

Smart Power Monitor & power meter Integrated with Multiple sockets

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Abstract:

Nowadays people frequently use multiple sockets or extension cords to expand the wall sockets of house rooms. However using lots of electrical appliance at the same multiple sockets simultaneously will possibly cause wire burning. In order to prevent the wire burning we proposed a novel design of multiple sockets which will remind user whether it is safe to use the sockets. There are three states. The safe, warning, and dangerous states. If the current flow into the device is under 70% of maximum load, the green LED will be turned on. If the current flow is between 70% and 90% of maximum load, the yellow LED will be turned on. If the current flow is over 90% of maximum load, the red LED will be turn on.



Applications:

This device is integrated with power monitor, power meter and multiple sockets. In this project, we use the magnetic sensor to detect the magnitude of magnetic field caused by current flow through the wire. According to ampere's law, the magnetic field in space around an electric current is proportional to the electric current which serves as the source signal. From the output of magnetic sensor, we can transform magnetic field signals into the magnitude of current. Using the wireless sensor network, we can set and monitor as many devices as possible simultaneously. We also create a database to record all the information of the electric current flowing into the device.



Marketing:

With this device people do not worry about the wire burning when many electrical appliances are used at the same time. Consumers can buy the device as many as they need. And people can obtain the information about power usage at any time.