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Smart Overload Protection System with Automatic Power Cutoff

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Abstract: *The reason of the Smart Overload Protection System with Automatic Power Cutoff is to enhance electrical safety in each industrial and residential environment. It swiftly detects overload conditions and tracks the contemporary flowing via related devices in actual time. To keep away from electric risks like fire or system damage, the tool right away cuts the energy deliver while it detects an overload. To assure a activate and particular reaction, the device employs logic based on microcontrollers. Users are informed of the fault scenario through an alert mechanism as a way to take instantaneously corrective action. It may be related to the Internet of Things for remote tracking and helps manual resets. Power intake is decreased through the usage of energy-efficient components. This approach improves operational continuity, safety, and dependability. It may be utilized in important infrastructure, workshops, and smart homes. The design is adaptable to numerous load scores and is scalable.*

Keywords: Smart overload protection, automatic power cutoff, microcontroller-based safety, electrical safety system, real-time current monitoring, fault detection, IoT-enabled protection, fire prevention, power management, smart home safety

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