**ADELSYSTEM CB12245AJ parameter map**

| | | PGN | SPN | Byte position | Data Length (BYTE) | Transmission Rate | Resolution | Value | Parameter Details | Parameter Details description | Factory Setting | Range | Scale factor | Unit | Notes | Read/ Write |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Monitoring | Battery | 65293 | 520306 | 0 | 1 | at powerup and on change | 2 states/1bit | Power supply function enabled at the battery terminals | 0 = Disabled / 1 = Power supply function enabled at the battery terminals | Its value is 1 when the power supply function at the battery terminals is enabled by means of the ENABLE POWER SUPPLY dipswitch or jumper on the front panel of the device; otherwise it is 0 | | 0-1 | | | | Read only |
| | | 65292 | 520305 | 0 | 1 | at powerup and on change | 8 states/3bit | Charging status | Current charging status: 0=None / 1=Recovery / 2=Bulk / 3=Absorption / 4=Trickle | Notifies the current phase of the charging algorithm. | | 0-4 | | | | Read only |
| | | 65290 | 520300 | 0-1 | 2 | 1s | 1mV/bit | Battery voltage | Voltage measured at the battery terminals | Value measured by the device | | 0-65535 | | mV | | Read only |
| | | 65290 | 520301 | 2-3 | 2 | 1s | 1mA/bit | Battery charge current | Measured value of the battery charge current | Value measured by the device | | 0-65535 | | mA | | Read only |
| | | 65293 | 520307 | 1 | 1 | at powerup and on change | 8 states/3bit | Battery type currently selected | The battery type currently selected (0 = Open lead, 1 = AGM lead, 2 = GEL lead, 3 = NiCd , 4 = Unexpected configuration) | Mirrors the value selected by the Lead/AGM/NiCd parameter or by the Battery Type dipswitches or jumpers on the device front panel. Its value is 4 in the case an unexpected dipswitch or jumper configuration has been set by the user on the device front panel. | | 0-4 | | | | Read only |
| | Device | 65294 | 520308 | 0 | 1 | at powerup and on change | 2 states/1bit | Nominal output voltage | 12 = 12 Vdc output setting ; 24 = 24 Vdc output setting | Nominal output voltage of the device according to its configuration which is set by means of the SELECTION OUT VOLTAGE jumper on the device front panel.<br>No Jumper= 12 Vdc configuration<br>Jumper present = 24 Vdc configuration | | 12/24 | | V | | Read only |
| | | 65294 | 520309 | 1-2 | 2 | at powerup and on change | 16 states/4bit | Hardware configuration at powerup | Displays the jumper configuration detected at powerup: bit0=AGM Lead, bit1=GEL Lead, bit2=NiCd; bit3 = unused, bit4 = unused, bit5 = Power supply function enable at the battery terminals, bit6 = Fast charge enable, bit7 = unused, bit8 = Selection out voltage | Bit mask: a number ranging from 0 to 65535 evaluated according to its base-2 representation. In a base-2 representation, a number ranging from 0 to 65535 is a sequence of 16 digits that can assume only two values: 0 and 1. Each of such digits is called a bit. In such a representation, the 16 bits are arranged in this sequence: bit 15 bit 14 .... bit 1 bit 0. In a bit mask each bit describes a condition that can be either true (bit value = 1) or false (bit value = 0). For example if the value of bit 5 in this bit mask is 1, the ENABLE POWER SUPPLY dipswitch or jumper was found engaged at powerup. | | | | | bitx=1-->jumper inserted / dipswitch on | Read only |
| | | 65295 | 520310 | 0-1 | 2 | 1s | 1K/bit | On-board temperature inside the device | Temperature inside the device (in Kelvin units, conversion formula T(°C) = T(K)-273) | | | 233 - 398 (-40°C ...+125°C) | | K | | Read only |
| | | 65296 | 520311 | 0-1 | 2 | at powerup and on change | 1/bit | Device variant | Variant of the product | This value is product-dependent | | 0-65535 | | | | |
| | | 65296 | 520313 | 4 | 1 | at powerup and on change | 1/bit | DCUPS/CB function | Displays the function of the device: 2 = CB | | 2 | | | | | Read only |
| | | 65296 | 520312 | 2-3 | 2 | at powerup and on change | 1/bit | Firmware ID | Identifier of the device firmware release | | | 0-65535 | | | | Read only |
