

# Template talk:FMB CAN adapters

Easy steps to install and configure following CAN adapters on FMC130 device:

- [LV-CAN200](#)
- [ALL-CAN300](#)
- [CAN-CONTROL](#)
- [SIMPLE-CAN](#)
- [MINI-CAN](#)

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## Installing CAN adapter with FMC130 device

### Installing LV-CAN200/ALL-CAN300/CAN-CONTROL

You can watch [LV-CAN200/ALL-CAN300](#) installation video in our YouTube channel [here](#) or follow connection instructions below.

#### Tools needed for installation

- [LV-CAN200/ALL-CAN300/CAN-CONTROL](#)

- Connection scheme (Please contact Teltonika Sales Representative and provide information about **vehicle manufacturer, model** and **year**.)
- FMC130 device
- Pliers
- Quick splice connectors (If vehicle CAN bus wires are very thin CAN adapter wires should be connected directly)
- Plastic pry tool
- Zip ties

## Installation steps


1. Be ready with a vehicle **connection scheme** that you have received from a Teltonika Sales Representative.
2. **Check the scheme** for the current vehicle connection. Look for connectors matching **PINs numbers** and colors (may be different) according to connection scheme.
3. Connect CAN adapter with FMC130:
  1. Connect CAN adapter **PIN 6 (Rx)** to **INPUT 6** of FMC130.
  2. Connect CAN adapter **PIN 5 (Tx)** to **INPUT 5** of FMC130.
4. Connect CAN adapter **CAN wires (CAN L, CAN H)** as specified in connection scheme.


 **Do not swap CAN L and CAN H lines.**  
**Not all CAN adapter wires may be used in vehicle.**

5. Connect CAN adapter **positive** and **ground** wires to the vehicle power supply lines or near FMC130 power wires.

 **Do not swap power supply lines.**  
**Make sure that voltage does not exceed 30V.**

6. Switch vehicle **ignition to ACC** position. CAN adapter **LED diode** on the back should start **blinking**.
7. Configure CAN adapter to read CAN bus data or control vehicle by setting its **program number** - [CAN Adapter configuration](#)

 LV-CAN200/ALL-CAN300 connection example. This is not a connection diagram for your vehicle. Every vehicle has a specific scheme.

 CAN-CONTROL connection example. This is not a connection diagram for your vehicle. Every vehicle has a specific scheme.

## Installing LV-CAN200/ALL-CAN300 + SIMPLE-CAN

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You can watch [LV-CAN200/ALL-CAN300](#) + [SIMPLE-CAN](#) installation video in our YouTube channel

[here](#) or follow connection instructions below.

### Tools needed for installation

- [LV-CAN200/ALL-CAN300](#)
- Connection scheme (Please contact Teltonika Sales Representative and provide information about **vehicle manufacturer, model and year**.)
- [SIMPLE-CAN](#) (Used for contactless connection. If **two CAN lines** need to be connected, **two SIMPLE-CAN's** must be used.)
- FMC130 device
- Pliers
- Quick splice connectors (If vehicle CAN bus wires are very thin CAN adapter wires should be connected directly)
- Plastic pry tool
- Zip ties

### Installation steps

1. Follow the same **1, 2, 3** installation steps as with [LV-CAN200/ALL-CAN300/CAN-CONTROL installation](#).
2. Connect the appropriate CAN bus pair of wires between CAN adapter and [SIMPLE-CAN](#):

If **CAN1 line** need to be connected as specified in connection scheme:

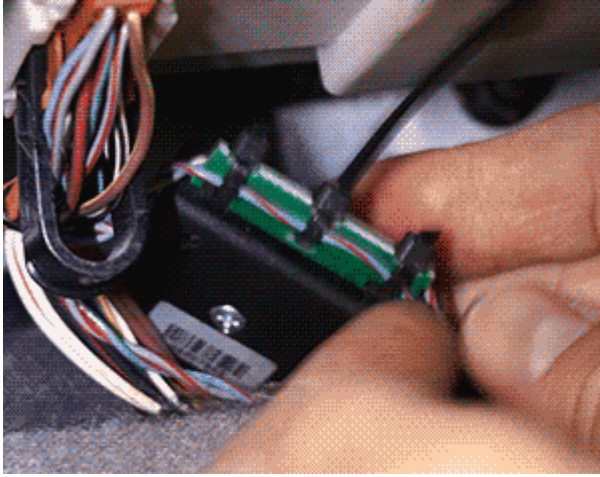
1. Connect CAN adapter **CAN1 L** to **CAN L** of [SIMPLE-CAN](#).
2. Connect CAN adapter **CAN1 H** to **CAN H** of [SIMPLE-CAN](#).

