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(54) **SOLID-STATE CIRCUIT BREAKER TRIPS AN AIR GAP ACTUATOR AND SOLID-STATE SWITICHING COMPONENTS AT THE SAME TIME OR THE SOLID-STATE SWITICHING COMPONENTS WITH A DELAY**

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(57) **ABSTRACT**

A solid-state circuit breaker (SSCB) comprises a breaker housing, line-in and line-out terminals and one or more solid state switching components. The SSCB further comprises an air gap disposed between the line-in and line-out terminals and coupled in series with the solid-state switching components to complete a current conducting path when closed. The air gap includes an air gap driving mechanism. The solid-state circuit breaker further comprises an air gap actuator to interact with the air gap driving mechanism. The SSCB further comprises a controller that controls the air gap actuator and is configured to: (a). send a tripping signal to the air gap actuator and the one or more solid state switching components at substantially the same time or (b). send a tripping signal to the air gap actuator a short amount of time earlier than sending the tripping signal to the one or more solid state switching components.