| History | Battery | 65300 | 520318 | 0-1 | 2 | at powerup and on change | 1/bit | Number of charge cycles completed | Number of completed charge cycles | A charge cycle is considered to be completed when the device transitions to trickle charge. | | 0-65535 | | | Cleared using PGN 65490 | Read only |
| | | 65300 | 520319 | 2-3 | 2 | at powerup and on change | 1/bit | Charge cycles not completed | Number of aborted charge cycles, not completed | A charge cycle is considered to be aborted if -during any charging phase except trickle- the battery is detached | | 0-65535 | | | Cleared using PGN 65490 | Read only |
| | | 65300 | 520321 | 6-7 | 2 | at powerup and on change | 1min/bit | Total run time | Total run time in charging mode | Time, elapsed from power-up, during which the battery has been charging. The timer is halted when the battery is not wired | | 0-65535 | | min | Cleared using PGN 65490 | Read only |
| | | 65301 | 520322 | 0-1 | 2 | at powerup and on change | 1/bit | Number of low battery voltage events | Number of low-battery-voltage events | Battery low voltage threshold is 11V when the device is configured with a nominal voltage of 12V or 22V when the device is configured with a nominal voltage of 24V. Not active when power supply function is enabled at the battery terminals | | 0-65535 | | | Cleared using PGN 65490 | Read only |
| | | 65301 | 520323 | 2-3 | 2 | at powerup and on change | 1/bit | Number of high DC voltage events at battery output | Number of high voltage events at the battery output terminals | High voltage threshold is defined as 17,5V/ 31,4V when the device is configured for a nominal voltage of 12V/24V respectively. Not active when the power supply function is enabled at the battery terminals | | 0-65535 | | | Cleared using PGN 65490 | Read only |
| | | 65301 | 520324 | 4-5 | 2 | at powerup and on change | 1mV/bit | Highest battery voltage | Highest voltage acquired at the battery terminals | | | 0-65535 | | mV | Cleared using PGN 65490 | Read only |
| | | 65301 | 520325 | 6-7 | 2 | at powerup and on change | 1mV/bit | Lowest battery voltage | Lowest voltage acquired at the battery terminals | | | 0-65535 | | mV | Cleared using PGN 65490 | Read only |
| | Device | 65303 | 520327 | 0-1 | 2 | at powerup and on change | 1/bit | Number of overtemperature inside events | Number of internal overtemperature events | | | 0-65535 | | | Cleared using PGN 65490 | Read only |
| Configuration | Battery | 65312 | 520357 | 0-1 | 2 | at powerup and on change | 1mA/bit | Maximum charge current | Sets the maximum allowed charging current | This parameter sets the maximum value of the charging current. | 5000 | 600-6000 (12V) / 500-5000 (24V ) | | mA | Written using PGN 65491 | Read only |
| | | 65307 | 520335 | 0-1 | 2 | at powerup and on change | 1mV/bit | Bulk voltage | Bulk voltage setting per cell | Target voltage to be reached by the battery during the constant-current bulk charge phase | 2400 (Lead)/ 1510 (NiCd) | 2200-2500 (Lead)/ 1400-1550 (NiCd) | | mV/cell | Written using PGN 65491 | Read only |
| | | 65307 | 520336 | 2 | 1 | at powerup and on change | 1h/bit | Max bulk timer | Maximum bulk duration timer | Maximum duration of the bulk charge phase. If this timeout expires, the device transitions to trickle charge | 15 | 1-24 | | h | Written using PGN 65491 | Read only |
| | | 65307 | 520337 | 3 | 1 | at powerup and on change | 1min/bit | Min bulk timer | Minimum bulk duration timer | Minimum duration of the bulk charge phase | 2 | 1-5 | | min | Written using PGN 65491 | Read only |
| | | 65308 | 520340 | 0-1 | 2 | at powerup and on change | 1mV/bit | Absorption voltage | Absorption voltage setting per cell | Sets the battery voltage per cell during absorption charge | 2375 (Lead)/ 1510 (NiCd) | 2200-2500 (Lead)/ 1300-1550 (NiCd) | | mV/cell | Written using PGN 65491 | Read only |
| | | 65308 | 520341 | 2 | 1 | at powerup and on change | 1h/bit | Max absorption timer | Maximum absorption duration timer | Maximum duration of the absorption phase, after which the device transitions to trickle charge | 4 (Lead) / 8 (NiCd) | 1-24 | | h | Written using PGN 65491 | Read only |