If **CAN2 line** need to be connected as specified in connection scheme:

1. Connect CAN adapter **CAN2 L** to **CAN L** of [SIMPLE-CAN](#).
2. Connect CAN adapter **CAN2 H** to **CAN H** of [SIMPLE-CAN](#).

 **Do not swap CAN L and CAN H lines.**  
**Not all CAN adapter wires may be used in vehicle.**

3. Fasten [SIMPLE-CAN](#) **between vehicle CAN bus wires** according to the connection scheme.  
**It doesn't matter which wire is on which side.**



4. Connect CAN adapter **positive** and **ground** wires to the vehicle power supply lines or near FMC130 power wires.

**Do not swap power supply lines.**  
 **Make sure that voltage does not exceed 30V.**

5. Switch vehicle **ignition to ACC** position.
6. [SIMPLE-CAN](#) LED will **shine continuously** so device awaits for **calibration**.



○ **Press the switch shortly** and wait for the LED to start blinking **every one second**.



Automatic calibration process takes up to 10 seconds depending on the vehicle model. Device is calibrated properly then the LED is blinking **every 2 seconds**.

**✘ If after calibration process LED shines continuously, it means that device is not calibrated yet, CAN-BUS transmission has failed or ignition during calibration was not ON.**

7. Configure CAN adapter to read CAN bus data by setting its **program number** - [CAN Adapter configuration](#)

**✘** LV-CAN200/ALL-CAN300 + SIMPLE-CAN connection example. This is not a connection diagram for your vehicle. Follow LV-CAN200/ALL-CAN300 connection scheme suitable for your vehicle.

## CAN Adapter Configuration

### CAN Adapter program number selection

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CAN Adapter must be set to program number which depends on the vehicle model. **Needed program number is always written on CAN Adapter mounting scheme.** In order to be able to enter program number in adapter **Software date of CAN adapter must be newer than connection scheme date.** CAN adapter Software date can be checked:

- Via [Teltonika Configurator→Status→CAN Adapter](#)
- Via SMS command - [lvcangetinfo](#)

The number of digits required to enter correct Program No. may vary depending on the Software and manufacture date of your CAN Adapter:

- [LV-CAN200 adapter changes](#)
- [ALL-CAN300 adapter changes](#)

## Entering via SMS command

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Required conditions:

- CAN adapter properly connected to FMC130 device

CAN adapter program number can be set remotely, using SMS command. Send following **SMS command** to FMC130 device:

- If you have set SMS login and password: `login pass lvcansetprog X`
- If SMS login and password are not set leave two spaces before command: `lvcansetprog X`

Command example: `lvcansetprog 11434`

SMS response: `LVCAN ProgNum: 11434`

If during SMS command FMC130 was in following Sleep mode:

- [GPS Sleep](#) - Program No. will be set immediately.
- [Deep Sleep](#) - Program No. will be set after device wake up.
- [Online Deep Sleep](#) - Program No. will be set immediately.
- [Ultra Deep Sleep](#) - Program No. will be set after device wake up.

## Entering via Teltonika Configurator

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Required conditions:

- CAN adapter properly connected to FMC130 device

CAN adapter program number can be set via [Teltonika Configurator](#) → **(1) CAN Adapter** → **(2) Program Number**. When program number is entered press  **(3) Save to device** button that saves the entered program number into FMC130.



## Entering manually

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Required conditions:

- CAN adapter properly connected to FMC130 device
- Vehicle ignition must be ON

Depending on used CAN Adapter, length of setup sequence will vary.

