



SCHAEFER NEWS

Vol. 1 Issue 1

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Spring 2001

ELECTRICITY

WHAT'S IN YOUR HOME? PART 1

The Mysterious Invisible Power That Runs Your Home

To most homeowners, their electrical system is a mystery. Flip a switch, the light goes on. Plug in the toaster, you have toast. If the lights go out, check for a tripped breaker or blown fuse. For most homeowners this is the extent of their knowledge. In this issue we will give a brief overview of the electrical systems in most homes, it should answer many of the general questions home buyers ask.

In our last issue we discussed electrical safety concerns. It dealt primarily with GFCI circuitry along with a list of safety tips. You can view this article on our web site at www.mhschaefer.com.

All past newsletters can be viewed in our technical archive on our web site. Please feel free to read and print out these articles for your use. Many Realtors have asked to link our site to theirs so they can make this information available to their clients. You are welcome to do the same.

SHOW ME THE POWER!

Before most home buyers even think of safety, they want to know if their home has enough electrical power to service the needs of a modern family. There are two things that come into play to answer this question. What is the voltage rating and how many amps does the home have? What's the difference? If you compare electricity to water you could look at it as follows: Volts is how much power there is, this can be compared to water pressure. Amps is the current flow and can be compared to water flow through a pipe. All modern homes have 240 volts supplied to them; however the amperage can vary depending on the size of the home.

If this still sounds complicated, don't worry, Most people get along every day without understanding these more technical ideas. But even the most unskilled person can determine if they have enough voltage, and to some degree, whether or not the amperage to their home is too little, maxed out, adequate for now or adequate for any reasonable

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VOLTS:

Electricity comes to your home either above ground like the diagram on the front page or underground, as seen in the diagram on this page. In an above ground system you should see three wires looped and entering a conduit or outer insulation of the service wire coming down the wall of the home. This will tell you that there is enough voltage for the home. In some rare cases you may find an older home with only 120 volts to the house. This can be recognized by only two wires looped as the service comes to the house. Unless you live alone, use very few electrical devices at one time, and don't mind not using an electric range or cloths dryer you will need an upgrade. Practically speaking, you WILL need an upgrade.

If your home's electrical service enters from underground you cannot count the wires, they are not visible. However, underground systems were not in use for homes during the times of 120 volt systems, so you can feel assured you have enough volts. You can also look at your meter, on it, you will find the voltage rating.

AMPS:

In very rare cases 30 amp systems are still found in homes with 120 volts. Most homes today will have 60, 100,125,150,200 amps or more. How much is enough for your home? This falls into an area that is a little gray compared to Volts. The following list will give an overview of how much amperage is need for what size house.

- a 60 amps should be adequate for a three bedroom house if the range, cloths dryer, and water heater are all run on gas.
- b 100 amps should be adequate for a four bedroom house when the range, cloths dryer, and water heater are run on electricity with no more then one window air conditioner.
- c Adding central air conditioning will require an additional 50 amps. (most homes like the one described in "c" will upgrade to 200 amps)
- d Most homes with electric heat are found to have 200 amp systems.



With that list you may say, "that looks pretty straight forward, where is the gray area." The list is an accurate rating and home inspectors should use it as the basis of their evaluation; however, technical evaluation and practical experience are sometimes two different things. These ratings are typically designed to reflect maximum usage, which hardly ever happens. If you are moving into a home with four bedrooms (see "c" below) and the family that was living there is as large or larger then yours, they have lived there for many years, all appliances run on electricity, and there are three window air conditioners, you might ask, "how did they get along with an undersized electrical system?" How did the couple living in the cape with an electric range get by so long with 60 amps?

While a house may technically have an undersized service, personal usage often play a larger roll in whether or not an upgrade will be needed. The house with multiple window air conditioners are more likely to trip and individual breaker if they all run on the same circuit before it trips the main breaker. A good home inspector will explain both the technical and practical applications of your homes amperage.

HOW TO DETERMINE THE AMPS IN THE HOME:

If the home is relatively modern or has been upgraded to use circuit breakers, the amperage is typically marked on the "main" breaker. The main breaker is normally found in the breaker panel box unless this box is more that 8 ft. away from the meter, you will then typically find the main breaker in a box under the meter.

If you have fuses, there is a fuse block marked "main." If you pull this block out of the panel you will see two fuses, on the fuse will be marked the amp size. You do not add the two fuse sizes together to determine you amps. A 100 amp system will have two 100 amp fuses in the fuse block.

There are some exceptions. You may not

