

RIVO MULTITRADE OPTICAL SYSTEMS

Series connection of socket and distribution box



Overview

In a radial circuit power is transmitted from point to point by a single length of cable linking each point to the next.

Key Takeaways

Series connection of sockets involves linking outlets one after another, but it is generally not recommended for household wiring due to reliability and safety concerns. Understanding Series Wiring

In a series connection, each socket is connected sequentially to the previous one, so the same current flows through all outlets. This means that if one socket fails or becomes overloaded, all downstream sockets lose power. Voltage is divided across the sockets, which can reduce the efficiency of devices plugged in further along the chain. While series wiring can save on wiring materials and allow daisy-chaining, it is rarely used in modern residential or commercial installations because of these drawbacks.

Distribution Box Overview

A distribution box (DB) is the central point where the main power supply is distributed to multiple loads. It contains protective devices such as:

- Main MCB (Double Pole): Controls the overall supply and protects against overloads.
- Single Pole MCBs: Protect individual circuits or loads.

- RCCB: Provides protection against earth leakage and is essential for safety in domestic installations . The input supply (phase and neutral) is connected to the main MCB, which then distributes power to the individual MCBs and subsequently to the connected loads .

Practical Wiring Recommendations

- Parallel Wiring Preferred: In household and commercial setups, sockets are typically wired in parallel, not series . Each outlet receives full voltage independently, so a failure in one does not affect others.
- Series Wiring Use Cases: Series connections are sometimes used for specialized circuits, such as connecting GFCI or AFCI outlets in series to provide downstream protection .
- Safety Considerations: Avoid connecting high-power devices in series circuits, as this can overload the circuit and create hazards . Always ensure proper grounding and use protective devices in the distribution box.

Summary

While it is technically possible to wire sockets in series from a distribution box, parallel wiring is strongly recommended for reliability, safety, and consistent voltage delivery. The distribution box should always include MCBs and RCCBs to protect circuits and users, and series connections should be limited to specific protective arrangements rather than general household power distribution .

Article Content

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