| | | 65308 | 520342 | 3 | 1 | at powerup and on change | 1min/bit | Min absorption timer | Minimum absorption duration timer | Minimum duration of the absorption phase | 15 | 1-240 | | min | Written using PGN 65491 | Read only |
| | | 65308 | 520343 | 4 | 1 | at powerup and on change | 1%/bit | Threshold for return amps to trickle | Return current value (% of maximum charge current) to go to trickle | Magnitude of the battery charge current below which the transition to trickle charge occurs. Value expressed as a percentage of the maximum charge current (set by the "Maximum charge current" parameter) | 6 | 1-100 | | % | Written using PGN 65491 | Read only |
| | | 65308 | 520344 | 5 | 1 | at powerup and on change | 1s/bit | Return amps timer | Return current timer to go to trickle | Time interval during which the charge current magnitude must remain below the value expressed by the "Threshold for return amps to trickle" parameter in order to transition to trickle charge | 30 | 1-240 | | sec | Written using PGN 65491 | Read only |
| | | 65309 | 520345 | 0-1 | 2 | at powerup and on change | 1mV/bit | Trickle voltage | Trickle voltage setting per cell | Sets the value (per cell) of the voltage at which the battery is kept after it has been fully charged. | 2230 (Open Lead)/ 2250 (AGM Lead)/ 2300 (GEL Lead)/ 1400 (NiCd) | 2210-2450 (Lead)/ 1300-1550 (NiCd) | | mV/cell | Written using PGN 65491 | Read only |
| | | 65309 | 520346 | 2 | 1 | at powerup and on change | 2 states/1bit | Force boost charge | If set to 1 during trickle charge, it forces a transition to bulk charge | If set to 1 during trickle charge, it forces a manual transition to bulk charge. | 0 | 0-1 | | | Written using PGN 65491 | Read only |
| | | 65309 | 520347 | 3-4 | 2 | at powerup and on change | 1mV/bit | Return to bulk voltage from trickle | Voltage (per cell) below which the device transitions from trickle to bulk charge | If during trickle charge the battery voltage becomes lower than this voltage threshold (e.g. due to load wired in parallel to the battery) and it remains so for a time interval expressed by the "Return to bulk delay" parameter, the device transitions to bulk charge to charge the battery | 2130 (Lead) / 1280 (NiCd) | 2000-2200 (Lead) 1200-1320(NiCd) | | mV/cell | Written using PGN 65491 | Read only |
| | | 65309 | 520348 | 5 | 1 | at powerup and on change | 1s/bit | Return to bulk delay | Trickle to bulk transition delay after the battery voltage has got below the "Return to bulk voltage" voltage level | Time delay to confirm that the battery has discharged significantly during trickle charge, so that a bulk charge must be undertaken | 30 | 1-240 | | sec | Written using PGN 65491 | Read only |
| | | 65307 | 520339 | 6-7 | 2 | at powerup and on change | 1mV/bit | Traction bulk | Traction of the bulk voltage per cell. In terms of timing consider the parameter "Min bulk timer" | Additional voltage (per cell) to ensure the bulk voltage can be reached at full charging current | 40 (Lead) / 24 (NiCd) | | | mV/cell | | Read only |
| | | 65311 | 520356 | 2-3 | 2 | at powerup and on change | 1mV/bit | Switchoff voltage without mains | Device turnoff voltage when mains is not available. | Battery voltage below which the device turns off when mains is not available. | 2183 (Lead)/ 1310 (NiCd) | 2000-2208 (Lead)/ 1200-1325 (NiCd) | | mV/cell | Written using PGN 65491 | Read only |
| | | 65310 | 520349 | 0 | 1 | at powerup and on change | 8 states/3bit | Lead/AGM/NiCd | Set the battery type and its respective charging algorithm: 0 = Open lead (trickle voltage 2.23V per cell) / 1 = AGM Lead (trickle voltage 2.25V per cell) / 2 = GEL Lead (trickle voltage 2.30V per cell) / 3 = NiCd | Sets the battery type. Writing this parameter is only possible when the battery is not connected. | 0 | 0-3 | | | Written using PGN 65491 | Read only |
| | Device | 65313 | 520358 | 0 | 1 | at powerup and on change | 2 states/1bit | Factory settings | Set all the device parameters to their default value | Writing 1 restores the device to its factory settings, any user setting including histories are lost. | 0 | 0-1 | | | Write only 1 using PGN 65491 | Read only |
