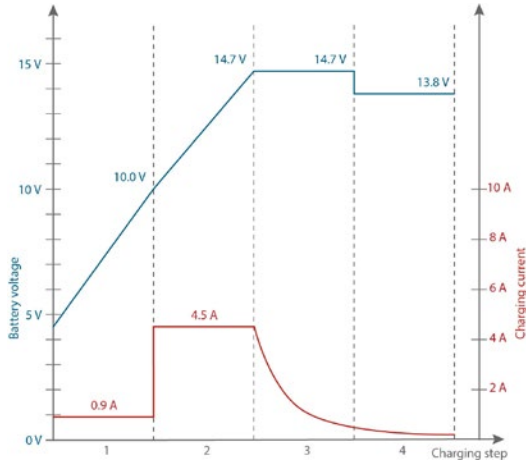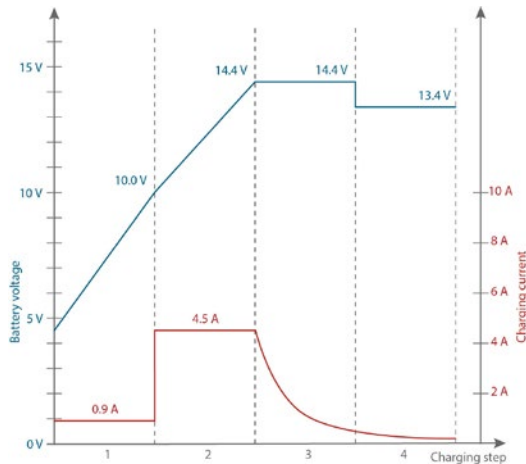## 12 V AGM mode – Charging curve and charging method



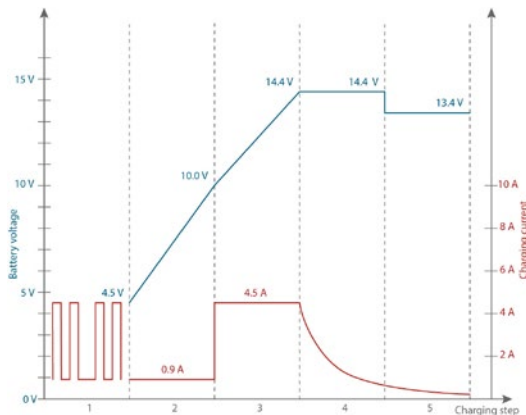**Step 1**  Softstart phase:
Serves to put a deep discharged battery back into a chargeable state. The softstart phase is not necessary if the battery voltage is at least 10.0 V.

**Step 2**  Bulk phase:
The battery is constantly charged with max. 4.5 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.

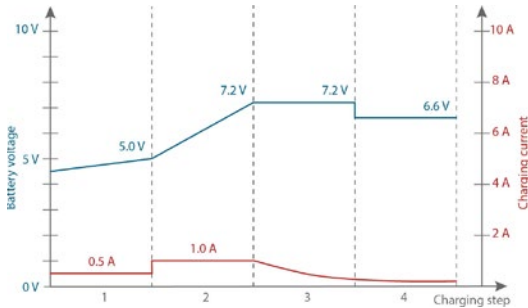## 12 V SLA/Gel mode – Charging curve and charging method



**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. 4.5 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.

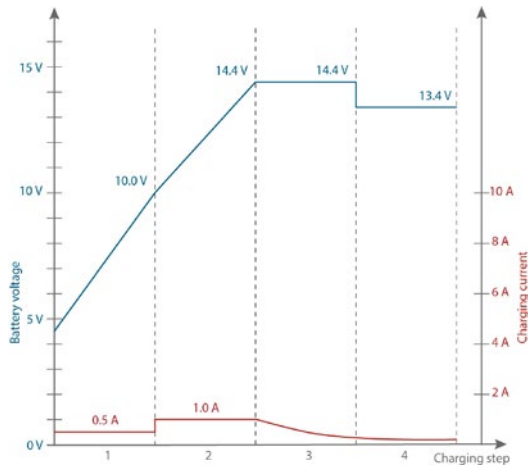## 12 V Lithium mode – Charging curve and charging method



**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. 4.5 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.

## 6 V Motorbike 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 5.0 V.

**Step 2** Bulk phase:
The battery is constantly charged with max. 1.0 A charging current.

**Step 3** Absorption phase:
Constant voltage charging.

**Step 4** Floating phase:
After reaching the cut-off-voltage (7.2 V), the battery is constantly supplied with current. Capacity losses through self-discharge are compensated immediately.

## 12 V Motorbike 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. 1.0 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.