more room than necessary. The plug holes themselves are turned at an angle, meaning they can stay unblocked by narrower and longer cellphone adapters.

Monster Outlets to Go 3 USB. This strip adds a port for gadgets that charge through a USB cable. That handy addition comes on a small, 6-inch strip with only three outlets and has a short cable that neatly wraps around it. It's great for use in hotel rooms. And while the strip has no switch to turn it on and off, it includes a small blue light that doesn't glow if a hotel's outlet is dead. Older Monster models pack as many as six outlets into a compact strip, but without the USB port.

The Powramid. This power center finally breaks the rectangular mold. The short pyramid shape sets the outlets at an angle to each other, accommodating fatter adapters while taking less room on the floor. The nonstrip power strip includes other basics, such as surge protection, a lit-up power switch and a circuit breaker.

One-for-All Energy Saver. This remote can control four devices, such as a TV and DVD player, while also cutting power to them. A button in the middle of the remote turns off electricity coming from one outlet. The remote wirelessly switches off a module that plugs into an outlet, cutting power to a single device or to a power strip that's attached to a bunch of them.