2015-65630

Summary of Invention

Technical Problem

[0005]

However, because the refrigerator of Patent Literature 2 does not have a limit on the number of electrical components allowed to operate simultaneously, in order to provide for overlaps among operation timings of plural electrical components, it is necessary to increase a current capacity of a power supply circuit of the controller, creating a problem of increased cost. Also, because the refrigerator of Patent Literature 1 gives priority to operation of the electric damper whose operating time is relatively short, when operation timings of plural electrical components overlap, it is necessary to make the other electrical components wait until the operation of the electric damper is completed.

[0006]

The present invention has been made to solve the above problems and has an object to provide a refrigerator that allows an imaging unit to operate on a priority basis and reduces cost.

Solution to Problem

[0007]

A refrigerator according to an embodiment of the present invention comprises a main body having at least one compartment to be cooled; a plurality of electrical components including a solenoid valve configured to adjust a flow rate of refrigerant used to cool the compartment and an automatic ice maker; an imaging unit configured to image the compartment; and a controller provided with a power supply circuit and configured to control operation of the plurality of electrical components and the imaging unit, wherein the controller has priority level information to interrupt operation of the electrical components, and when causing the imaging unit to image the compartment, if total amperage of the plurality of electrical components and the imaging unit exceeds a current capacity of the power supply circuit, the controller interrupts the operation of at least one of the plurality of electrical components, and

the controller selects at least one of the electrical components based on the priority level information, and interrupts the operation of the selected at least one of the electrical components, and in the priority level information, a lower priority is given to interrupting the operation of the solenoid valve than a priority of interrupting the operation of the automatic ice maker.

CLAIMS

[Claim 1]

A refrigerator comprising:

a main body having at least one compartment to be cooled;

a plurality of electrical components including a solenoid valve configured to adjust a flow rate of refrigerant used to cool the compartment and an automatic ice maker;

an imaging unit configured to image the compartment; and

a controller provided with a power supply circuit and configured to control operation of the plurality of electrical components and the imaging unit, wherein

the controller has priority level information to interrupt operation of the electrical components, and is configured to,

when causing the imaging unit to image the compartment, if total amperage of the plurality of electrical components and the imaging unit exceeds a current capacity of the power supply circuit, interrupt the operation of at least one of the plurality of electrical components, and

select at least one of the electrical components based on the priority level information, and interrupt the operation of the selected at least one of the electrical components, and

in the priority level information, a lower priority is given to interrupting the operation of the solenoid valve than a priority of interrupting the operation of the automatic ice maker.

[Claim 2]

The refrigerator of claim 1, wherein

in the priority level information, first priority is given to interrupting the operation of the automatic ice maker.

[Claim 3]

The refrigerator of claim 1 or claim 2, wherein

the plurality of electrical components further includes an electric damper configured to control cold air supply to the compartment; and

in the priority level information, a lower priority is given to interrupting the operation of the electric damper than a priority of interrupting the operation of the solenoid valve.

[Claim 4]

The refrigerator of claim 3, wherein

the plurality of electrical components further includes a fan configured to send cold air into the compartment; and

in the priority level information, a lower priority is given to interrupting the operation of the fan than a priority of interrupting the operation of the electric damper.

[Claim 5]

The refrigerator of any one of claims 1 to 4, further comprising:

at least one door provided for the compartment; and

a door open/close sensor configured to detect opening and closing of the door, wherein

the controller is configured to, when the compartment changes from an open state to a closed state and an imaging wait time lapses while the compartment remains in the closed state, cause the imaging unit to image the compartment.