Electrical protection is no place to compromise

100 years 1903-2003

That's why your builder chose SQUARE D® brand products:

- SQUARE D load centers, combination service entrance devices and generator panels carry a ten-year limited warranty.
- SQUARE D circuit breakers carry a lifetime warranty when used for residential applications.
- SQUARE D products consistently exceed standard requirements and provide unmatched quality and performance.
- Builders and electrical contractors choose SQUARE D two-to-one over any other brand!

As we celebrate a century of the SQUARE D brand as an electrical industry leader, our goal remains to provide technologically advanced, safe, quality products our customers recognize and trust.

For more information, contact your homebuilder, electrical contractor or SQUARE D supplier:

A guide to your electrical protection system

- **UNDERSTANDING YOUR HOME'S ELECTRICAL PROTECTION**
- **ADDED ELECTRICAL PROTECTION FOR YOUR HOME**
- **TROUBLESHOOTING**
- **GENERAL MAINTENANCE**

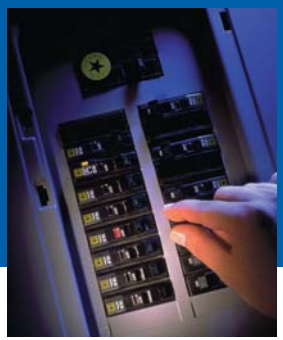
a brand of Schneider Electric

SQUARE D

Order No. 0102BR0201

Understanding your home's electrical protection system

Part of an overall electrical protection system, your electrical panel helps to keep your home and family safe.

