

### Suppliers Hang Improved Safety on AFCIs

Arc fault circuit interrupters are paramount in protecting lives, property, and the investments of home builders and homeowners, and the National Electrical Code is proposing that combination-type AFCI protection be required in all new homes, effective Jan. 1.

Already, suppliers are prepared to meet possible upcoming requirements for higher- and lower-level arc detection.

Home electrical problems account for more than 70,000 fires, 500 deaths, and over \$1 billion in reported direct property damage annually, notes Matt Lorenz, business unit manager residential division at Eaton. "AFCIs protect the entire branch circuit and immediately isolate the circuit if damage should occur. Opportunities also arise during construction — hanging cabinets with long screws, hanging drywall — where new wire behind walls and through studs and joists can become damaged."

Lorenz says advancements in electronics enables products to do more in smaller packages. "This technology enables circuit breakers to detect arcs in the circuit, discriminating between common arcs such as in motors, in stoves with electronic igniters, and in receptacles when unplugging a load under power," he says, "and all of this in the small package of a 120-volt circuit breaker."

Siemens Energy & Automation AFCIs include an indicator that identifies the trip as an arcing, thermal, or magnetic overload, notes product manager Randy Dollar. "This can save considerable time in troubleshooting during installation, which means fewer delays in the construction process."

With a 160-year history of engineering and innovation, Siemens strives to develop products that provide increased levels of safety, says Dollar. "Siemens embraces internal and external research on leading-edge arc-detection technology, invests in R&D, and improves its technology to ensure the highest-possible performance and reliability." Siemens technology, he adds, has been thoroughly tested by third-party laboratories and in the field since the turn of the century.

Alan Manche, director of industry standards at Schneider Electric, says

Schneider, with its Square D AFCI circuit breaker, was the first to commercially introduce "combination" protection, in 2006.

"Combination-type AFCIs introduce a greater level of protection by detecting a hazardous parallel and "series" arcing conditions in the circuits and removing them before they become ignition sources," Manche says. "AFCIs allow home builders to address electrical issues before they arise, and builders will benefit from being able to show homeowners the number of items, including Square D AFCIs, that were installed to protect their families."

### Positive Effect Exceeds Costs, Marketing

Weighing the cost of installing AFCI devices against their benefits indicates that the proposed AFCI requirements in the 2008 NEC would add less than \$200 to the overall cost of an average home, according to Manche.

At Siemens, the estimated cost of equipping an entire home with combination AFCIs is between \$250 and \$500, "a small price to pay to ensure greater homeowner safety," notes Dollar.

Safety, reliability, and superior performance define value at Siemens, Dollar says. "We have thoroughly tested our combination device internally and externally for the last several years. We have established a strong technology position that makes our products ready for the market, and we're stepping up public awareness of AFCIs and their technology through a training and education campaign."

Eaton educates electrical contractors, inspectors, and home builders through literature and training sessions so they can deliver the message of safety and protection to their customers.

"Eaton maintains great relations with these contractors, meeting their product demands," says Lorenz. "Homeowners rely on these professionals to install the latest in safety products and technology."

### Builders, Homeowners Benefit Before Codes

Although proposed code requirements wouldn't go into effect until January, builders can benefit from making the transition ahead of time.

"The most beneficial action for home builders and homeowners would be to include AFCI in family rooms, living rooms, dining rooms, and other areas that do not already have ground fault circuit protection," Manche says. "The electrical protection is then enhanced across the electrical system, and home builders can promote AFCI electrical protection before it is required."

While the NEC sets minimum requirements, builders, contractors, and other professionals should exceed these requirements to further increase safety, Lorenz says. "Considering the average whole-home cost, AFCIs have a significant impact on fire prevention and a small impact on home builders."

Ensuring the safety of homeowners, as well as their property and possessions, is home builders' primary benefit of installing AFCIs before codes require it, Dollar concludes. "Safety is always a good selling point."

### NEMA Promotes AFCI Technology with Detailed Initiative

This spring, the National Electrical Manufacturers Association will launch a comprehensive program, with in-depth detail on product category specifics and related safety information, to educate interested parties on AFCIs, according to Gerard Winstanley, international standards manager.

"Builders should view AFCIs as a safety product, no different than a smoke alarm or escape ladder," Winstanley says. "Preventative in their design, however, AFCIs detect and disconnect the power to the circuit before the hazard occurs. This is a significant technological leap forward in homeowner safety and the cost variance between standard circuit protection and AFCIs is not that great." He adds that AFCIs offer a potential ROI that will remain in the home, providing continuous safety protection long after the builder has completed the construction.