Disclosed is a system for short circuit protection for electrical circuit breakers. The system comprises a microcontroller, a signal conditioning system capable of providing DC shifted output signal to the microcontroller, a trip circuitry for enabling a tripping mechanism of the electrical circuit breaker on receiving input from the microcontroller and a power supply source for powering the signal conditioning circuitry, the microcontroller and the trip circuitry. Wherein, the microcontroller processes the signal form the signal conditioning system, detects whether short circuit fault is present and gives a command to the trip circuitry to start the trip mechanism.