| | | 65313 | 520359 | 1 | 1 | at powerup and on change | 8 states/3bit | Product name | Device type (8 = CB12245AJ) | This parameter identifies the product type. | 8 | | | | | Read only |
| | Load | 65314 | 520363 | 0 | 1 | at powerup and on change | 1s/bit | Device switchoff delay | Delay of the device power off in the absence of mains after the battery voltage has been found lower than the parameter "Switchoff voltage without mains" | Device switch off delay setting | 10 | 1-240 | | sec | Written using PGN 65491 | Read only |
| Alarm | Battery | 65316 | 520367 | 0 | 1 | at powerup and on change | 256 states/8bit | Battery connection alarm | bit0=Reversed polarity, bit1=battery not connected, bit2=internal cell shorted | Bit mask; bit 0 value is 1 in the case a battery has been connected to the device with reverse polarity; the value of bit 1 is 1 in the case no battery is connected to the device or the previously connected one has been disconnected. The value of bit 2 is 1 if one or more than one of the cells inside the battery is shorted. | | | | | bitx=1-->alarm | Read only |
| | | 65316 | 520368 | 1 | 1 | at powerup and on change | 256 states/8bit | Battery voltage alarm | bit0=High battery voltage; alarm in case of battery connected with nominal voltage higher than the nominal voltage setting. | Bit mask. The value of bit 0 is equal to 1 when a battery voltage with a voltage higher than the overvoltage threshold (refer to the "Number of high DC voltage events at battery output" parameter description) is connected. | | | | | bitx=1-->alarm | Read only |
| | | 65317 | 520371 | 1 | 1 | at powerup and on change | 2 states/1bit | Internal temperature alarm | 1=Temperature inside the device is too high | If the value of theparameter is 1, the temperature inside the device has been detected to be too high. In this case the battery charge current limit is reduced to 1/10 of the value set by the "Maximum charge current" parameter or set by means of the "Battery Charging Level "trimmer located on the device front panel | | 0-1 | | | 1=alarm | Read only |
| | Load | 65319 | 520374 | 0 | 1 | at powerup and on change | 2 states/1bit | Output short circuit / Overload | Short circuit at the battery terminals. Can only occur when the power supply function is enabled at the battery terminals. | In the case the power supply function at the battery terminals is enabled, its value is 1 if a short circuit or an overload at the Battery Output terminals. | | 0-1 | | | 1=alarm | Read only |
| Clear history | | 65490 | 523000 | 0 | 1 | N/A | | Target source address history clearing | Target source address for history clearing | The source address of the device the history-clearing message is addressed to | | | | | | Write only |
| | | 65490 | 523001 | 1-4 | 4 | N/A | | History SPN to clear | History SPN number to clear | The SPN of the specific history to be cleared | | 520318-520334 | | | | Write only |
| | | 65490 | 523002 | 5 | 1 | N/A | | History value to write | History cleaning command | Write 0 to clear the history | | | | | | Write only |
| Parameter set | | 65491 | 523003 | 0 | 1 | N/A | | Target source parameter setting | Target source address for parameter setting | The source address of the device the configuration parameter setting message is addressed to | | | | | | Write only |
| | | 65491 | 523004 | 1-4 | 4 | N/A | | Parameter SPN to write | Configuration parameter SPN number | The SPN of the specific configuration parameter to be set | | 520335-520363 | | | | Write only |
| | | 65491 | 523005 | 5-6 | 2 | N/A | | Parameter value to write | Value to set | The value to be set to the specified configuration parameter | | 0-65535 | | | | Write only |
| Transmit map | | 65492 | 523006 | 0 | 1 | N/A | | Target source address map transmit | Target source address for map transmission | The source address of the device the map transmission request message is addressed to | | | | | | Write only |
