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Auto Selection of Any Available Phase in A Three Phase Supply System

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Abstract: *In areas where three-phase electrical power distribution is common, inconsistent power availability in individual phases can lead to equipment malfunction or downtime. This project presents an automatic phase selection system designed to ensure uninterrupted power supply by dynamically selecting any available phase among the three. The system continuously monitors the voltage levels of all three phases and instantly switches to an active phase in the event of a failure or voltage drop in the currently used phase. This eliminates the need for manual intervention and protects connected loads, especially single-phase appliances, from power disruptions. The solution is cost-effective, reliable, and ideal for residential, commercial, and small industrial applications. The implementation employs relays, voltage sensing circuits, and a control logic unit to achieve phase selection seamlessly without overlapping phases, thereby ensuring operational safety and continuity.*

Keywords: Three-phase supply, Automatic phase selector , Power continuity , Voltage monitoring, Relay switching , Phase failure , Load protection , Uninterrupted power supply