CLAIMS

1. An incorporated device that incorporates therein:

an electrolytic cell that manufactures electrolysis water by electrolysis on a raw material solution by means of electric current applied between an anode and a cathode, and

a power control device that supplies electrolysis current to the electrolytic cell based on input direct-current power,

wherein the power control device comprises:

a voltage-current control circuit that supplies, in a constant current control mode, the electrolysis current to the electrolytic cell while the voltage-current control circuit controls the electrolysis current not to exceed a current value of a reference current, the current value of the reference current being preliminary set according to a rated current of a unit cell constituting the electrolytic cell; and

a temperature detecting part that detects an environmental temperature of an outside of the electrolytic cell, the environmental temperature being a temperature of an inside of the incorporated device, the environmental temperature changing according to change in a temperature of the electrolytic cell, and

the voltage-current control circuit stops supply of the electrolysis current when a detected temperature of the temperature detecting part falls outside of a preliminarily set rated temperature range, and resumes supply of the electrolysis current when the detected temperature of the temperature detecting part returns within the rated temperature range.

2. The incorporated device according to claim 1,

wherein the power control device further comprises:

a current detecting part that is connected to an output terminal of the voltage-current control circuit and detects a voltage arising between both ends thereof; and

a current limiting part that generates the reference current, and

the voltage-current control circuit comprises:

a voltage-current detection circuit that calculates the electrolysis current flowing through the electrolytic cell, based on a voltage between both ends of the current detecting

part and a resistance value of the current detecting part;

a comparator circuit that compares the electrolysis current with the reference current generated by the current limiting part to output a current comparison result signal indicating a comparison result; and

a voltage control circuit that supplies the electrolysis current from the output terminal to the electrolytic cell while the voltage control circuit controls the electrolysis current not to exceed the reference current based on the current comparison result signal.

3. The incorporated device according to claim 2, wherein the power control device further comprises:

a voltage-current monitor circuit that outputs analog data that indicates an electric current value of the electrolysis current, to an outside.

4. A method for controlling an incorporated device, the incorporated device incorporating therein:

an electrolytic cell that manufactures electrolysis water by electrolysis on a raw material solution by means of electric current applied between an anode and a cathode; and

a power control device that supplies electrolysis current to the electrolytic cell based on input direct-current power,

wherein the power control device comprises:

a voltage-current control circuit that supplies, in a constant current control mode, the electrolysis current to the electrolytic cell while the voltage-current control circuit controls the electrolysis current not to exceed a current value of a reference current, the current value of the reference current being preliminary set according to a rated current of a unit cell constituting the electrolytic cell; and

a temperature detecting part that detects an environmental temperature of an outside of the electrolytic cell, the environmental temperature being a temperature of an inside of the incorporated device, the environmental temperature changing according to change in a temperature of the electrolytic cell, and

the voltage-current control circuit stops supply of the electrolysis current when a detected temperature of the temperature detecting part falls outside of a preliminarily set rated temperature range, and resumes supply of the electrolysis current when the detected temperature of the temperature detecting part returns within the rated temperature range.