



192-300309  
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# GVI

Mobile Inverter

*Application Note GVI -GVM Setting Parameters*



**ENGINEERING YOUR SUCCESS.**

## Non-warranty clause

We checked the contents of this publication for compliance with the associated hardware and software. We can, however, not exclude discrepancies and do therefore not accept any liability for the exact compliance. The information in this publication is regularly checked, necessary corrections will be part of the subsequent publications.

English Master created.

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# 1. Introduction

## 1.1 About this document

### 1.1.1 Definitions

In this documentation the product Global Vehicle Inverter is referred to as “The motor controller” or GVI.

GVI is a family of motor controllers for use in systems with 24-650 DC (nominal) supply and power levels from 4,4 to 398 kVA. GVI frame sizes C, D, E are referred to as Low Voltage (LV) devices, frame sizes G and H are considered as High Voltage (HV) Devices. The GVI is suitable for most electric vehicle applications.

### 1.1.2 Terms and abbreviations

GVI	AC mobile inverter
LV	Low Voltage (24 – 96V)
HV	High Voltage (350 – 650V)
Application	A customer specific use of Parker hardware and software
CAN	Controller Area Network
Drive	Motor controller
NMT	Network management
OEM	Original equipment manufacturer
VMC	Vehicle master controller

### 1.1.3 This revision

This revision replaces all previous revisions of this document. Parker has made every effort to ensure that this document is complete and accurate at the time of printing. In accordance with our policy of continuous product improvement, all data in this document is subject to change or correction without prior notice.

### 1.1.4 Scope

The motor controller is a software configurable device. In a CAN (Controller Area Network) based system, the motor controller setup and operation can be managed by a vehicle master controller communicating over the CAN Bus.

The configuration of the drive can only be done with the CANopen protocol, which is implemented in the Parker GVI configuration tool.

Realtime command and feedback signals can be realized with the CANopen protocol (with 11 bit identifier) or the J1939 (with 29 bit identifier) and is called the *communication interface*, which is described in the document *192-300306Nx - GVI CAN Message Database* (exel format).

This document presents the general description for implementing a CANopen or J1939 communication interface between an IQAN master and a GVI inverter by means of an *External*

*Function*, which basically is a translation of the *192-300306Nx - GVI CAN Message Database* into IQAN format.

Before continuing with the configuration, ensure the Start-up and Commissioning section from the hardware manual (see chapter 1.1.5) has been completed and is fully understood. It is also helpful to have the Object Dictionary, the list of all parameters and variables the motor controller has available via the CAN bus, when reading through this manual.

### 1.1.5 Related documents

For more information about the inverter, see the following related documents.

Reference number	Document	Description
1	GVI Object Dictionary	The document is available from Parker as an HTML file
2	Product Manual for GVI-C D E	Parker EMDE Reference 192-300300Nx
3	Product Manual for GVI-G-H	Parker EMDE Reference 192-300302Nx
4	GVI CAN Message Database	Parker EMDE Reference 192-300301Nx

Table 1 References

## 2. Preamble

Use Parker GVI Configuration Tool V2.3.0.0 (or upper)

Before using this application note, you need to create an Excel parameter setting file (see application note GVI-Motor-Data-Vx) and start from existing "xml" file.

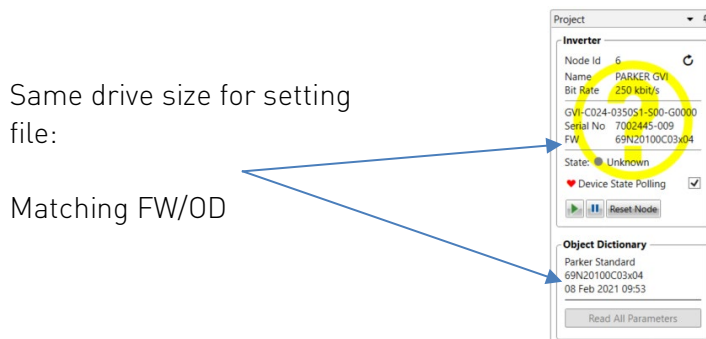
Pay attention: due to not incompatible Object Dictionary (OD) between Low Voltage (LV) and High Voltage (HV) drive, you need to start from different existing "xml" file, in accordance with the drive setting file you want to create.

