

ABSTRACT

Electronic devices is now almost become a primary need. Technological development has given rise to various kinds of electronic devices that help people in everyday life. Some electronic devices requires a great power so that when an electrical installation has a lot of electronic devices and should be used at the same time, can often result in lost electrical current. Too magnitude of power usage in an electrical installation will result in the fall of the switch MCB (Miniature circuit breaker) suddenly (Trip) so that the electric current in an electrical installation is interrupted. If this condition often occurs in a given time, it can cause damage to electronic devices which are working. It is therefore necessary to have a tool that can monitor how much power usage in the home and can control the use of the electrical load automatically. Control aims to limit the electrical load which is used by the level of priority in order not to occur trip (current termination) all of a sudden.

This project examines how to prevent the trip on the MCB without compromising the primary function of the MCB for electrical installation safety and limiting current in a home. It works by turning off one of the devices in the home is based on the use of the lowest priority.

From the tests, the successful use of limited resources in a way cut off power to the load so that the burden of being dead and not having MCB trip. The power value obtained from the flow sensor is placed in series with the MCB. Current value is then multiplied by the value of 220V AC voltage. How to turn off the load is to activate the relay when power usage has reached 97% of the maximum value of MCB is 440VA ($I=2A$, $V=220V$). Whereas if the power usage reaches 92% of the maximum limit of MCB is 418 VA ($I=1.9A$, $V=220V$), then the tool will take action to issue a warning sound.

Keywords: Trip at the MCB, Power limiter, Microcontroller