

BMS Firmware Release Notes

Version	Changes
v2.3.243	<ul style="list-style-type: none"> * Improved: current measurement * Improved: over-current fault detection (rejected short current peaks) * Improved: charging finish logic * Improved: SOC calculation in sleep mode (high battery capacity) * Improved: load/charger switch diagnostics feature * Improved: <i>Ignition</i> feature (disabled unexpected load output toggling due to load measurement. Load measurement are only made in certain cases) * Fixed: internal 5V power supply remains disabled after wakeup from sleep mode due to <i>UART</i> communication, when <i>Ignition</i> feature is activated (unexpected large negative current measurement value) * New feature: possibility to invert external current sensor direction (available with new <i>Battery Insider</i> v2.5.0.6 version) * New feature: possibility to disable load/charger switches diagnostics (available with new <i>Battery Insider</i> v2.5.0.6 version)
v2.3.242	<ul style="list-style-type: none"> * Improved: current and cell voltage measurement accuracy
v2.3.241	<ul style="list-style-type: none"> * Fixed: charging not starting on <i>PCB</i> v2.1 hardware version when <i>Fully Discharged Warning</i> occurred, charger is connected, <i>Charger Switch Type</i> configured as <i>Charge FET</i> and <i>Load Switch Type</i> configured as <i>Discharge FET</i>
v2.3.240	<ul style="list-style-type: none"> * Improved: external charger detection feature
v2.3.239	<ul style="list-style-type: none"> * New feature: possibility to turn off automatic <i>BMS</i> fault state recovery * Improved: charging finish logic (disabled charger switch toggling when charger voltage is too high) * Improved: <i>Charge Finished Current</i> setting maximum value (<i>Charger Switch Type</i> dependent) Fixed: external current sensor inverted current flow direction
v2.3.238	<ul style="list-style-type: none"> * Fixed: unexpected random <i>AFE</i> driver crash bug * Fixed: cells balancing bug, where balancing the last balanced cells is not disabled when cells disbalance becomes lower than the allowed disbalance
v2.3.237	<ul style="list-style-type: none"> * Improved: <i>BMS</i> up time calculation in sleep mode * Improved: <i>Battery Insider</i> events timestamp initialization after <i>BMS</i> restart * Improved: <i>BMS</i> state detection
v2.3.236	<ul style="list-style-type: none"> * Support for <i>Hardware</i> v2.3, v2.0 no longer supported * Support for <i>Battery Insider</i> v2.5.0.5 or later * Updated: <i>BMS Register Map</i> and <i>Event Message List</i> * New feature: cells voltages measurement in sleep mode when <i>Ignition</i> feature is disabled * New feature: temperature faults recovery in <i>BMS</i> sleep mode when <i>Ignition</i> feature is disabled * New feature: <i>BMS</i> load and charger switches self diagnostic (<i>BMS</i> generates warning sound when <i>BMS</i> detects charging/discharging current, but switches should be closed) * New feature: <i>BMS Single Port</i> operation mode * New feature: load relay/contactor precharge * Improved: <i>LED</i> functionality to lower <i>BMS</i> power consumption in active state * Improved: <i>BMS</i> up time calculation in sleep mode * Improved <i>BMS</i> fault detection logic: <i>BMS</i> can detect more than one fault at a time * Improved: charger detection logic: charging current is not monitored for charger detection, if external <i>Charger Detection</i> pin is used

