

Distribution box with live wire bar



Article Overview

The live wire (phase) in a distribution box connects to the line terminal of the circuit breaker, distributing power safely to all sub-circuits.

Live Wire Connection

In a distribution box, the incoming live wire (L), also called the phase or hot wire, is connected to the line terminal of the circuit breaker. This serves as the primary source of electrical energy from the mains supply and ensures that each sub-circuit receives power through its respective breaker. For single-pole (1P) breakers, only the live wire is interrupted, while the neutral bypasses the breaker and connects directly to the neutral busbar. For double-pole (2P) breakers, both live and neutral wires are connected to the breaker and are disconnected simultaneously when the breaker trips.

Neutral and Earth Connections

The neutral wire (N) is connected to the neutral busbar in the distribution box. In 1P breakers, the neutral bypasses the breaker, while in 2P breakers, it is controlled along with the live wire. The protective earth (PE) wire is connected to the earth busbar, providing safety against earth faults. For breakers with residual current protection (RCDs), the PE wire may also connect to a dedicated terminal on the breaker.

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