

Manual Transfer Switch & their types



Manual transfer switches as the name suggests transfers power from one source to another manually. The term manually is important here as there is no solid state automatic transfer of power in this case. It usually consists of a single power cord that runs from the **backup generator** into the main supply as the alternative source of energy. You simply have to toggle on the switch to backup mode and there you go, power is back.

These are mostly used transfer switches for low power and home usage. They usually handle current in the range of 16 to 120 amperes. It can switch even while the generator is running. They are especially handy for portable generators.

Operation and Components

As far as operation of these switches are concerned they are the simplest. They just consist of a switching panel and powering relays.

Circuit breaker may also be used to ensure safety and overloading. As soon as the user pulls down the terminal the switch connections are changed and a relay is energized which in turn powers the switch connected to the backup generator and emergency power continues to flow until switch position are changed again.

Availability Options

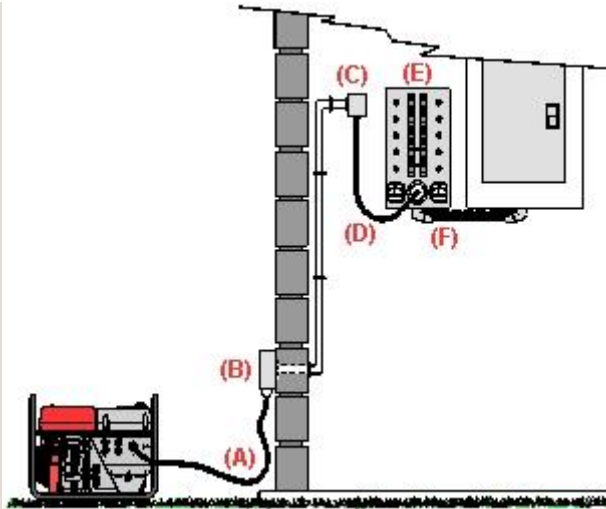


- **Pre-wired:** This is the easiest to install and implement option available. This option provides you with all the necessary wiring you need in a pre-built breaker box. All you need to do is connect wires with it and attach it to your backup generator.
It will not only ensure safe use but also provide easy swapping.
- **Inlet box:** An inlet box is similar in option to the pre-wired case except that the main wire connecting to the backup generator is housed outside premises of the building to prevent mesh.
- **Outdoor:** They provide water proofed housing to allow any seepage in areas that receive heavy rain fall round the year. These switches are usually installed outside house or building to prevent and damage near the main circuit breaker.

Types of manual transfer switches

Manual transfer switches are not diverse in nature as they are used for domestic and quite simpler purposes.

However a brief classification is given below.



- Simple KITS: These switches are usually used for fast installation and switching in use for residencies and somewhat commercial zones. They consist of switches, power cords and cables.
- Specified Circuitry: These switches are used for transferring backup power to only intended circuits. Each wire is clearly marked and allows easy and fast installation. They connect only to those load centers which are intended.
- Rated load centers: They can be used as either main panel or sub panel. They are usually a combination of transfer switches and load centers. They can provide power to 38 to 40 separate circuitries.
- Single circuit: They are used for providing backup power to single circuits. Only one circuit at a time makes them quite safe and easy to use. They are especially useful for furnaces and pumps and are quite economical as well.
- Standard switches: these switches are used where current load is from 100-900 A. Like other switches they are fast and efficient but are not economical somewhat.

Some precautions

- Always take into consideration wattage before using any kind of transfer switch. The cord's ratings should match the generator or main supply ratings.
- Don't overload the generator. More the power more the supply. If you have high power generator you can power more circuits at the same time.
- Always install some monitoring device like some watt mater to be able to know how much power is being consumed and when it exceeds the limits.

- Always use professional assistance while installing such devices as safety first should be followed strictly.

Source: <http://engineering.electrical-equipment.org/panel-building/manual-transfer-switch-and-their-types.html>