Steps to set program number:

- LV-CAN200, ALL-CAN300 back
- CAN-CONTROL back

For ALL-CAN300 LV-CAN200 3 digit	For ALL-CAN300 LV-CAN200 4 digit	For LV-CAN200 CAN-CONTROL 5 digit	1. Hold SWITCH down until LED starts blinking. 2. Release the SWITCH. 3. Then LED starts blinking and counting first digit of program number (one blink means digit 1, two blinks mean digit 2 etc). To stop counter, push SWITCH.
			4. Release the SWITCH, then LED starts blinking and counting second digit of program number. To stop counter, push SWITCH.
			5. Release the SWITCH, then LED starts blinking and counting third digit on program number. To stop counter, push SWITCH.
			6. Release the SWITCH, then LED starts blinking and counting fourth digit on program number. To stop counter, push SWITCH.
			7. Release the SWITCH, then LED starts blinking and counting fifth digit on program number. To stop counter, push SWITCH.
All Devices			8. Release SWITCH, if programming is successful LED will blink 10 times.

## FMC130 CAN Adapter parameters configuration

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### Teltonika Configurator

CAN Adapter configuration can be performed using [Teltonika Configurator](#) via **Micro-USB cable** or

**Bluetooth connection** when CAN Adapter is connected to the vehicle.

When FMC130 is connected to the CAN Adapter, user can see all information that is received from the vehicle in [Teltonika Configurator](#) → **Status** → **CAN Adapter** tab or [Teltonika Configurator](#) → **CAN Adapter** section. In **Status** → **CAN Adapter** tab you can see information about CAN adapter and its readable parameters. In **CAN Adapter** section you can configure CAN Adapter and see incoming CAN bus data highlighted by **green** background color. Incoming data in both sections is automatically refreshed every 5 seconds. CAN bus data which should be readable from your vehicle is provided in "CAN Adapter supported vehicles list", which you can get from Teltonika Sales Representative.

The CAN Adapter I/O element can be configured like any other I/O element in [Teltonika Configurator](#). All information about I/O element parameters description is in section [I/O settings](#).



When using offline configuration method user can select which CAN data (according to vehicle) will be sent directly to the server without connection to adapter.

**Send data with 0, if ignition is off**

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Depending on CAN Adapter I/O parameters and ignition status, FMC130 can send locked (last known) CAN Adapter I/O and active (real time) parameters values or reset values to 0. When ignition is off, CAN Adapter I/O parameters values sent to server are:

<u>CAN Adapter I/O element</u>	<u>Status</u>
<b>Vehicle Speed</b>	reset
<b>Accelerator pedal position</b>	reset
<b>Total fuel used</b>	lock
<b>Fuel level (liters)</b>	lock
<b>Engine RPM</b>	reset
<b>Total mileage</b>	lock
<b>Fuel level (%)</b>	lock
<b>Program number</b>	lock
<b>Module ID</b>	lock
<b>Engine Work Time</b>	lock
<b>Engine Work Time (counted)</b>	lock
<b>Total Mileage (counted)</b>	lock
<b>Fuel Consumed (counted)</b>	lock
<b>Fuel Rate</b>	reset
<b>Program number</b>	lock
<b>AdBlue Level (%)</b>	lock
<b>AdBlue Level (liters)</b>	lock
<b>Engine Load</b>	reset



<b>Engine Temperature</b>	active
<b>Axle 1 Load</b>	lock
<b>Axle 2 Load</b>	lock
<b>Axle 3 Load</b>	lock
<b>Axle 4 Load</b>	lock
<b>Axle 5 Load</b>	lock
<b>Control State Flags</b>	active
<b>Agricultural Machinery Flags</b>	active
<b>Harvesting Time</b>	lock
<b>Area of Harvest</b>	reset
<b>Mowing Efficiency</b>	active
<b>Grain Mown Volume</b>	active
<b>Grain Moisture</b>	active
<b>Harvesting Drum RPM</b>	reset
<b>Gap Under Harvesting Drum</b>	active
<b>Security State Flags</b>	active
<b>Tachograph Total Vehicle Distance</b>	lock
<b>Trip Distance</b>	reset
<b>Tachograph Vehicle Speed</b>	reset
<b>Tachograph Driver Card Presence</b>	active
<b>Driver1 States</b>	active
<b>Driver2 States</b>	active
<b>Driver1 Continuous Driving Time</b>	active
<b>Driver2 Continuous Driving Time</b>	active
<b>Driver1 Cumulative Break Time</b>	active
<b>Driver2 Cumulative Break Time</b>	active
<b>Driver1 Selected Activity Duration</b>	active
<b>Driver2 Selected Activity Duration</b>	active
<b>Driver1 Cumulative Driving Time</b>	active
<b>Driver2 Cumulative Driving Time</b>	active

## SMS Configuration

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All CAN Adapter IO elements can be configured remotely via SMS commands.

