

Electro Smart an Intelligent Automatic Multi-Functional Lightning Shock Hazard Detection and Controlling Plug Base Plugging Unplugging Device

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Electrical safety is critical in our modern environment, where the proliferation of electrical equipment poses significant threats, especially from lightning strikes and power quality changes. To remedy this, our revolutionary invention provides the "*SmartElectro*" device, an independent system for detecting electrical shocks and electric storm conditions. This eliminates the need for human disconnection and allows for simple, automatic total shutdown and resetting of electrical equipment, even in remote locations. Featuring real-time hazard monitoring and remote control via a mobile app, SmartElectro seeks to improve user safety, revolutionize plug sockets, and increase overall electrical efficiency. SmartElectro successfully detects and controls electrical shock threats from lightning and power quality changes, instantly disconnecting power in the event of harm. Our processes include designing a lightning protection system, testing several models, leveraging 3D simulation tools, and collecting data in real time. Our goal is to develop a complete, state-of-the-art device by integrating software and hardware components such as the *Arduino IDE* and mobile application frameworks with sensors, indications, microcontrollers, and custom-made *PCBs*. In addition to increasing productivity and preventing electrical accidents, it promotes energy efficiency, cost savings, health and safety, and stress reduction. Targeting global electrical appliance users, market size and production scale are determined by our ability to meet market demand and expectations. With a focus on safety, convenience, and technological innovation, SmartElectro aims to transform electrical safety practices and improve overall efficiency for a wide range of users.

Keywords: *Lightning shock hazard; Automatic installation; Remote control; Electrical safety; Energy efficiency*