

Template:FMB CAN line connection

Easy steps to connect FMB1YX CAN line to the vehicle directly and following contactless CAN connectors:

- [SIMPLE-CAN](#)
- [MINI-CAN](#)

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Installing FMB1YX device

Tools needed for installation


- Wiring scheme by CAN adapter and "*Supported vehicle list*":
 - [LV-CAN200](#)
 - [ALL-CAN300](#)

Note: to get current wiring scheme or if on the "*Supported vehicle list*" you do not find your vehicle, please contact Teltonika Sales Representative and provide information about **vehicle manufacturer, model** and **year**.

- FMB1YX 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 (can be different) according to connection scheme.
3. Connect FMB1YX **CAN wires (CAN L, CAN H)** as specified in connection scheme.

 **Do not swap CAN L and CAN H lines.**
Not all FMB1YX wires may be used in vehicle.

4. Connect FMB1YX **positive** and **ground** wires to the vehicle power supply lines.

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

5. Switch vehicle **ignition to ACC** position. FMB1YX **CAN status LED** on the side should start **blinking**.
6. Configure FMB1YX to read CAN bus data or control vehicle by setting its **program number** - [CAN Adapter configuration](#)



When FMB1YX device turns on sleep mode, CAN chip is turned off till device turns off sleep mode.

Installing FMB1YX + SIMPLE-CAN / MINI-CAN

Tools needed for installation

- Connection scheme by CAN adapter:
 - [LV-CAN200](#)
 - [ALL-CAN300](#)

Note: if on the "*Supported vehicle list*" you do not find your vehicle, please contact Teltonika Sales Representative and provide information about **vehicle manufacturer, model** and **year**.

- [SIMPLE-CAN](#) / [MINI-CAN](#) (Used for contactless connection. If **two CAN lines** need to be connected, **two SIMPLE-CAN's / MINI-CAN's** must be used.)
- FMB1YX 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. Connect the appropriate CAN bus pair of wires between FMB1YX and [SIMPLE-CAN](#) / [MINI-CAN](#):

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

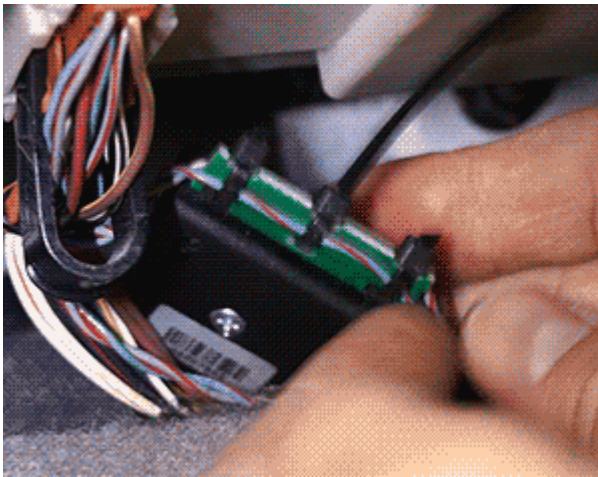
1. Connect FMB1YX **CAN1 L** to **CAN L** of [SIMPLE-CAN](#) / [MINI-CAN](#).
2. Connect FMB1YX **CAN1 H** to **CAN H** of [SIMPLE-CAN](#) / [MINI-CAN](#).

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

1. Connect FMB1YX **CAN2 L** to **CAN L** of [SIMPLE-CAN](#) / [MINI-CAN](#).
2. Connect FMB1YX **CAN2 H** to **CAN H** of [SIMPLE-CAN](#) / [MINI-CAN](#).

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

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



3. Connect FMB1YX **positive** and **ground** wires to the vehicle power supply lines or near FMB1YX power wires.

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

4. Switch vehicle **ignition** to **ACC** position.
5. [SIMPLE-CAN](#) / [MINI-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.

6. Configure FMB1YX to read CAN bus data by setting its **program number** - [CAN Adapter configuration](#)

FMB1YX Configuration

FMB1YX program number selection

FMB1YX 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 - [lvcانgetinfo](#)

Entering via SMS command

Required conditions:

- FMB1YX properly connected to vehicle

FMB1YX program number can be set remotely, using SMS command. Send following **SMS command** to FMB1YX device:

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

Command example: `lvcانsetprog 11434`

SMS response: `LVCAN ProgNum: 11434`

If during SMS command FMB1YX 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

Required conditions:

- FMB1YX properly connected to vehicle

FMB1YX 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 FMB1YX.



FMB1YX CAN Adapter parameters configuration

Teltonika Configurator

CAN Adapter configuration can be performed using [Teltonika Configurator](#) via **Micro-USB cable** or **Blue-tooth connection** when CAN Adapter is connected to the vehicle.

When FMB1YX 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

Depending on CAN Adapter I/O parameters and ignition status, FMB1YX 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:

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

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

SMS Configuration

All FMB1YX IO elements can be configured remotely via SMS commands.

SMS/GPRS Commands

FMB1YX 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: `aa lvcangetinfo`

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

For more SMS commands please see [SMS/GPRS command list](#)

COMMAND	DESCRIPTION	RESPONSE
lvcansetprog #	Set program number to CAN Adapter that is connected to FMB1YX. # - three digit number that identity vehicle.	Yes
lvkansimpletacho #	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 FMB1YX.	Yes
lvcangetinfo	Get information about connected CAN Adapter	Yes
lvcanclear #	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
lvcanfaultcodes	Read DTC fault codes	Yes