

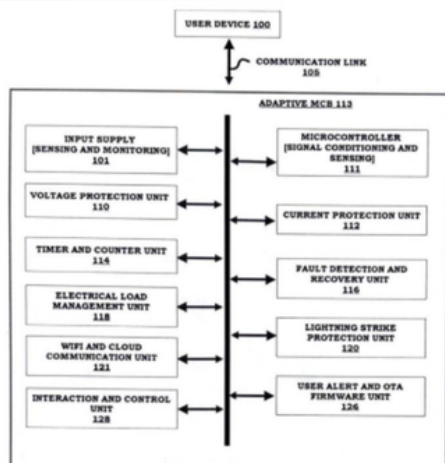
SELF-HEALING ADAPTIVE CIRCUIT BREAKER FOR INTELLIGENT ENERGY AUTOMATION AND FAULT RECTIFICATION

Seeking parties interested in licensing and commercialization of technology.

Technology Brief

This Technology relates to a smart miniature circuit breaker (ADAPTIVE MCB) that combines intelligent protection, wireless communication, and real-time analytics for enhanced electrical safety. The system integrates modules for voltage and current protection, fault detection, relay-based load management, RTD-enabled thermal trip, and secure over-the-air firmware updates. An STM32 microcontroller processes sensor inputs and executes decision logic to isolate or restore electrical loads, while an ESP8285 Wi-Fi module provides cloud connectivity, remote configuration, and fault alerts. Additional features include lightning strike protection, LCD display with tactile input keys, automatic reconnection, programmable scheduling, and energy data logging for predictive maintenance. The compact design reduces system complexity and supports integration with IoT platforms. Applicable to residential, commercial, and industrial environments, the ADAPTIVE MCB delivers self-healing fault rectification, improved reliability, and intelligent energy automation.

Block Diagram



Technical Applications

This technology is primarily applied in residential, commercial, and industrial electrical distribution systems, smart buildings, and remote infrastructure monitoring. It is particularly well-suited for automated energy management in smart homes, microgrid load control, industrial panel protection, telecommunication tower power units, and unmanned facility monitoring.

Salient Features

- ✓ Self-Healing Fault Recovery
- ✓ Comprehensive Multi-Level Protection
- ✓ Smart IoT Connectivity & Secure Updates

Glimpse of the Technology



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ITNT-TECH-0184



TECHNOLOGY SECTOR

Electronics & Semiconductors



IP STATUS

Patent Granted



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TECHNOLOGY READINESS LEVEL

TRL 4

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