Automatic power cut-off of distribution box and meter

Overview

This document describes an automatic cut-off electric meter that can disconnect a customer''s power connection remotely from the server if the customer fails to pay their bill on time.

Key Takeaways

Automatic power cut-off systems disconnect electricity either for safety, overload, or non-payment, using IoT-enabled devices or mechanical triggers. IoT-Based Automatic Cut-Off SystemsModern distribution boxes and meters can be equipped with IoT-enabled controllers that monitor electricity consumption in real-time. These systems use embedded devices, such as NodeMCU ESP8266 microcontrollers, relays, and GSM modules, to automatically disconnect power when certain conditions are met, such as exceeding a consumption limit or non-payment of bills.

Users receive notifications via SMS or mobile apps before disconnection, and the system updates the central management database for billing and monitoring purposes. This approach also helps prevent electricity theft and meter tampering. Smart Electrical PanelsIoT-enabled electrical panels, also called smart distribution boards, integrate sensors, communication modules, and edge computing to monitor voltage, current, temperature, and breaker status in real-time.

These panels can automatically cut off power in case of overloads, short circuits, or environmental hazards. They also allow remote monitoring and control, enabling utilities to proactively manage energy distribution and reduce downtime.

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

Meter Box Safety Devices

For maintenance and safety, meter box door-opening power-off devices are used. These devices automatically cut off power when the meter box door is opened, preventing electric shock during maintenance. They can operate via mechanical triggers, magnets, springs, or induction mechanisms, and may also include manual override switches for controlled operation.

Applications and Benefits

Safety: Prevents electric shock during maintenance or meter tampering. Billing and Revenue Management: Automatically disconnects power for non-payment, ensuring timely revenue collection. Energy Efficiency: Monitors consumption and prevents overloads, reducing energy waste.

Remote Control: Utilities can manage power distribution and respond to faults without on-site visits. Overall, automatic power cut-off systems combine safety, efficiency, and smart monitoring, ranging from simple mechanical devices to advanced IoT-enabled distribution boards, making electricity management more reliable and secure.

Article Content

Remote Cut-Off for Electric Meters | PDF | Arduino | Electricity

This document describes an automatic cut-off electric meter that can disconnect a customer''s power connection remotely from the server if the customer fails to pay their bill on time. The meter uses an

IoT BASED DISTRIBUTION LINE CUT OFF SYSTEM

To mitigate these issues and ensure timely revenue collection, the project proposes an automated system that instantly disconnects power for delinquent customers.

Smart PDU — remote power control with short-circuit protection

Set individual current consumption thresholds for each output and notify administrators or automatically turn off power to consumers who exceed the set threshold. This in turn protects against possible

Meter box door opening power-off device

The automatic triggering mechanism can automatically cut off power based on the status of the meter box door, such as through magnetism, springs or other induction devices.

Iot Based Automatic Electricity Cut

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

Proposed Design:In this paper we proposed a system to improve TNB services efficiency by implementing the automatic cut off system once the customers power consumptions reach to the limit.

Sanjay-bhau/Auto-power-cut-system

Leveraging motion detection technology, this system ensures that electricity is conserved by cutting off power when no movement is detected, thereby promoting sustainable energy.

IOT Based Distribution Line Cut Off System | Frontiers in Health ...

In this paper, we presented an automatic cutoff system that would be put into place as soon as a customer''s power consumption reached its limit, hence improving the efficiency of services.

IOT Based Smart Metering and Remote Electricity Disconnection

The project introduces an IoT-Based Remote Electricity Cut-Off System for Non-Payers, which uses smart meters, IoT controllers, and cloud-based monitoring to enable utility providers to manage

Design and Implementation of an Automatic Power Cutoff System

This paper presents an innovative automatic power cutoff system designed to disconnect electrical devices from the AC mains supply after a user-configurable time delay.

NYT Connections archive

Every NYT Connections puzzle ever published is listed here, organised by date, with all four category groups and their sixteen words. The NYT only offers the current day''s puzzle for free,

IoT BASED DISTRIBUTION LINE CUT OFF SYSTEM

In regions plagued by non-payment consumers and electricity theft, traditional methods of disconnecting supplies encounter resistance, bribery, and meter tampering. To mitigate these issues and ensure

Iot Based Automatic Electricity Cut

It causes shortage of power supply to residential as well as commercial premises. The aim of the project is to design and control a system which will automatically cut-off the electricity connection directly

Design and Implementation of an Automatic Power Cutoff System

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved

The automatic cutoff feature helps prevent overcharging and unnecessary power drain, contributing to both energy conservation and extending the lifespan of connected devices. The system''s reliability,

Distribution Boxes Types – The Complete Guide

The power distribution boxes deliver electricity from the main electrical main to other circuits. Several distribution boxes are designed for specific use in

Automatic power cut-off device for emergency situations

An automatic power cut-off device for emergency situations which is capable of immediately sensing occurrence of an emergency situation such as an accident of a vehicle striking against an obstacle

Overload protection

Overload protection – an effective way to automatically disconnect power in industrial applications Overload protection – how to design an automatic power cut? Overloads in electrical power circuits

Amazon : Power Distribution Box

Power Distribution Box, 110V Electricity Meter Electrical Box with NEMA 5-20 Power Outlet Pane,IP54 Electrical Breaker Socket Distribution Box for Construction Sites, workshops and Factories 100+

What is an Electrical Distribution Box? A

The distribution box helps distribute load evenly across different circuits, preventing overload. Protects Against Short Circuits and Surges: With

Contact Us

Continue your research online:

Website: https://alfa-pro.co.za
Technical inquiry: https://alfa-pro.co.za/contact.html

This document is for preliminary research. Verify specifications against current standards, product documentation and project requirements.

© 2026 ALFA PRO COMMUNICATION SYSTEMS (Pty) Ltd - All rights reserved