HLP Data BMS4S Revision information

Version x.x.101, a recommended update

1. Command wm removed, fully replaced by command we
2. Timer for milliseconds sometimes overrun, corrected
3. System commands sometimes produce unreadable confirmation, fixed
4. Minor improvements
5. Update from version 100 to version 101 not necessary, no functional differences

Version x.x.100

1. Improvements of the communication with Victron Cerbo/VenusOS
2. Function that makes it easier to tweak tables for SoC estimates (we=+25)
3. Only log the most important events on pe-log to make it last longer. Increased verbose level will log everything (sv=1).

Version x.x.99

1. Correction of a fault that x.x.98 introduced that could change load- and charge-state when the button was pressed to one blink.
2. Minor improvements

Version x.x.98 (avoid this version if button sometimes used for one blink)

1. Improved logic for Lead-LFP battery installations (i.e. when we=23 is set)
2. Alternative PD-regulator now default for new systems, existing systems are recommended to change this manually, command we=+16
3. BT-adapter interface adjustable to fit different adapters. If a Bluetooth adapter produces garbage between commands, activate: we=+19, if it sometimes becomes inaccessible, deactivate: we=-19
4. Minor improvements

Version x.x.97

1. TimeRelay added in ps-printout
2. BT-adapter interface improved
3. Minor improvements

Version x.x.96

1. Logic to prevent charging below t1= improved
2. NTC used to supervise batteries improved
3. Coulomb based balancing capacity increased to 3 Ah for each charge cycle
4. Help text improved
5. Missing printout of charge limit added
6. ps printout format corrected (disturbed the Android BMS4S_manager app)

7. Only WorkmodExt is shown in ps printout (but command wm= still works as before)

Version x.x.95

1. Improved filters for temporary disturbances
2. NTC used to supervise batteries corrected
3. Some minor improvements

Version x.x.94

1. Pre-charge port can be used as extra charge-off port
2. Improved support for installations with both lithium- and lead batteries
3. Improved interface to temperature sensors (DS18B20)
4. Improved alternator control
5. Minor flaws corrected

Version x.x.92

1. Alternator no charge settings is overridden when battery temperature is below t1=.
2. Work mode wm=+4096 introduced which, instead of using va= only to supervise charging, makes the alternator use va= as a limit that controls the alternator.
3. Small changes to SoC table sb=2.
4. Interface to temp-sensors improved. Old interface version can be activated by wm=+16384.
5. A fault that can make balancing work bad when charging is started and stopped many times during a day, that unfortunately was introduced in x.x.90, is corrected
6. When a high voltage event is not taken care of the BMS4S will activate “all off” after 10 min if we=+17 is activated. (function needed to comply with the coming ISO standard).
7. Possibility to use one 10 k NTC resistor instead of DS18B20 sensors (we=+22)

Version x.x.91 (avoid this version if coulomb based balancing is used)

1. Possibility to control charging based on SoC. To be used as a complement to voltage-based control when you are satisfied with its precision (when you have tuned the SoC table to your battery installation). Both voltage- and SoC-based can/shall be used in parallel.
2. When manually stopping charging with the button, the stoppage will override the settings to maintain a set voltage from the alternator.
3. SoC table 2 replaced by a table influenced by experiences from a Winston installation. Command sb=2 to load it.
4. wm= +32768 now activates an alternative simplified PD-regulator used to prevent the alternator from being overheated.
5. Improved SoC estimates at low voltages (<12 V), at high voltages (>13.4) and at high currents (>0.4 C)

Version x.x.90 (avoid this version if coulomb based balancing is used)

6. Possibility to limit current from alternator while charging, command lc=nn. Useful if the alternator runs too hot and has no temp-sensor, or if it wears out the V-belt too quickly.

7. SOC calculation during charging based on coulomb-counting. During discharging it is estimated based on voltage and current via a modifiable table and battery parameters, see command pb.
8. UBE entry removed from log since it added almost no valuable information.
9. Possibility to use P-only regulation for high alternator temperature, command wm= +32768. Works ok if the temp-sensor feedback-delay is reasonable short. Otherwise, the PD-regulation is required (same as before), and tuning might be needed for optimal performance, see manual.
10. Support for Lead and LFP batteries separated only by a relay. See appendix in manual.
11. Changed format of the pe-log if you have an older version than x.x.89, so it is recommended to print the existing log before the upgrade, and then clear it, command pe and ce.
12. Some minor improvements and fault corrections.

Version x.x.89

1. Possibility to set a voltage for the alternator to keep after full charge has been reached (e.g. command vn=13.4). Will make it possible to maintain (close to) fully charged battery until engine is switched off.
2. SoC estimates have four battery profiles to select from, and commands to tune how these are applied.
3. A new factory reset command that sets all values to how the latest BMS4S is set at delivery.
4. Changed format of the pe-log, so it is recommended to print the existing log before the upgrade, and then clear it, command pe and ce.
5. And some more minor improvements.

Version x.x.88

1. A problem in x.x.87 that sometimes stops charging on boards 2.x, 3.x and 4.x, is fixed. The problem can be mitigated on x.x.87 by setting low temp to 0, command t1=0.

Version x.x.87

1. Improved interface to temp-sensors on boards 2.x, 3.x and 4.x

Version x.x.86

1. Improved interface to temp-sensors on board 4.1 and 4.2

Version x.x.85

1. New command, mb=n, used to mute alarm-beeps for n seconds
2. Possibility to switch off CRC check for temperature sensors and use a simplified check instead (wm=+128)
3. Minor adjustment of SoC estimate
4. Some minor improvements

Version x.x.83

1. SoC estimate algorithms modified

Version x.x.82

1. Command to calibrate current corrected
2. Start of very small coulomb based balancing prevented
3. Possibility to use pre charge port as bistable charge on port added

Version x.x.81

1. Support for 1602 LCD display with i2c interface
2. Corrected SoC calculation when charging

Version x.x.80

1. Improved balancing calculation
2. Improved SoC calculation
3. Minor bugs fixed

Version x.x.76

1. Corrected calculation of unbalance once again. Revision x.x.75 underestimated it too much.

Version x.x.75

1. Corrected calculation of unbalance. Earlier version often overestimated balancing demand.
2. If a second battery is used as backup it is now possible to limit the voltage from the alternator when it is being charged (only board 3.x).
3. An experimental profile used for SoC estimates are available that seems to work well with Winston cells.
4. Minor improvements and bug-fixes

Version x.x.70

1. The bluetooth adapter is no longer automatically switched on when a command is received from the USB-adapter. This increases the possibility to have both the bluetooth adapter and the USB adapter connected simultaneously without disturbances (depending on bluetooth version).
2. If a large load is connected it was earlier possible that the warning for disconnection was bypassed and the disconnection happen without warning (depending on the settings). Now the low voltage warning will always be activated at least one minute before the disconnection happens.
3. The stability of the voltage readings has been improved. The change has only minor effect on the functionality.
4. It is now also possible to update the settings that are used at a factory reset. Command sf=314 will save your current settings to be used if later command fr (factory reset) is given.
5. No parasite power to the temperature sensors is now the default on version 2.x and 3.x, but it will be automatically switched on when updating from earlier versions.
6. SoC estimates have been improved.

Version x.x.60

1. First commercial version