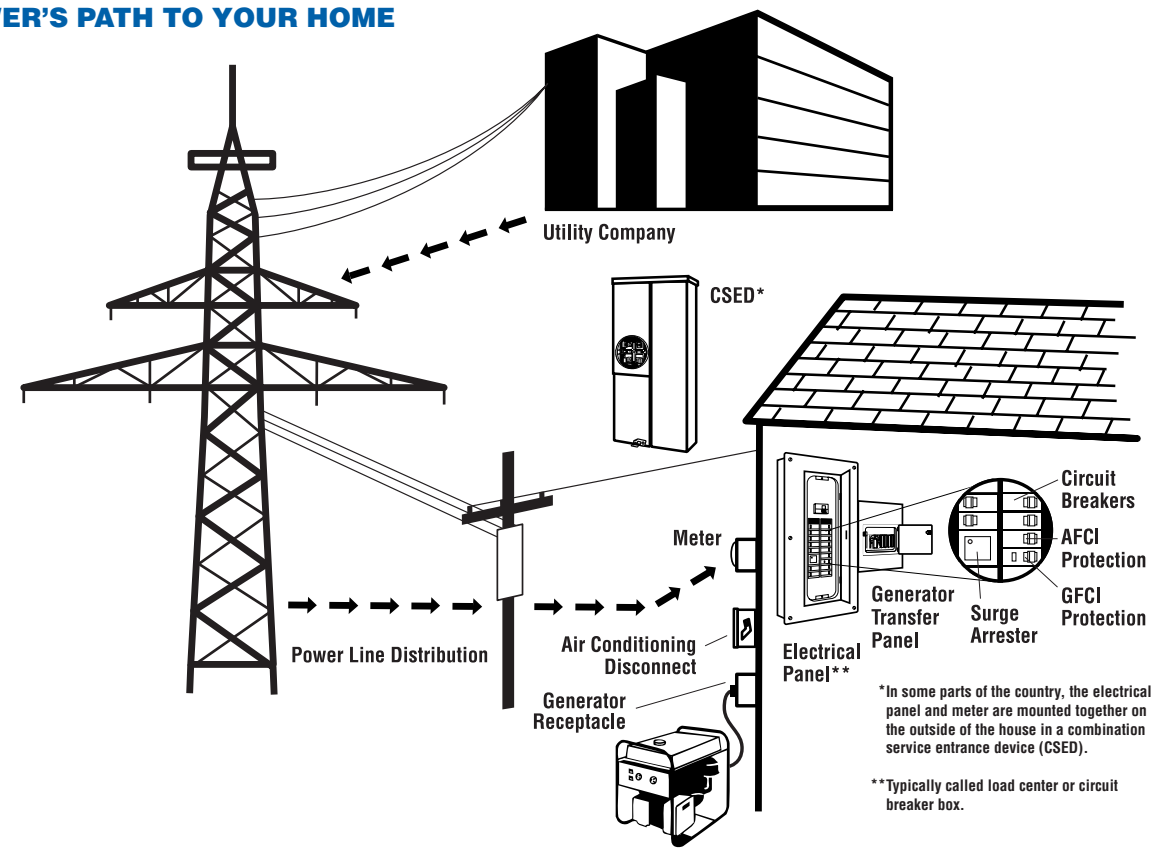


Typically called a "load center" or "circuit breaker box," the electrical panel is the heart of a home's electrical system, providing short circuit and overload protection.

Circuit breakers help protect your home 24 hours a day from fire or other damage that could be caused by overloads or short circuits. In the event of an overcurrent situation, the circuit breakers automatically cut off the current or "trip."

For added protection, optional protection devices – such as ground and arc fault circuit interrupters and secondary surge arresters – can also be installed in the electrical panel.

POWER'S PATH TO YOUR HOME



*In some parts of the country, the electrical panel and meter are mounted together on the outside of the house in a combination service entrance device (CSED).

**Typically called load center or circuit breaker box.

Added electrical protection for your home

PROTECTION AGAINST ELECTRICAL SHOCKS CAUSED BY GROUND FAULTS

Ground fault circuit interrupters (GFCI) are required in parts of the home where electricity could possibly come into contact with water, such as bathrooms, kitchens, patios and garages. There are two types of GFCI protection:

GFCI circuit breakers combine ground fault protection with the functions of a standard circuit breaker. Located in the electrical panel, these breakers can provide ground fault protection for circuits with receptacles, as well as for larger loads such as hot tubs and spas.

Testing: *Push the test button located on the SQUARE D® GFCI breaker. If it trips, it's working properly. If the device fails the test procedure, consult your builder's warranty. Remember to reset the GFCI breaker by first moving the handle to the OFF position and then returning to the ON position.*

PROTECTION AGAINST FIRES CAUSED BY ARC FAULTS

In 2002, the National Electric Code recognized the importance of Arc Fault Circuit Interrupters (AFCIs), particularly for bedroom circuits, by requiring them to be installed to protect all 15 and 20 ampere dwelling unit bedroom outlets.

AFCI circuit breakers, such as the SQUARE D® Arc-D-tect™ Arc Fault Circuit Interrupter, protect against threatening arc faults caused by worn or damaged electrical cords and wires. AFCI circuit breakers can be added to your SQUARE D load center to provide protection to any location in the home, effectively stopping the flow of current before a residential fire can start.

Testing: *To test the Arc-D-tect Arc Fault Circuit Interrupter, turn OFF all loads downstream of the circuit breaker. Make sure power to the electrical panel is ON and the AFCI circuit breaker handle is in the ON position. Push the blue test button on the AFCI circuit breaker. If the circuit breaker is operating correctly, it will trip, and the handle will move to the tripped (center) position. Remember to reset the AFCI circuit breaker by moving the handle to the OFF position and then back to the ON position.*

Added electrical protection for your home

PROTECTION FOR ELECTRONICS FROM DAMAGING SURGES

Surges can enter your home's electrical system externally (e.g., lightning or utility surges) or can be generated within the home. These internally created surges are even more common than external ones and, without proper protection, can damage connected equipment.

Surge arresters help protect against power surges and should be used in conjunction with plug-in type surge suppressors located at the electrical outlet(s). Surge suppressors provide limited protection for individual equipment only and are not designed to safeguard your home's wiring or electrical panel. A surge arrester, such as the SQUARE D® SURGEBREAKER® Secondary Surge Arrester, helps protect electrical wiring and reduces power surges to a level that plug-in suppressors can handle.

