prevented.

Citation List

Patent Literature

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SUMMARY

However, in the conventional configuration, it is necessary to have two temperature detectors, that is, a temperature detector mainly including a thermistor for detecting a heating temperature of a heater and a temperature detector mainly including a thermistor for detecting a water temperature within a water tub.

Embodiments of the present disclosure provide a low cost and highly reliable washing machine capable of preventing overheating of a heater by detecting a temperature of the heater and a water temperature within a water tub by one temperature detector.

A washing machine according to a first aspect of the present disclosure includes a washing machine body, a water tub supported in an inside of the washing machine body and having a drain port at a bottom, and a drain cock unit coupled with the drain port of the water tub. Further, the washing machine includes a heater unit coupled with the drain cock unit and communicating with an inner bottom of the water tub, a heater incorporated in the heater unit and heating washing water, and a temperature detector for detecting a water temperature within the heater unit. Furthermore, it is configured that energization to the heater is stopped after a first predetermined period of time elapses from a start of the energization, and that the temperature detector detects a water temperature within the heater unit after a second predetermined period of time elapses from an end of the

energization to the

heater, and a water temperature within the water tub is estimated based on the detected water temperature.

With this configuration, by using the temperature detector for detecting a water temperature within a heater container, the temperature of the heater can be detected, and the water temperature within the water tub can be estimated. Accordingly, there is no need to provide a temperature detector on the water tub side. As a result, the low cost and highly reliable washing machine capable of preventing overheating of the heater can be provided.

Further, a washing machine according to an aspect of the present disclosure includes a washing machine body, a water tub supported in an inside of the washing machine body and having a drain port at a bottom, and a drain cock unit coupled with the drain port of the water tub. Further, the washing machine includes a heater unit coupled with the drain cock unit and communicating with an inner bottom of the water tub, a heater incorporated in the heater unit and heating washing water, a temperature detector for detecting a water temperature within the heater unit, and a controller for controlling energization of the heater so that washing water within the water tub reaches a predetermined set target water temperature. Further, the controller estimates a water temperature within the water tub from the temperature detected by the temperature detector, and determines first energizing time of the heater from at least a water temperature of water supplied into the water tub and an amount of the water supply. Furthermore, it is configured that the controller calculates a temperature rising speed within the water tub in the first energizing time based on the temperature detected by the temperature detector, and calculates, from the temperature rising speed and the water temperature within the water tub after the first energizing time,