### SMS/GPRS Commands

CAN Adapters have several dedicated SMS/GPRS commands.

SMS command structure:

<SMS login><space><SMS password><space><command><space><value>

SMS command [lvcangetinfo](#) example:

- If you have set SMS login and password: login pass lvcangetinfo
- If SMS login and password are not set leave two spaces before command: `lvcangetinfo`

GPRS commands require [Codec 12](#) protocol.

For more SMS commands please see [\[\[{{{model}}}\] SMS/GPRS command list|SMS/GPRS command list\]\]](#)

<b>COMMAND</b>	<b>DESCRIPTION</b>	<b>RESPONSE</b>
lvcansetprog #	Set program number to CAN Adapter that is connected to FMC130. # - three digit number that identity vehicle.	Yes
lvcanimpletacho #	Add or remove simpletacho start byte. # - 0 or 1 (0 - don't add start byte, 1 - add start byte).	No
lvcangetprog	Get program number from CAN Adapter that is connected to FMC130.	Yes
<a href="#">lvcangetinfo</a>	Get information about connected CAN Adapter	Yes
<a href="#">lvcanclear #</a>	Clear Total Mileage (counted), Engine Work Time (counted), Fuel Consumed (counted) parameters values. # - parameter (0 - Engine work time (counted), 1 - Fuel Consumed (counted), 2 - Vehicle Mileage (counted)).	Yes
allcanmode	Turn on ALL-CAN300 mode.	Yes
lvcanmode	Turn on LV-CAN200 mode.	Yes
<a href="#">lvcanfaultcodes</a>	Read DTC fault codes	Yes
<b><u>CAN-CONTROL specific commands</u></b>		
lvcanopenalldoors	Open [unlock] all doors	Yes
lvcanclosealldoors	Close [lock] all doors	Yes
lvcanopentrunk	Open [unlock] trunk	Yes
lvcanturninglights	One flash of all turn lights ordered trough accidental / blinking turn light switch	Yes

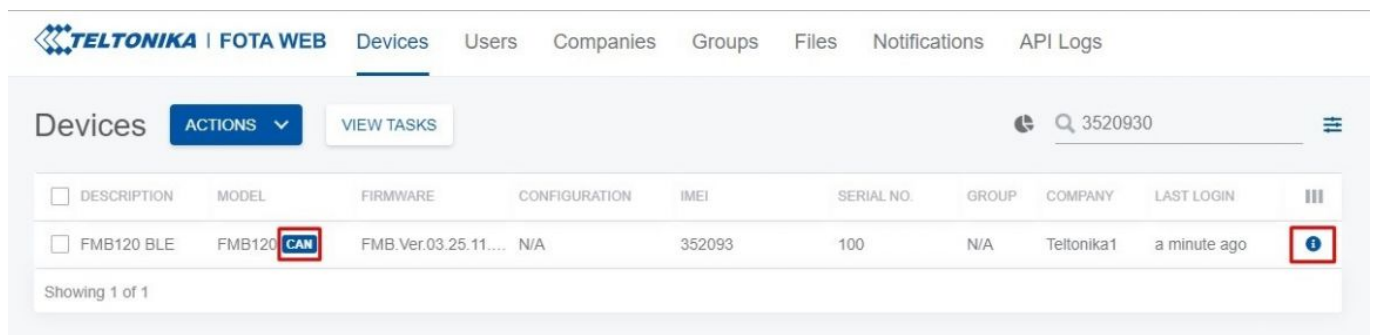
## CAN Adapter software update Over The Air

The software of CAN adapters [LV-CAN200](#), [ALL-CAN300](#) and [CAN-CONTROL](#) can now be updated Over The Air by using [FOTA WEB](#). The feature is also supported by our fresh [FMB140](#) device which has a built-in CAN bus reading adapter. Upgrading the software of a CAN adapter will add more program numbers, thus, more vehicle models will be supported.

