

MAIN COMPONENTS OF AN ELECTRICAL SYSTEM

Power, constituted by alternating current, runs everything in our homes. Power enters every house through the service entrance panel and then, through wires, reaches any device requiring electricity. As we have already seen, this course of the electrical current is a circuit.

The service entrance panel is the control centre for home electrical services. Placed in a cabinet or box, it is often located outside, below the electric meter¹. In this panel you will generally find the main fuses or circuit breakers, to which the wires connect. The main circuit breaker that can be found in a home electrical system is the Ground Fault Circuit Interrupter.

After passing through the service entrance panel, the wires enter a distribution centre, housed in the service entrance panel or in a separate subpanel. Here the current is divided into branch circuits, each protected by a fuse or circuit breaker. The branch circuits are smaller conductors which run to lights,

switches, sockets and plugs, and permanently wired appliances.

Every circuit has a grounding system. Grounding ensures that, in the event of a short circuit, all metal parts of the wiring system or appliances connected to it will be kept at zero volts.

Connections between wires are made inside plastic or metal boxes mounted in the walls. Switches, sockets, and wall or ceiling-mounted light fixtures², all have their own boxes. Individual wires are wrapped in colour-coded insulation for easy identification. Though hot wires are usually black or red, they may be any colour other than white, grey or green. Neutral wires are white or grey. Grounding wires are bare³ or green.



GLOSSARY

- 1 device that measures electricity use
- 2 equipment
- 3 exposed, uncovered

READING COMPREHENSION

● Answer the following questions.

- ① What is the function of the service entrance panel?
- ② Where is the service entrance panel located?
- ③ Where is the distribution centre located?
- ④ What happens to the current in the distribution centre?
- ⑤ Why are circuits grounded?
- ⑥ Where are connections between wires hosted?
- ⑦ What colour are hot wires and grounding wires?
- ⑧ What are fuses?
- ⑨ What is the function of the GFCI?

ACTIVITIES



MATCHING

● Match a term in the first column with a word in the second one, then provide the Italian equivalent.

- | | | |
|----------------|------------|-------|
| ① Electric | Ⓐ Breakers | |
| ② Circuit | Ⓑ Centre | |
| ③ Distribution | Ⓒ Leakage | |
| ④ Grounding | Ⓓ Meter | |
| ⑤ Short | Ⓔ Wire | |
| ⑥ Current | Ⓕ Circuit | |

VOCABULARY

● Match the following technical terms with their Italian equivalents.

- | | |
|------------------|----------------------|
| ① Wire | Ⓐ Spina |
| ② Fuse | Ⓑ Impianto elettrico |
| ③ Switch | Ⓒ Elettrodomestico |
| ④ Branch circuit | Ⓓ Fusibile |
| ⑤ Plug | Ⓔ Circuito derivato |
| ⑥ Appliance | Ⓕ Cavo |
| ⑦ Wiring system | Ⓖ Presa di corrente |
| ⑧ Socket | Ⓗ Interruttore |