Testing: *To test a SURGEBREAKER Secondary Surge Arrester, look for the green LED indicator light on the front of the unit. If the light is on, the unit is operational. If not, the unit should be replaced. Always check the surge arrester after a storm to make sure it is still working.*

Surge protectors, such as the SQUARE D® SURGEBREAKER PLUS Whole House Surge Protector, can create a blanket of surge protection throughout your home, for electrical, cable and phone systems.

Testing: *Check the green light on the AC section of the SURGEBREAKER PLUS device periodically to ensure that it is illuminated. If the green light goes out, it indicates that AC power protection has been lost.*

BACK-UP POWER CONNECTION

You can lose power for a variety of reasons – from summertime brownouts to severe storms. A SQUARE D Generator Panel can connect critical circuits, such as lighting and heat, to a back-up power source. Ask your builder, contractor or local Square D supplier about installing a back-up power source with a SQUARE D Generator Panel.

Troubleshooting

LIGHTS WON'T WORK?

It may sound obvious, but make sure the light switch is in the ON position, especially if the light is controlled by more than one switch or plugged into a receptacle that's controlled by a light switch. A burned-out bulb is another obvious, but often overlooked, culprit. If the switch is on, and the bulb is good, you may have a tripped circuit breaker. Go to your electrical panel and look for a breaker that's in the tripped or in the OFF position. Always make sure no one is working on the electrical system, then firmly move the tripped handle to the OFF position and then back to the ON position.

LIGHTS FLICKER?

Start-up of certain appliances, such as air conditioners and shop tools, may cause a slight flicker or blinking of the lights. A brief occasional flicker is normal. However, if permanent dimming occurs, or usage of a particular appliance repeatedly causes a circuit breaker to trip, that may be a warning signal that your electrical system is overloaded or something else is wrong.

RECEPTACLES AREN'T WORKING?

Check to see if a wall switch controls power to the receptacle, and keep in mind that each socket of the receptacle may be controlled by a different wall switch. Next, go to the electrical panel and check for a tripped circuit breaker. If the problem receptacle is located in the kitchen, bathroom, garage or outside, it may be a ground fault circuit interrupter (GFCI) receptacle or downstream of a tripped GFCI receptacle. If so, you'll see a reset button on the receptacle – push that button to reset the unit. Also check the electrical panel for a GFCI or arc fault circuit interrupter (AFCI) circuit breaker. If it's tripped, reset by moving the handle to the OFF position and then back to the ON position.

AIR CONDITIONING QUITS?

Often times, a blown fuse can be the cause of an air conditioning unit not functioning. Check the outdoor air conditioning disconnect to be sure it is in the ON position. Then, check your electrical panel for a tripped circuit breaker. Make sure no one is working on the electrical system, then firmly move the tripped handle to the OFF position and then back to the ON position.

CIRCUIT BREAKER TRIPPED?

Usually a circuit breaker trips because it detected a problem that it is designed to protect. So before resetting the breaker, look for any obvious reasons for the tripping. If none are obvious, reset the breaker. Do not repeatedly reset the breaker without resolving the cause of the tripping. You may have overloaded circuits or a problem in the permanent wiring, appliances or power cords.

If a problem persists after following these basic maintenance and troubleshooting tips, consult your builder's warranty procedures.

General maintenance

- Test ground fault circuit interrupter (GFCI) receptacles, GFCI circuit breakers, and arc fault circuit interrupter (AFCI) breakers once a month (see pages 4 and 5).
- Visually inspect surge arresters or protectors periodically and after major storms (see section on surge protection on page 6).
- Even if your smoke detector is hard-wired to your electrical panel, you should push the test button weekly and replace batteries annually. Consult your smoke detector manual for directions.

- Avoid pushing furniture against or placing on electrical cords. This can damage the cords and become a potential condition for arcing.

This brochure was developed with the assistance of members of the TeamWorks program, a joint effort between Square D/ Schneider Electric and leading electrical contractors throughout the United States.

IMPORTANT INFORMATION REGARDING YOUR ELECTRICAL SYSTEM