CLAIMS

1. A discharge detection device configured to be capable of detecting a discharge phenomenon via wiring, comprising:

a noise detection section electrically connected to the wiring and configured to allow a noise component generated by the discharge phenomenon to be input via the wiring and configured to output the noise component if the noise component has a predetermined frequency or more;

an arithmetic section configured to determine whether a level of the noise component is high by comparing the level of the noise component with a threshold; and

a storage section configured to store the number of occurrence of the discharge phenomenon and a count-up suspension time as a period of time not to count the number of occurrence of a subsequent discharge phenomenon occurred within a predetermined period of time after occurrence of a previous discharge phenomenon, wherein

the arithmetic section

determines whether a count-up flag causing the count-up suspension time to be measured is turned OFF if the level of the noise component is determined to be high,

sets the count-up flag to be turned ON, adds “1” to the number of occurrence of the discharge phenomenon and performs a control process selected based on the number of occurrence of the discharge phenomenon if the count-up flag is determined to be turned OFF, and

does not add “1” to the number of occurrence of the discharge phenomenon if the count-up flag is determined not to be turned OFF.

2. The discharge detection device according to Claim 1, further comprising: a reset section configured to reset the number of occurrence of the discharge phenomenon stored in the storage section.

3. The discharge detection device according to Claim 1 or 2, further comprising: an output setting section configured to vary timing to output a signal from the arithmetic section based on an externally input signal.

4. The discharge detection device according to any one of Claims 1 through 3, further comprising: an alarm for notification of occurrence of the discharge phenomenon using at least either light or sound, wherein the arithmetic section varies a mode of the notification by the alarm based on the number of occurrence of the discharge phenomenon.

5. The discharge detection device according to Claim 1, further comprising: a

current detection section configured to measure a current value on the occurrence of the discharge phenomenon, wherein the arithmetic section performs a control process selected based on the current value.