| J1939-71 Vehicle Application Layer | | 64789 | 4990 | 0 | 4 bits | 1s | | Battery Charger 1 State | A state of the battery charger connected to the main battery. | Admissible values are:<br>1 - battery is charging (recovery / bulk / absorption charge)<br>2 - battery has been completely charged and is being maintained charged (trickle charge)<br>13 - battery fault (battery not connected, battery connected with reversed polarity, battery with shorted cells or short circuit at battery output terminals in the case the power supply function at battery terminals is enabled)<br>14 - battery charging is not possible (due to mains not available or battery charger failure) | | 0-15 | | | | Read only |
| | | 64789 | 4993 | 3-4 | 2 | 1s | | Battery Charger 1 Output Current | The charging current of the battery charger connected to the battery. | Value measured by the device | | 0 - 1600A | offset: 32000 scale factor: 50 | | | Read only |

| | | PGN | BYTE 0 | BYTE 1 | BYTE 2 | BYTE 3 | BYTE 4 | BYTE 5 | BYTE 6 | BYTE 7 |
|---|---|---|---|---|---|---|---|---|---|---|
| Monitoring | Battery | 65290 | Battery voltage (SPN 520300) | | Battery charge current (SPN 520301) | | | | | |
| | | 65291 | | | | | | | | |
| | | 65292 | Charging status (SPN 520305) | | | | | | | |
| | | 65293 | Power supply function enabled at the battery terminals (SPN 520306) | Battery type currently selected (SPN 520307) | | | | | | |
| | Device | 65294 | Nominal output voltage (SPN 520308) | Hardware configuration at powerup (SPN 520309) | | | | | | |
| | | 65295 | On-board temperature inside the device (SPN 520310) | | | | | | | |
| | | 65296 | Device variant (SPN 520311) | | Firmware ID (SPN 520312) | | DCUPS function (SPN 520313) | | | |
| | Input | 65297 | | | | | | | | |
| | | 65298 | | | | | | | | |
| | Load | 65299 | | | | | | | | |
| History | Battery | 65300 | Number of charge cycles completed (SPN 520318) | | Charge cycles not completed (SPN 520319) | | | | Total run time (SPN 520321) | |
| | | 65301 | Number of low battery voltage events (SPN 520322) | | Number of high DC voltage events at battery output (SPN 520323) | | Highest battery voltage (SPN 520324) | | Lowest battery voltage (SPN 520325) | |
| | | 65302 | | | | | | | | |
| | Device | 65303 | Number of overtemperature inside events (SPN 520327) | | | | | | | |
| | Input | 65304 | | | | | | | | |
| | | 65305 | | | | | | | | |
| | Load | 65306 | | | | | | | | |
| Configuration | Battery | 65307 | Bulk voltage (SPN 520335) | | Max bulk timer (SPN 520336) | Min bulk timer (SPN 520337) | | | Traction bulk (SPN 520339) | |
| | | 65308 | Absorption voltage (SPN 520340) | | Max absorption timer (SPN 520341) | Min absorption timer (SPN 520342) | Return amps to trickle (SPN 520343) | Return amps timer (SPN 520344) | | |
| | | 65309 | Trickle voltage (SPN 520345) | | Force boost charge (SPN 520346) | Return to bulk voltage from trickle (SPN 520347) | | Return to bulk delay (SPN 520348) | | |
| | | 65310 | Lead/AGM/NiCd (SPN 520349) | | | | | | | |
| | | 65311 | | | Switchoff voltage without mains (SPN 520356) | | | | | |
| | | 65312 | Maximum charge current (SPN 520357) | | | | | | | |
| | Device | 65313 | Factory settings (SPN 520358) | Product name (SPN 520359) | | | | | | |
| | Load | 65314 | Device switchoff delay (SPN 520363) | | | | | | | |
| | System | 65315 | | | | | | | | |
| Alarm | Battery | 65316 | Battery connection alarm (SPN 520367) | Battery voltage (SPN 520368) | | | | | | |
| | Device | 65317 | Device Failure (SPN 520370) | On board temperature alarm (SPN 520371) | | | | | | |
| | Input | 65318 | | | | | | | | |
| | Load | 65319 | Load alarm (SPN 520374) | | | | | | | |

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|---|---|---|---|---|---|---|---|---|---|---|
| **History clearing** | 65490 | Target node ID (SPN 523000) | History SPN to clear (SPN 523001) | | | | | History value to write (SPN 523002) | | |
| **Configuration management** | 65491 | Target node ID (SPN 523003) | Parameter SPN to write (SPN 523004) | | | | | Parameter value to write (SPN 523005) | | |
| **Send all onchange PGNs** | 65492 | Target node ID (SPN 523006) | | | | | | | | |

**J1939-71 Vehicle application layer**

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| **Battery charger 1** | 64789 | (SPN 4990) | | | (SPN 4993) | | | | | |