

# DIAGNOSING AND MITIGATING BLINKS

*It is a clear sunny day with not a cloud in the sky... All of a sudden, the room goes dark for a few seconds. Then power returns, joined by the clanging and clunking sound of printers and equipment “rebooting” around the home or office.*

So what just happened? Many folks assume that an electrical power surge just happened.

Actually, an **automatic circuit recloser** (ACR or Recloser) just opened, then “reclosed” resulting in a momentary interruption of power, also known as a “blink”.

Automatic circuit reclosers quickly respond to problems on an electric utility’s power grid. They are similar to a circuit breaker in your home but different due to their ability to automatically reset themselves to restore power quickly.

Reclosers have been used to protect electric utility systems and customer homes since

the 1950’s. Few customers even knew about reclosers or blinks until... manufacturers started building digital alarm clocks in the late 1970’s and early 1980’s. These new digital clocks maintained time by synchronizing with the 60 Hertz frequency of the utility power wave form.

Where digital clocks were found to be quite accurate, early clocks simply did not like “blinks” and when they occurred, the clock would flash 12:00 and required manual resetting which worked... until the lights blinked again.

The incorporation of digital clocks into large appliances and newly introduced microwave ovens further exacerbated the problem of customers getting home to a house full of flashing 12:00’s.

## WHAT CAUSES RECLOSERS TO OPEN AND CLOSE?

- ⚡ A lightning strike somewhere on the utility line that creates an over current condition.
  - ⚡ High winds blowing tree limbs and other debris into the power lines.
  - ⚡ Cars hitting power poles that can briefly cause the electrical lines to slap together.
  - ⚡ Wayward animals attempting to navigate high voltage lines.
  - ⚡ Tree limbs falling into power lines causing conductors to short out.
- A typical recloser will open and close 3 or 4 times before “locking out” due to its inability to

clear the line. Once this occurs, a utility service vehicle would need to be dispatched to figure out what is wrong with and make repairs to the distribution line being protected by the locked out recloser.

So, why do electric utilities continue to use reclosers? Quite simply, reclosers allow for quick restoration of power in a matter of seconds rather over an hour if a service truck needs to be dispatched to troubleshoot a distribution line or replace a blown fuse.

Manufacturers of digital clocks have helped minimize customer complaints by adding internal batteries to keep the clock (and appliances) working through “blinks”.

## WAYS TO MITIGATE BLINKS:



If a customer calls in and states that they had 6 or 7 “surges”, more than likely they are counting “blinks”. One or two blinks over a 3 or 4 week period should not be considered as excessive unless they reoccur at a particular time each day or week.

That being said, there are several steps that a utility can take to help reduce the number of blinks that a customer may be experiencing. This may include:

- ✦ Check alarm clocks and timers to look for (and replace) its internal back-up battery.
- ✦ Ask the customer to document dates and times that blinks occur. This information can be of great help to engineering staff who can review other events that may have occurred at the time of the blink and provide validity to the number of events being seen by the customer.
- ✦ Ask the customer to also note if there were high winds, winds from a particular direction or thunder storms in the area during the “blink” event.
- ✦ Once you collect the information from the customer, forward it to appropriate engineering staff to seek their help in determining the cause and possible solutions to reduce or eliminate the number of events that are occurring. This may include riding the line to look for damaged cross arms, overgrown tree branches, broken insulators or blown distribution lightning arresters.
- ✦ Consider a battery back-up for high value computers and Smart TV’s. These are quite inexpensive when comparing their cost to the value of items that are being protected by the battery back-up.

Where more than 3 to 5 blinks per week could be considered excessive, customers can help utilities diagnose and reduce or eliminate the occurrence of blinks through careful documentation of each event and observation of weather conditions.

The better the documentation, the faster the resolution and mitigation of these events.

## Questions?

Please contact us if you have questions about this article or a particular issue that you need help with.

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