WHAT IS CLAIMED IS:

1. A braking control device suitable for an industrial vehicle including a travel motor configured to generate regenerative braking force and a mechanical brake configured to generate mechanical braking force as a braking unit and including a battery configured to be charged by the regenerative braking force, the braking control device comprising:

a vehicle speed information acquisition unit configured to acquire vehicle speed information of the industrial vehicle;

a regenerative current acquisition unit configured to acquire a regenerative current of the travel motor;

an autonomous driving control unit configured to execute autonomous driving with a required braking force including the regenerative braking force for causing a vehicle speed of the industrial vehicle descending a slope to be a target vehicle speed, based on the vehicle speed information; and

a braking force control unit configured to adjust distribution of the mechanical braking force in the required braking force so that the acquired regenerative current is equal to or less than an upper regenerative threshold value smaller than a maximum regenerative current, the maximum regenerative current being a regenerative current that causes the battery to be charged at a fastest speed,

wherein the upper regenerative threshold value is set such that a situation of regenerative loss in which the battery reaches a fully charged state, regenerative braking is unusable and braking force is insufficient compared to the required braking force, does not occur, whereby interruption of regenerative braking is prevented.

2. The braking control device suitable for an industrial vehicle according to claim 1, wherein

the braking force control unit is configured to

increase the mechanical braking force by a predetermined increase amount when the acquired regenerative current is equal to or higher than the upper regenerative threshold value, and

decrease the mechanical braking force by a predetermined decrease amount when the acquired regenerative current is equal to or less than a lower regenerative threshold value smaller than the upper regenerative threshold value.

3. The braking control device suitable for an industrial vehicle according to claim 2, wherein

a deceleration change of the mechanical braking force with the predetermined increase amount and the predetermined decrease amount is smaller than a deceleration change of the regenerative braking force corresponding to a difference between the upper regenerative threshold value and the lower regenerative threshold value.

4. The braking control device suitable for an industrial vehicle according to claim 2 or 3, wherein

absolute values of the predetermined increase amount and the predetermined decrease amount are equal to each other.