ABSTRACT

POWER CONVERTER CONTROL DEVICE

The present invention is a direct-power converter control device that enables driving of a motor with high efficiency. A rectified voltage obtained by full-wave rectifying a single-phase AC voltage is applied across first and second DC power supply lines. A discharge switch and a capacitor are connected in series to each other between the first and second DC power supply lines. A boost circuit boosts the rectified voltage to charge the capacitor. An inverter receives, as an input, the rectified voltage as a DC voltage when the discharge switch is not conducting, receives, as an input, a voltage across the capacitor as the DC voltage when the discharge switch is conducting, converts the DC voltage as input into an AC voltage, and outputs the AC voltage to the motor. A switch control unit maintains the discharge switch not conducting over a first time period, and switches the discharge switch between conducting and not conducting in a second time period other than the first time period. A charge and discharge time period setting unit sets the first time period when a rotational speed of the motor is higher than a speed threshold shorter than the first time period when the rotational speed is lower than the speed threshold.

FIG. 4