CLAIMS

1. An air conditioner including an outdoor unit and an indoor unit, the outdoor unit comprising:

a converter main circuit to rectify and smooth an AC voltage of an AC power supply, and allow a DC voltage to be generated across a main circuit capacitor;

an inverter main circuit to convert the DC voltage generated by the main circuit capacitor into an AC voltage;

a compressor motor to be driven by the inverter main circuit;

an outdoor fan;

a fan motor to receive a supply of the DC voltage generated across the main circuit capacitor and rotationally drive the outdoor fan; and

a controller to receive a supply of the DC voltage generated across the main circuit capacitor and control the converter main circuit, the inverter main circuit, and the fan motor, wherein

when the fan motor rotates due to outside wind hitting the outdoor fan and enters a power generating state during a standby power saving mode of the outdoor unit,

the controller maintains the outdoor unit in the standby power saving mode without allowing the outdoor unit to shift to a non-operating state.

2. The air conditioner according to claim 1, further comprising:

switching means to switch between a supply state to supply the AC voltage of the AC power supply to the converter main circuit and a cut-off state to cut off a supply of the AC voltage of the AC power to the converter main circuit, wherein

the switching means is in the supply state when the outdoor unit is in the non-operating state, and

the switching means is in the cut-off state when the outdoor unit is in the standby power saving mode.

3. The air conditioner according to claim 1 or 2, further comprising:

an output voltage detection circuit to detect a voltage between terminals of the main circuit capacitor, wherein

the controller prevents the outdoor unit from shifting to the non-operating state from the standby power saving mode when the voltage detected by the output voltage detection circuit is higher than or equal to a preset first threshold voltage.

4. The air conditioner according to claim 1 or 2, further comprising:

a rotational speed detection circuit to detect a rotational speed of the fan motor, wherein

the controller prevents the outdoor unit from shifting to the non-operating state from the standby power saving mode when the rotational speed detected by the rotational speed detection circuit is higher than or equal to a preset first threshold rotational speed.

5. The air conditioner according to claim 3, wherein after the controller prevents the outdoor unit from shifting to the non-operating state from the standby power saving mode, the controller drives an actuator included in the outdoor unit when the voltage detected by the output voltage detection circuit is higher than or equal to a preset second threshold voltage that is higher than the

~~first threshold voltage.~~

~~6. The air conditioner according to claim 5, further comprising:~~

~~a rotational speed detection circuit to detect a rotational speed of the fan motor, wherein after the controller drives the actuator included in the outdoor unit, the controller stops the drive of the actuator when the voltage detected by the output voltage detection circuit is lower than or equal to a preset third threshold voltage and the rotational speed detected by the rotational speed detection circuit is higher than a preset second threshold rotational speed, the preset third threshold voltage being higher than the first threshold voltage and lower than the second threshold voltage, the preset second threshold rotational speed being lower than a first threshold rotational speed for detecting the power generating state caused by the rotation of the fan motor.~~

1. An air conditioner including an outdoor unit and an indoor unit, the outdoor unit comprising:

a first circuit to rectify and smooth an AC voltage of an AC power supply, and allow a DC voltage to be generated across a main circuit capacitor;

an inverter main circuit to convert the DC voltage generated by the main circuit capacitor into an AC voltage;

a compressor motor to be driven by the inverter main circuit;

an outdoor fan;

a fan motor to receive a supply of the DC voltage generated across the main circuit capacitor and rotationally drive the outdoor fan;

a controller to receive a supply of the DC voltage

generated across the main circuit capacitor and control the first circuit, the inverter main circuit, and the fan motor; and

an output voltage detection circuit to detect a voltage between terminals of the main circuit capacitor, wherein

upon start of the outdoor unit from a standby power saving mode in which the first circuit of the outdoor unit is not supplied with the AC voltage of the AC power supply, and the inverter main circuit and the controller are not supplied with DC voltage converted from the AC voltage of the AC power supply,

the controller compares a first voltage detected by the output voltage detection circuit with a preset first threshold voltage, and when the first voltage is higher than or equal to the first threshold voltage, determines the start as outside wind start, and maintains the outdoor unit in the standby power saving mode without allowing the outdoor unit to shift from the standby power saving mode to a non-operating mode in which the first circuit of the outdoor unit is supplied with the AC voltage of the AC power supply, and the inverter main circuit and the controller are supplied with DC voltage converted from the AC voltage of the AC power supply.

2. The air conditioner according to claim 1, wherein

when the first voltage is lower than the first threshold voltage, the controller determines the start as normal start, and shifts the outdoor unit from the standby power saving mode to the non-operating mode,

when the outdoor unit shifts to the non-operating mode and subsequently the outdoor unit remains non-operated for a first time or more, the controller shifts the outdoor

unit to a reactive power saving mode in which the first circuit of the outdoor unit is not supplied with the AC voltage of the AC power supply, the inverter main circuit is not supplied with the DC voltage converted from the AC voltage of the AC power supply, and the controller is supplied with the DC voltage converted from the AC voltage of the AC power supply.

3. The air conditioner according to claim 1, further comprising

switching means to switch between a supply state to supply the AC voltage of the AC power supply to the first circuit and a cut-off state to cut off a supply of the AC voltage of the AC power to the first circuit, wherein

the switching means is in the supply state when the outdoor unit is in the non-operating mode,

the switching means is in the cut-off state when the outdoor unit is in the standby power saving mode, and

the switching means is in the cut-off state when the outdoor unit is in the reactive power saving mode.

4. An air conditioner including an outdoor unit and an indoor unit, the outdoor unit comprising;

a converter main circuit to rectify and smooth an AC voltage of an AC power supply, and allow a DC voltage to be generated across a main circuit capacitor;

an inverter main circuit to convert the DC voltage generated by the main circuit capacitor into an AC voltage;

a compressor motor to be driven by the inverter main circuit;

an outdoor fan;

a fan motor to receive a supply of the DC voltage generated across the main circuit capacitor and

rotationally drive the outdoor fan;

a controller to receive a supply of the DC voltage generated across the main circuit capacitor and control the converter main circuit, the inverter main circuit, and the fan motor;

an output voltage detection circuit to detect a voltage between terminals of the main circuit capacitor; and

a rotational speed detection circuit to detect a rotational speed of the fan motor, wherein

when a voltage detected by the output voltage detection circuit is higher than or equal to a preset first threshold voltage during a standby power saving mode of the outdoor unit, the controller determines that the fan motor rotates due to outside wind hitting the outdoor fan and enters a power generating state, and maintains the outdoor unit in the standby power saving mode without allowing the outdoor unit to shift from the standby power saving mode to a non-operating state,

after the controller prevents the outdoor unit from shifting to the non-operating state from the standby power saving mode, the controller drives an actuator included in the outdoor unit when the voltage detected by the output voltage detection circuit is higher than or equal to a preset second threshold voltage that is higher than the first threshold voltage, and

after the controller drives the actuator included in the outdoor unit, the controller stops the drive of the actuator when the voltage detected by the output voltage detection circuit is lower than or equal to a preset third threshold voltage and the rotational speed detected by the rotational speed detection circuit is higher than a preset second threshold rotational speed, the preset third

threshold voltage being higher than the first threshold voltage and lower than the second threshold voltage, the preset second threshold rotational speed being lower than a first threshold rotational speed for detecting the power generating state caused by the rotation of the fan motor.