FMC650Manual CAN Commands

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To use **Manual CAN commands functionality** user should select **Manual CAN Commands** tab in **Configurator**. Afterwards, user will be able to configure CAN parameters in Manual CAN commands settings tab.

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Manual CAN Commands

The main benefit of using **Manual CAN command functionality** is that the user is able to send data via CAN BUS without requiring additional CAN protocol development from the device's firmware side if vehicle should take an action with equipment connected via CAN line. To send command via CAN line with this functionality, the user must have:

• FMC650 device

03.01.00.Rev.00 or newer firmware for (FMB641/FMC650/FMM650)

- Transport or equipment with CAN interface which works via [1939 protocol
- Transport or equipment CAN communication protocol (with information about *frames*, parameters, ID's, Baudrate)

Manual CAN Command I/O settings

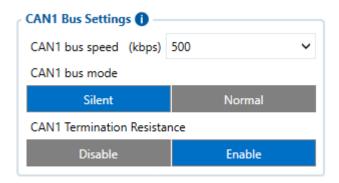
User can configure up to 10 Manual CAN I/O commands by setting CAN Type, Data mask, CAN ID, Request Period, Request Data Length parameters. Each CAN I/O has its own parameter and can be configured independently.

(!)
Functionality
will work
only when
Ignition is
ON

Baudrates are configurable in CAN \ Tachograph tab settings for connected CAN line which could be

- Manual CAN Type parameter defines which CAN ID type will be received and requested (Standard 11bit, Extended 29bit).
- CAN ID/PGN depends on CAN Type parameter and defines which CAN ID will be received by device
- **Data Mask** defines which data mask will be applied to received CAN data. CAN Data mask parameter is 8byte hex value. Displayed data value will be Received Data Value AND Data Mask. In other words Data Mask parameter defines which data will be taken from the specific frame.
- Request data length defines data length of requested ID.
- **Send type** Could be selected with three different choices:
 - o **Once** it defines request will be sent once if Run On Startup is enabled
 - **Periodic** it defines the request via CAN will be sent by set period in ms, for configured send count.
 - **Response** it defines to which MANUAL CAN value will be sent.
- Run On Startup Enable/disable defines if on Ignition startup will be needed to send a command.

Configuration of Manual CAN commands



Example

In the Tachograph/CAN section the user has to select suitable baudrate. Manual CAN baudrate should be visible in the CAN protocol. If it is not known, the user can try to choose different baudrates to indicate which one works.

Protocol example:

Frame ID	Name	Period [ms]	Byte orientation	Bit	Description	Scale factor	Source addresses	Priority
0x620	Range Estimation	1000	1	7:0	Estimated range km	1 km	17	1

0x300	Battery status	On request	0 1 3:2 5:4 7:6	7:0 7:0 7:0 7:0 7:0	Rattom	1 % 1 % 0,0625 A 0,1 C 0,046 V	18	2
0x451	Battery fast charging enable/disable		0:3 4:7		Battery charge enable Battery charge disable 00001 - request	ON/OFF	19	3
0x301	Battery Status message request		0:1	5:0	SOC 1st 00010 - request SOC 2nd		18	2
**0x452	Battery Fast charging mode switch status		0:1	2:0	01 - Charge enable 10 - Charge disabled		19	3
*0x453	Battery Fast charging mode switch		0:1	2:0	01 - Charge enable 10 - Charge disable		19	3

^{** -} CAN ID to send CAN COMMAND

- 1. Select CAN Type. Normally every CAN protocol documentation should mention which CAN type to use. If it doesn't, select **Extended**.
- 2. Fill in the correct Data mask in Manual CAN command 0 setting. This field determines which IO elements of the frame the user will send via CAN line. As an example, the part of the CAN protocol was taken. First, the user has to locate the data frame he wants to send, for this situation, data frame "Battery Fast charging mode switch" was taken into account. It holds two states enable or disable. If we would like to send data of frame, in the configurator the user has to configure 0000000000000000 to disable or 0000000000001 to enable.
- 3. For Manual CAN command 0 settings, **CAN ID** it must be written with **Source addresses**, **Frame ID** and **Priority 19045303**, as you can see in Protocol example.
- 4. Request **data length** configured as **8** bytes.

^{* -} CAN ID to receive value in Manual CAN of CAN COMMAND

5. Send type Once.



- 6. To receive data if the command were permitted correctly in Manual CAN0 we will configure CAN Type Extended.
- 7. Data mask will have selected first two bytes (right to left) from LSB side.
- 8. **CAN ID** will be **FF0452FF** as we are only interested to receive information about the command status execution, for that reason, we ignore **Source addresses** and **Priority ID's** with **FF**.



NOTE: Regarding "in Request" parameters shown in protocol, more information about CAN request functionality can be found here.