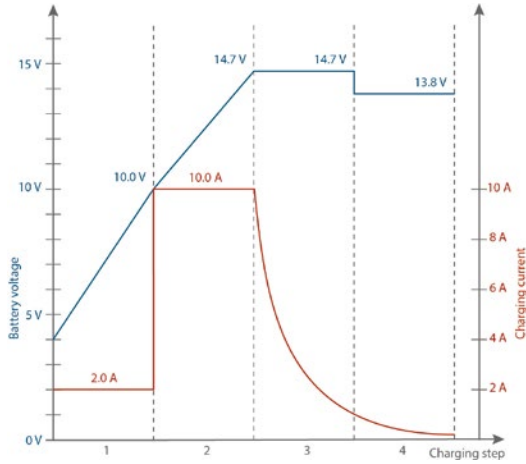
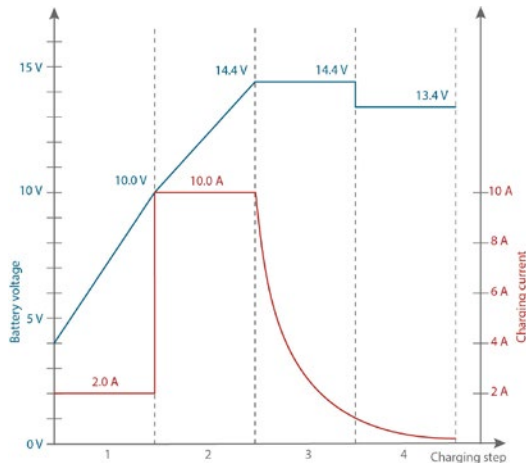


**12 V AGM mode - Charging curve and charging method**



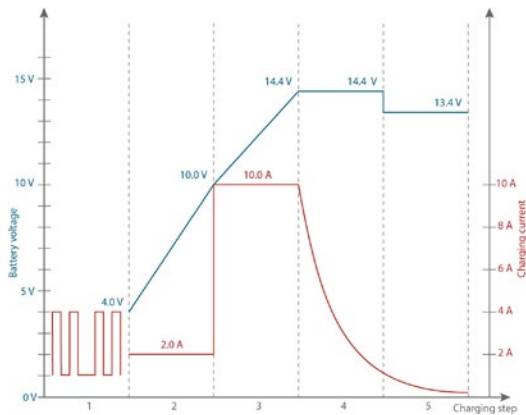
- Step 1** Softstart phase:  
Serves to put a deep discharged battery back into a chargeable state. The softstart phase is not necessary if the battery voltage is at least 10.0 V.
- Step 2** Bulk phase:  
The battery is constantly charged with max. 10.0 A charging current.
- Step 3** Absorption phase:  
Constant voltage charging.
- Step 4** Floating phase:  
After reaching the cut-off-voltage (14.7 V), the battery is constantly supplied with current. Capacity losses through self-discharge are compensated immediately.

**12 V SLA/Gel mode - Charging curve and charging method**



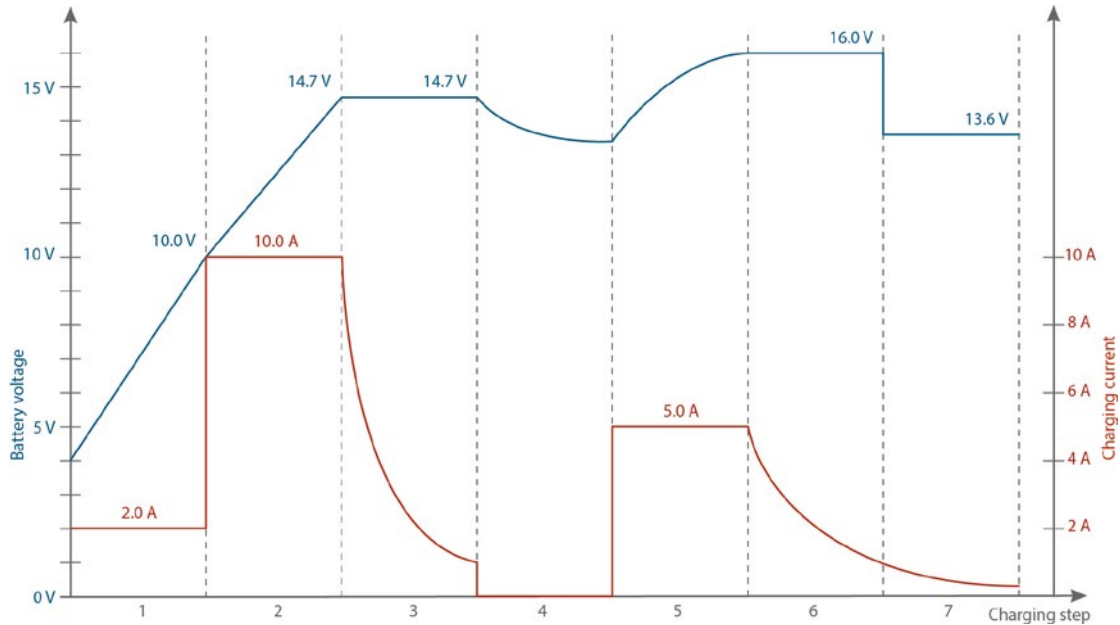
- Step 1** Softstart phase:  
Serves to put a deep discharged battery back into a chargeable state. The softstart phase is not necessary if the battery voltage is at least 10.0 V.
- Step 2** Bulk phase:  
The battery is constantly charged with max. 10.0 A charging current.
- Step 3** Absorption phase:  
Constant voltage charging.
- Step 4** Floating phase:  
After reaching the cut-off-voltage (14.4 V), the battery is constantly supplied with current. Capacity losses through self-discharge are compensated immediately.

**12 V Lithium mode - Charging curve and charging method**



- Step 1** Check phase:  
If the battery management system (BMS) is switched off due to low battery voltage, it is reactivated by a control signal from the battery charger. Not until then does the charging process start.
- Step 2** Softstart phase:  
Serves to put a deep discharged battery back into a chargeable state. The softstart phase is not necessary if the battery voltage is at least 10.0 V.
- Step 3** Bulk phase:  
The battery is constantly charged with max. 10.0 A charging current.
- Step 4** Absorption phase:  
Constant voltage charging.
- Step 5** Floating phase:  
After reaching the cut-off-voltage (14.4 V), the battery is constantly supplied with current. Capacity losses through self-discharge are compensated immediately.

**12 V Calcium/Boost mode - Charging curve and charging method**



- Step 1** Softstart phase:  
Serves to put a deep discharged battery back into a chargeable state. The softstart phase is not necessary if the battery voltage is at least 10.0 V.
- Step 2** Bulk phase I:  
The battery is constantly charged with max. 10.0 A charging current.
- Step 3** Absorption phase I:  
Constant voltage charging.
- Step 4** Check phase:  
The charger checks if the battery can hold the charge.

- Step 5** Bulk phase II:  
The battery is constantly charged with max. 5.0 A charging current.
- Step 6** Absorption phase II:  
Constant voltage charging.
- Step 7** Floating phase:  
After reaching the cut-off-voltage (16.0 V), the battery is constantly supplied with current. Capacity losses through self-discharge are compensated immediately.

**Staudte Hirsch**

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