



LOW SPEED ELEVATOR CAR SAFETY CIRCUIT

The present invention is directed to a safety circuit which detects when the elevator car is at least a predetermined distance away from a floor landing while a car door is open. The safety circuit, upon detection of this condition, activates a solenoid located on a safety governor of the elevator car and/or the counterweight, causing safeties to engage, precluding further motion of the car and/or counterweight. The safety circuit comprises the solenoid and a relay having a contact and a coil. Given means for energizing the coil when the elevator car drifts beyond a predetermined distance with a door open, the contact will close, providing power to the solenoid for actuation. The safety circuit preferably employs a relay which indicates whether the car door is open or closed, as well as relays which indicate whether various other system operational checks are satisfactory. In order to check the functionality of the components upon which the safety circuit relies, the preferred embodiment provides additional circuitry to check the functionality of the door relay and the operational check relay, as well as circuitry to check the electrical integrity of and the power connections to the solenoid. The safety circuit actuates the solenoid if a car door is open, the car is beyond the predetermined distance from the landing, and a machine tachometer indicates a non-zero velocity. The predetermined distance from the landing is preferably the outer door zone.