**Please note**, that only newer version of LV-CAN200 and ALL-CAN300 CAN adapters support this feature. The version of CAN adapter can be checked by sending an SMS command [lvcangetinfo](#). If, in the response message, "SWRev:" is **145**, the CAN adapter is older and if it is **245**, the adapter is newer. It does not apply to CAN-CONTROL - all CAN-CONTROL adapters support firmware updates over the air.

In order to update your device's firmware please follow a quick and simple step-by-step guide which is below. The procedure is the same for all devices.

- FMC130 device, which is connected to the CAN adapter (or [FMB140](#) which has internal CAN adapter), must be registered in FOTA WEB - device's model, firmware version, serial number and other information must be shown.
- A correct firmware version must be uploaded to the [FMC130](#) device. Currently this feature is only supported with firmware version 03.25.11.Rev144. Once device with correct firmware version connects to FOTA WEB on the next scheduled connection (or instant connection, initiated by an SMS command "web\_connect"), a small, blue, „CAN“ logo will appear next to the device's model:



TELTONIKA | FOTA WEB    Devices    Users    Companies    Groups    Files    Notifications    API Logs

Devices    ACTIONS    VIEW TASKS    3520930

DESCRIPTION	MODEL	FIRMWARE	CONFIGURATION	IMEI	SERIAL NO.	GROUP	COMPANY	LAST LOGIN		
<input type="checkbox"/>	FMB120 BLE	FMB120 <b>CAN</b>	FMB.Ver.03.25.11....	N/A	352093	100	N/A	Teltonika1	a minute ago	<b>i</b>

Showing 1 of 1

- A current version of the CAN adapter version can be checked by pressing a small „i“ button on the right of fleet management device details. All FMC130 device's and CAN adapter's details are listed in one window:



← Device details

DESCRIPTION FMB120 BLE	MODEL FMB120	FIRMWARE FMB.Ver.03.25.11.Rev.142.XIM	CONFIGURATION N/A
IMEI 35209308	SERIAL NO. 1000	GROUP N/A	COMPANY Teltonika1
LAST LOGIN 2 minutes ago			
PROGRAM NUMBER <b>11219</b>	SERIAL NUMBER 8734FB0823312E64FE48051	SOFTWARE DATE <b>191016</b>	

FILES    HISTORY

- If the software is not up-to-date it can be updated in the main window. A check-box needs to be ticked, then „Actions“ button pressed and „Update CAN adapter firmware“ selected:



- Once the software update task has been assigned, it can be seen in the main window. Please note, that uploading will start after the next scheduled connection to FOTA WEB(or instant connection, initiated by an SMS command "web\_connect"):

The screenshot shows the FOTA WEB interface with a table of devices. The first device is highlighted with a yellow background. The 'DESCRIPTION' column contains 'FMB120 BLE' and 'Pending (CAN firm.)'. The 'MODEL' column contains 'FMB120' and 'CAN'. The 'FIRMWARE' column contains 'FMB.Ver.03.25.11...'. The 'CONFIGURATION' column contains 'N/A'. The 'IMEI' column contains '352093084'. The 'SERIAL NO.' column contains '1000'. The 'GROUP' column contains 'N/A'. The 'COMPANY' column contains 'Teltonika1'. The 'LAST LOGIN' column contains '4 minutes ago'. There is a search bar with '35209' and a 'VIEW TASKS' button.

DESCRIPTION	MODEL	FIRMWARE	CONFIGURATION	IMEI	SERIAL NO.	GROUP	COMPANY	LAST LOGIN
FMB120 BLE Pending (CAN firm.)	FMB120 CAN	FMB.Ver.03.25.11...	N/A	352093084	1000	N/A	Teltonika1	4 minutes ago

- When the update is finished, a new software version can be seen in the details window after the next scheduled connection to FOTA WEB(or instant connection, initiated by an SMS command "web\_connect"):

The screenshot shows the 'Device details' window for the device FMB120 BLE. The table displays the following information:

DESCRIPTION	MODEL	FIRMWARE	CONFIGURATION	IMEI	SERIAL NO.
FMB120 BLE	FMB120	FMB.Ver.03.25.11.Rev.142.XIM	N/A	3520930845	10008
GROUP	COMPANY	LAST LOGIN			
N/A	Teltonika1	a few seconds ago			
PROGRAM NUMBER	SERIAL NUMBER	SOFTWARE DATE			
11219	8734FB0823312E64FE480	191104			

At the bottom, there are two tabs: 'FILES' and 'HISTORY'.

