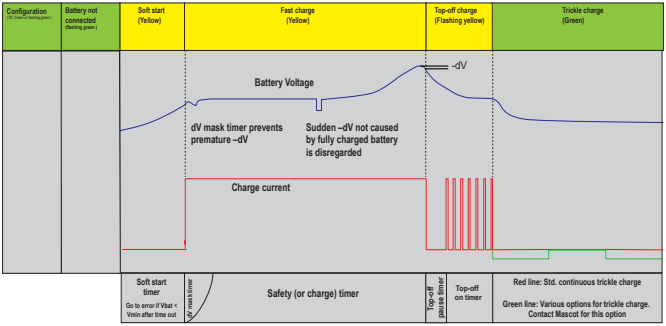
How to use the type B charger (CBC)



Start the charger by connecting the battery pack to the charger and the charger to the mains.
The LED indicator will be flashing green if no battery is connected. When the battery is connected to the output of the charger the LED will be yellow and remain in this state until battery is fully charged, and fast charge is terminated. Charger apply low current soft start on deeply discharged batteries. If voltage does not reach normal level within a certain time, charger will enter error mode, shown by 4 red flashes in the LED.

When –dV, +dT/dt or other EoC method is detected, the charger enters top-off mode. This is controlled overcharge to make sure all cells are fully charged. LED indication is flashing yellow.

After top-off period is ended the LED indicator will change to green showing that battery is fully charged. The charge current is now reduced to a safe level, which allows the charger to stay connected to the battery without damaging the cells. Several options for trickle charge are available.

If the safety timer run out before -dV (or +dT/dt) is detected, the charger will go directly to trickle charge mode (no top-off charge) and LED will be green.

You may manually start a new charge cycle by disconnecting mains input and connecting it again.

LED indications

CHARGE INDICATIONS

Flashing green: Battery not connected
Yellow: Fast charge (or soft start)
Flashing yellow: Top-off
Green: Trickle

WAIT MODE INDICATIONS

Yellow with 1 red blink: Battery temperature is too low (<0°C)
Yellow with 2 red blinks: Battery temperature is too high (>40°C)

ERROR INDICATIONS

2 red blinks: Battery is connected to charger with wrong polarity!
3 red blinks: Charger output is shorted. Check output cable connection!
4 red blinks: Battery voltage is low. Check battery status or voltage. (ss timer)
5 red blinks: Warm error. Temperature >60°C
6 red blinks: NTC missing or short (if mandatory)

LED off: Battery voltage is too high. Check battery voltage.

Temperature control (optional feature)

If the charger is used with a temperature sensor (NTC-resistor in the battery) it is possible to add temperature control to the battery charging process. If the battery temperature is too low (< 0°C) at the start of the charge cycle, the charger will enter no current wait mode until the temperature level is safe. This is indicated by yellow LED with 1 red blink. Charger will also enter wait mode if battery temperature is above 40 °C, and this is indicated by yellow LED with 2 red blinks. The charger will be in no current wait mode until the temperature is at a level where the charging can start. If the temperature is too high for safe charging (> 60°C), the LED will show "error" by 5 red blinks. When using the temperature increase control (+dT/dt), the charger will switch to top-off charge and later to trickle charge the same way as charging with -dV control.

NOTE. The charger may be configured for other temperature parameters or contact supplier for additional information.

Zero dV feature (optional feature)

If zero dV has been activated, the charger will stop the fast charge when the voltage has not increased during specified time. You may use 0dV alone or in combination with -dV and/ or +dT/dt. This function is normally only used in special cases.