	<ul style="list-style-type: none"> * Improved: external current sensor detection logic * Improved: external current sensor measurement for high current ranges * Improved: external inputs/outputs settings security
v2.3.235	* Internal release
v2.3.234	* Fixed: over-current cutoff settings values changing to default values after reset <i>BMS</i> when external current sensor is used
v2.3.233	* Improved: added 20 sec. timeout to detect charger connected for slower chargers
v2.3.232	<ul style="list-style-type: none"> * New feature: <i>DIDOx</i>, <i>AIHOxAL</i>, <i>AIHOxAH Load Switch Type</i> settings * New feature: activated <i>AIHOxAH Charger Switch Type</i> settings * Improved: removed <i>Charger Disconnected</i> event message after reset <i>BMS</i> * Improved: cell balancing algorithm ** Cells balancing enabled, if voltage is higher than minimum cell voltage minus allowed disbalance ** Reduce percentage of cells balancing, if <i>BMS</i> temperature exceeds safe limit
v2.3.231	<ul style="list-style-type: none"> * New feature: multipint <i>NTC</i> sensor temperature measurement * Improved: dual <i>NTC</i> sensor temperature measurement
v2.3.230	<ul style="list-style-type: none"> * New feature: <i>UART-CAN</i> converter supported * Improved: <i>BMS</i> statistics calculation * Improved: fully discharge exception logic (allowed to charge) * Improved: <i>ASCII</i> broadcast protocol * Fixed: <i>UART MODBUS</i> commands errors
v2.3.229	<ul style="list-style-type: none"> * New feature: <i>SOC</i> calculation in sleep mode * New feature: <i>Battery Insider SOC-BAR</i> menu settings * Improved: optimized energy consumption in sleep mode * Improved: turning off 5V internal power supply in sleep mode * Fixed: <i>SOC-BAR</i> indicator blinking * Improved: <i>Number of Series Cells</i> setting minimum value changed to 4 cells * Improved: compatibility with v2.0, v2.1 and v2.2 <i>PCB</i> versions
v2.3.228	<ul style="list-style-type: none"> * New feature: charger external detection * New feature: activated <i>Charger Switch Type DIDOx</i> and <i>AIHOxAL</i> settings * New feature: supported hardware version <i>PCB</i> v2.2 * Improved: external inputs/outputs settings security
v2.3.227	<ul style="list-style-type: none"> * Improved: low temperature cutoff logic * Improved: external inputs/outputs settings security * Fixed: unexpected <i>BMS</i> restart while writing new settings * Fixed: unexpected <i>BMS</i> jump to bootloader while writing new settings
v2.3.226	<ul style="list-style-type: none"> * New feature: <i>Ignition</i> input to enable/disable <i>BMS</i> * Improved: power management during sleep * Improved: fully discharged cutoff logic (charger turned off only when <i>Charger Switch Type – Charge FET</i>) * Fixed: <i>Battery Insider</i> reset <i>BMS</i> feature when <i>Load Swich Type – AIDOx</i> and <i>Charger Switch Type – AIDOx</i> * Fixed: unexpected charger disconnection when <i>Ignition</i> pin is selected
v2.3.225	<ul style="list-style-type: none"> * Improved: under-voltage cutoff exception logic * Fixed: disabled input pullup resistors * Fixed external current sensor detection
v2.3.224	<ul style="list-style-type: none"> * New feature: cells balancing in regeneration state * Improved: power management in sleep state when <i>BMS</i> is in fault state
v2.3.223	* Fixed: <i>BMS</i> freeze when charging

v2.3.222	<ul style="list-style-type: none">* Improved: <i>SOC-BAR</i> functionality (disable before sleep)* Improved: <i>UART</i> communication wakeup from sleep mode using external interrupt* Improved: added 3 sec. <i>UART</i> communication timeout* Fixed: temperature value in <i>CAV3</i> protocol
v2.3.221	<ul style="list-style-type: none">* Improved: current limit changes when external current sensor is connected* Improved: <i>Charge Finished Current</i> and charger disconnection thresholds* Improved: external temperature sensor measurement* Improved: sleep management* Fixed: pack voltage measurement* Fixed: charger detection (connection and disconnection)* Fixed: charging algorithm (<i>CFET</i> toggle)
v2.3.220	<ul style="list-style-type: none">* Improved: cells balancing algorithm* Improved: backup data saved to <i>EEPROM</i>* Improved: power management in sleep state* Changed: speed value to <i>km/h</i>