## CAN Adapter State Flags

CAN Adapters receive data about the states of various systems within the vehicle, and send them as flags to FMC130. FMC130 device stores these flags in hexadecimal format, as one variable. Below is a list of kept flags and how to retrieve them.

The full list of state flags is stored only by:

- [ALL-CAN300](#)

Only **security state flags** and **control state flags** are stored by:

- [CAN-CONTROL](#)

Property name	Size, bytes	Value bitmasks
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**Control state flags** 4

Byte0 (LSB):  
0x01 - STOP  
0x02 - Oil pressure / level  
0x04 - Coolant liquid temperature / level  
0x08 - Handbrake system  
0x10 - Battery not charging  
0x20 - AIRBAG  
0x40 - EPS (Electric power steering)  
0x80 - ESP (Electronic Stability Program)

Byte1:  
0x01 - CHECK ENGINE  
0x02 - Lights failure  
0x04 - Low tire pressure  
0x08 - Wear of brake pads  
0x10 - Warning  
0x20 - ABS  
0x40 - Low Fuel  
0x80 - Maintenance required

Byte2:  
0x01 - ESP  
0x02 - Glow plug indicator  
0x04 - FAP  
0x08 - Electronics pressure control  
0x10 - Parking lights  
0x20 - Dipped headlights  
0x40 - Full beam headlights  
0x80 - Front foglights

Byte3:  
0x01 - Ready to drive  
0x02 - Cruise control  
0x04 - Automatic Retarder  
0x08 - Manual retarder  
0x10 - Air Conditioning  
0x20 - Rear foglights  
0x40 - Passenger's seat belt  
0x80 - Driver's seat belt

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Byte0 (LSB):

- 0x01 - Mowing
- 0x02 - Grain release from hopper
- 0x04 - First front hydraulic turned on
- 0x08 - Rear Power Take-Off turned on

Byte1:

- 0x01 - Excessive play under the threshing drum
- 0x02 - Grain tank is open
- 0x04 - 100% of Grain tank
- 0x08 - 70% of Grain tank
- 0x10 - Drain filter in hydraulic system of drive cylinders is plugged
- 0x20 - Pressure filter of drive cylinders hydraulic system is plugged
- 0x40 - Alarm oil level in oil tank
- 0x80 - Pressure filter of brakes hydraulic system is plugged

Byte2:

- 0x01 - Oil filter of engine is plugged
- 0x02 - Fuel filter is plugged
- 0x04 - Air filter is plugged
- 0x08 - Alarm oil temperature in hydraulic system of chassis
- 0x10 - Alarm oil temperature in hydraulic system of drive cylinders
- 0x20 - Alarm oil pressure in engine
- 0x40 - Alarm coolant level
- 0x80 - Overflow chamber of hydraulic unit

Byte3:

- 0x01 - Unloader drive is ON. Unloading tube pivot is in idle position
- 0x02 - No operator!
- 0x04 - Straw walker is plugged
- 0x08 - Water in fuel
- 0x10 - Cleaning fan RPM
- 0x20 - Trashing drum RPM
- 0x40 - Pouring chemicals turned on
- 0x80 - Conveyor belt turned on

Byte4:

- 0x01 - Salt spreaders drive wheel turned on
- 0x02 - Low water level in the tank
- 0x04 - First rear hydraulic turned on
- 0x08 - Standalone engine working
- 0x10 - Right joystick moved right
- 0x20 - Right joystick moved left
- 0x40 - Right joystick moved front
- 0x80 - Right joystick moved back

Byte5:

- 0x01 - Brushes turned on
- 0x02 - Water supply turned on
- 0x04 - Vacuum cleaner
- 0x08 - Unloading from the hopper
- 0x10 - High Pressure washer (Karcher)
- 0x20 - Salt (sand) disperser ON
- 0x40 - Low salt (sand) level

Byte6:

- 0x01 - Second front hydraulic turned on
- 0x02 - Third front hydraulic turned on
- 0x04 - Fourth front hydraulic turned on
- 0x08 - Second rear hydraulic turned on
- 0x10 - Third rear hydraulic turned on
- 0x20 - Fourth rear hydraulic turned on
- 0x40 - Front three-point Hitch turned on
- 0x80 - Rear three-point Hitch turned on

