

Electrical installation

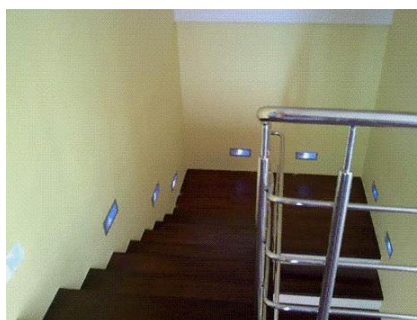
Electrical installation within a building is an interoperable set of electrical equipment.

Home electrical installation consists of power lines and weak current lines. A power line is considered a single phase (230 V) or triple phase current (400 V) system from the power distribution point to the house. These lines are used to power lights and sockets in the house which are secured by fuses or circuit breakers.

The weak current lines are used to for telephone system, intercom, antenna feed lines, cable TV or home alarm systems.

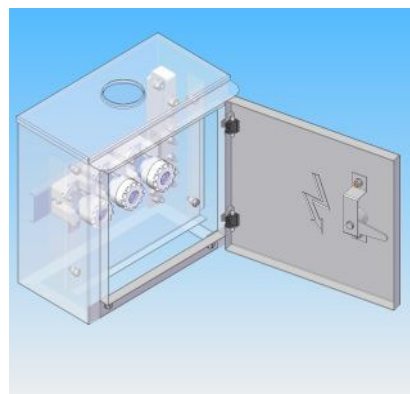


During electrical installation



After it is finished

Service wires supply electricity to the house from the company's power lines. The service head, sometimes called the weather head anchors the service wires to the home. It is attached to the roof of the house. The service wires consist of four conductors (supplying 400 V) passing through a fuse box into a electric meter box. The conductors must have the same surface area through their whole length. The service wires must be installed in such a way that illegal hook-ups are not possible.



A power meter is used for measuring of consumption of electric energy. It is mounted outside the house so that an employee of the power company can read out values regularly.

Service panel distributes electric power into circuits.

Electric installation utilizes insulated copper conductors with area of 1,5 or 2,5 mm². For easier navigation and improved safety the following color code has to be used for conductors (applicable in the EU)

L1 – line conductor – black

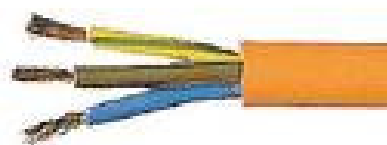
L2 – line conductor – brown

L3 – line conductor – grey

N – neutral conductor – blue

PE – protective conductor – green-yellow

(PEN – PEN conductor – green-yellow + blue on the conductor ends) old installations





The conductors have to be protected against overloading and short circuit. For this fuses and circuit breakers are used. When current passes through a fuse, the heat is dissipated into its surrounding. When the conductor within the fuse can't dissipate the heat anymore, it burns and thus the circuit becomes opened. The fuse must never be fixed by inserting a new conductor when it burns through. Always replace burned fuse by a brand new one. Circuit breaker works just like a fuse, but it does not have to be replaced, it can be used over and over again.

Socket installations

- One socket circuit can contain at maximum 10 sockets.
- The power drain cannot exceed 3680 VA when using a 16 A fuse, or 2300 VA when using a 10 A.
- The sockets have to have the protection pin connected to the PE or PEN conductor.
- Single phase appliances rated above 1200 VA must have dedicated fuse and a socket circuit.



Light installations

- The sum of nominal currents for lights connected to a light circuit cannot exceed the circuit's fuse current rating.
- The fuses for light circuits cannot exceed 25 A.
- Places where people gather in larger numbers have two or more light circuits.
- The light circuit switch has to be placed by the door entrance on the door knob side at the height of 120 to 150 cm from the floor.



VOCABULARY

power line – elektrické vedenie
weak current line – slaboprúdové vedenie
socket – zásuvka
fuse – poistka
breaker – istič
electric meter box – elektromerová skriňa
surrounding – okolité
exceed – prekročiť
knob – tlačidlo, gombík

service panel – rozvodnica
service head – strešník
weather head – strešník
anchor – kotva, kotviť, upevniť
considered – považovaný za
dissipated – rozptýlený
dedicated – vyhradené, priradený
floor – podlaha, dlážka
gather – zhromaždiť

Note: In TN systems, the neutral is directly earthed and can be divided into three types:

TN-S – the neutral conductor N and the protective conductor PE are separated,

TN-C – the neutral and protective functions are combined into a single conductor PEN,

TN-C-S – the neutral and protective functions are partially combined into a single PEN conductor and partially separated PE + N.