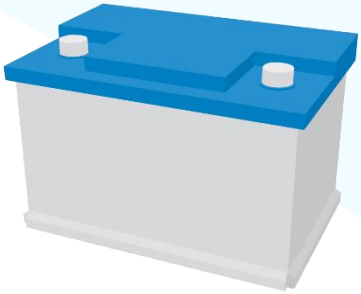
Information Bulletin #2022-1

Problem: Information in the User Manual regarding the charging cycles is not clear/not present, which is the charge controller behaviour during this process.
Solution: An Information Bulletin should be issued to include the missing information.
Equipment: Hybrid Boost PWM charge controllers and Hybrid Boost MPPT charge controllers.

1. Hybrid Boost PWM charge controller.



Battery Type: Not relevant
Manufacturer: Not relevant
Nominal Voltage: 12V (as an example)
Maximum charging Voltage: 14.4V (as an example – usually supplied by the battery manufacturer – this value is extremely important!)

INFO: If you do not know which model is, it is easily identified by its front face. It has 4 navigation buttons, and the Brake LED is near the Silentwind Logo on top.

SETTING PARAMETERS:

Absorption: 13,4V
Overvoltage: 16V (not relevant for the charging cycle – it must be always higher than the maximum charging voltage)
Storm Brake: 32A (not relevant for the charging cycle)
Low Wind Boost: 2V (not relevant for the charging cycle)
P.S: The remaining parameters are for the Outputs 1&2. They do not interfere on the charging process neither on the charging cycle behaviour.

It is assumed that the wind generator produces energy, and all the parameters are correct.

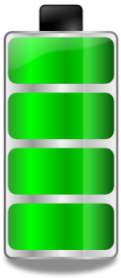
Charging cycle:

Battery Status: Low

Charge Controller Status: Normal

Battery Status: 13,4V

Charge Controller Status: Brake LED starts to blink.



Battery Status: Full = 14,4V

Charge Controller Status: Brake always ON. Not charging

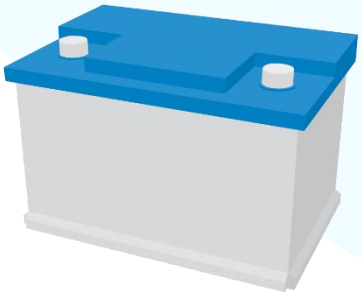
Battery Status: Discharging - Voltage equal or higher than 13,1V

Charge Controller Status: Brake always ON. Not charging

Battery Status: 13,1V reached

Charge Controller Status: Brake waiting cycle of 10 minutes. The brake will be released afterwards.
Brake LED = OFF - Battery < 13,1V

2. Hybrid Boost MPPT charge controller.



Battery Type: Not relevant
Manufacturer: Not relevant
Nominal Voltage: 12V (as an example)
Maximum charging Voltage: 14.4V (as an example – usually supplied by the battery manufacturer – this value is extremely important!)

INFO: If you do not know which model is, it is easily identified by its front face. It has 1 single “Scan” button and the Brake LED is near the button.

SETTING PARAMETERS:

End Of Charge Voltage: 14,4V
Overvoltage: 16V (not relevant for the charging cycle – it must be always higher than the maximum charging voltage)
Storm Brake: 32A (not relevant for the charging cycle)
Low Wind Boost: 3V (not relevant for the charging cycle)
P.S: The other additional parameters are for the Outputs 1&2. They do not interfere on the charging process neither on the charging cycle behaviour.

It is assumed that the wind generator produces energy, and all the parameters are correct.

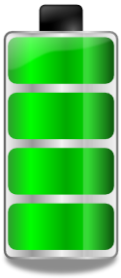
Charging cycle:

Battery Status: Low

Charge Controller Status: Normal

Battery Status: 13,4V

Charge Controller Status: Normal



Battery Status: Full = 14,4V

Charge Controller Status: Brake always ON. Not charging

Battery Status: Discharging - Voltage equal or higher than 13,1V

Charge Controller Status: Brake always ON. Not charging

Battery Status: 13,1V reached

Charge Controller Status: Brake waiting cycle of 10 minutes. The brake will be released afterwards.
Brake LED = OFF

3. Recovery voltage

Nominal Voltage	Recovery voltage (RV)	Max. Voltage parameter (MV) - Example	Recovery Point = MV - RV
12V Charge Controllers	1.3V	14.4V	13.1V
24V Charge Controllers	2.6V	28.8V	26.2V
48V Charge Controllers	5.2V	57.6V	52.4V

Additional Information: When the batteries are connected to an external alternator, the charge controller might enter in Brake mode. Example: When a fuel energy generator is charging the batteries.