Byte7:

- 0x01 - Left joystick moved right
  - 0x02 - Left joystick moved left
  - 0x04 - Left joystick moved front
  - 0x08 - Left joystick moved back
  - 0x10 - Front Power Take-Off turned on
  - 0x20 - Liquid pump turned on
  - 0x40 - Light signal turned on
-

**Security state flags** 8

Byte0 (LSB):  
0x01 - CAN1 connected, but currently module not received data  
0x02 - CAN1 not connected, require connection  
0x03 - CAN1 connected  
0x04 - CAN2 connected, but currently module not received data  
0x08 - CAN2 not connected, require connection  
0x0C - CAN2 connected  
0x10 - CAN3 connected, but currently module not received data  
0x20 - CAN3 not connected, require connection  
0x30 - CAN3 connected

Byte2:  
0x04 - Battery charging  
0x08 - Charging cable connected  
0x10 - Vehicle working mode, 0 - business mode, 1 - private mode  
0x20 - Bit appears when any operate button in car was put. This bit is reset if the button is released  
0x40 - Bit appears when immobilizer is in service mode  
0x80 - Immobiliser, bit appears during introduction of a programmed sequence of keys in the car

Byte3:  
0x01 - The key is in ignition lock  
0x02 - Ignition on  
0x04 - Dynamic ignition on  
0x08 - Webasto  
0x10 - Car closed  
0x20 - Car closed by factory's remote control  
0x40 - Factory-installed alarm system is actuated (is in panic mode)  
0x80 - Factory-installed alarm system is emulated by module

Byte4:  
0x01 - Parking activated (automatic gearbox)  
0x10 - Handbrake is actuated (information available only with ignition on)  
0x20 - Footbrake is actuated (information available only with ignition on)  
0x40 - Engine is working (information available only when the ignition on)  
0x80 - Reverse is on

Byte5:  
0x01 - Front left door opened  
0x02 - Front right door opened  
0x04 - Rear left door opened  
0x08 - Rear right door opened  
0x10 - Engine cover opened  
0x20 - Trunk door opened

Byte6:  
- Low nibble (mask 0x0F value)  
0x01 - Car was closed by the factory's remote control  
0x02 - Car was opened by the factory's remote control  
0x03 - Trunk cover was opened by the factory's remote control  
0x04 - Module has sent a rearming signal  
0x05 - Car was closed three times by the factory's remote control  
- High nibble (mask 0xF0 bit)  
0x80 - CAN module goes to sleep mode

**Tachograph driver card presence** 1

0x00 - No driver card  
0x01 - Driver1 card presence  
0x02 - Driver2 card presence  
0x03 - Driver1 and driver2 cards present

<b>Driver 1 states</b>	1	0xX0 - Break/rest 0xX1 - Availability 0xX2 - Work 0xX3 - Driving 0x0X - No time-related warning detected 0x1X - Limit #1: 15 min before 4 1/2 h
<b>Driver 2 states</b>	1	0x2X - Limit #2: 4 1/2 h reached (continuous driving time exceeded) 0x3X - Limit #3: 15 minutes before optional warning 1 0x4X - Limit #4: optional warning 1 reached 0x5X - Limit #5: 15 min before optional warning 0x6X - Limit #6: optional warning 2 reached

## LV-CAN200/ALL-CAN300 Important Information

### Program Number logic change

Due to the growing number of supported cars, program numbers have exceeded "999". In order to maintain one number format, we are moving from 3-digit to 4-digit program numbers.

In new LV-CAN200/ALL-CAN300 firmware (from 2017-09-01) all program numbers that were up to 999 are changed to start from 1000. So that further program numbers would continue the counting with 4-digit numbers.

However, all existing program numbers stay the same, but "1" is added to the front. Device still understands the entered 3-digit program number (via SMS/GPRS), it will automatically add "1" before it. If you enter "247" - device number will turn into "1247". In Bootloader only 4-digit format is available, just add "1" to the front of the needed program number.

### Example

When using older connection schemes where program number displayed as 3-digit program number:



Using LV-CAN200/ALL-CAN300 Bootloader from soft version 2017-09-27 it is necessary to add "1" to the front of program number:

