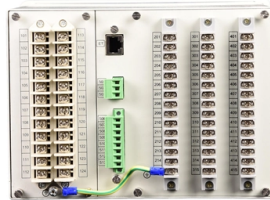


How should the residual current device RCD be configured in the home s electrical distribution box



Overview

It works on the principle of sensing residual current which is why it is called a residual current device.

Key Takeaways

An RCD should be installed after the main MCB in the distribution board, with downstream circuits connected to its output, ensuring protection against leakage currents while coordinating with overcurrent devices.

Placement and Wiring
The main MCB (or main switch) should always be connected first to the incoming supply from the energy meter. The RCD is then connected downstream of the main MCB, so it can provide protection against earth leakage without being exposed to overcurrent or short-circuit conditions, which it cannot handle on its own . All single-pole MCBs for individual circuits—such as lighting, sockets, and appliances—should be connected to the output of the RCD . This ensures that any leakage in these circuits will trip the RCD and cut off power immediately .

Current Rating

The RCD current rating should be equal to or higher than the main MCB rating. For example, if the main MCB is rated at 32A, the RCD should be rated at 32A or higher . The sensitivity of the RCD is typically 30 mA for personal protection in residential settings, which is sufficient to prevent electric shocks .

Selectivity and Coordination

If multiple RCDs are used in a home, selectivity must be considered to prevent unnecessary tripping of upstream devices. This can be achieved by using time-delayed (selective) RCDs upstream and standard RCDs downstream, or by subdividing circuits so that only the RCD closest to the fault trips . Proper coordination ensures that a fault in one circuit does not cut power to the entire house.

Testing and Maintenance

RCDs should be tested at least once a month using the built-in test button. Pressing this button simulates a leakage current, and the device should trip immediately, confirming proper operation . Regular testing ensures the RCD remains reliable and effective in protecting against electric shocks.

Summary

- Connect the main MCB first, then the RCD downstream.
- Connect all individual circuit MCBs to the output of the RCD.
- Ensure the RCD rating matches or exceeds the main MCB and has appropriate sensitivity (typically 30 mA).
- Use selective or cascaded RCDs if multiple devices are installed to maintain power availability.
- Test the RCD monthly to verify proper operation. Following these guidelines ensures that the RCD provides effective protection against leakage currents while coordinating safely with other protective devices in the home electrical system.

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Fixed setting RCD with a rated operating residual current not exceeding 30mA. It provide additional protection in area where

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