Keep in mind, ONLY data related to motor setting will be tuned, all data related to customer application have to be tuned during the commissioning process.

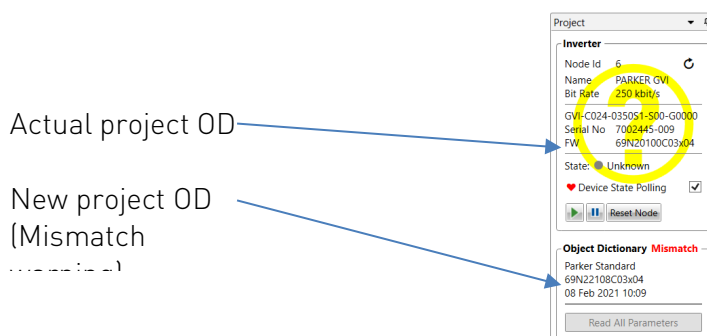
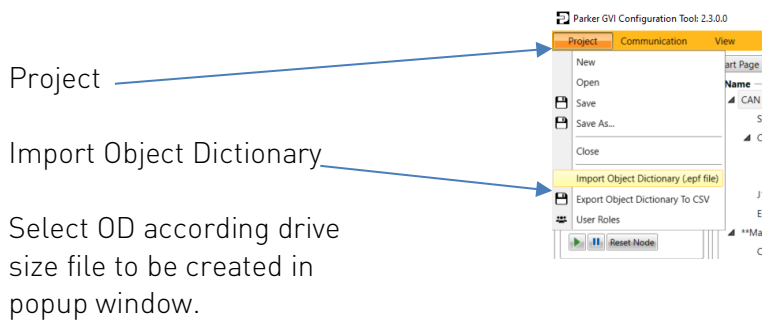
## 3. Setting File

### 3.1 Open existing configuration

Start Parker GVI Configuration Tool, select any CAN Adapter (no need to have one connected) and Open Project. Two situations: or same drive, or different drive.



If you need to create for a different drive size, the Object Dictionary need to be updated:



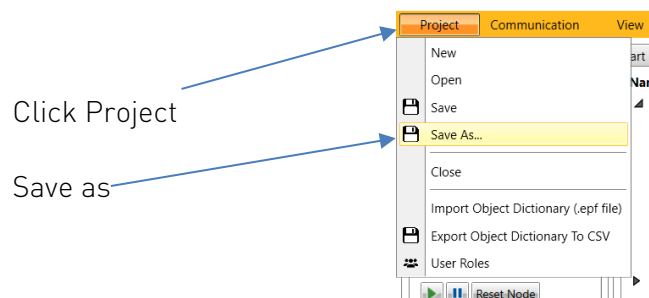
## 3.2 Update Parameters

copy values from Excel file (Default-GVI-Settings), sheet "Calibration data". The orange cells are the values to load in GVI Tool. All objects may be found from the top command bar: View/Object dictionary, or in the Parameter Menu tab. The menus are customizable so that you can create and organize it for your own use (ticking "Edit Mode"). The customized menu view can also be exported/imported (Right Click / import...).

Motor settings, Flux Tables, Current regulator, DC Bus...

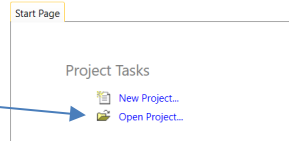
GVI-tool	PMAC motor Parameters		Theoretical	Project file
	MotorPoles	0x2071_08	16	16
	Rmotor	0x2073_06	21950	
	Ld	0x2073_07	895	
	Lq	0x2073_08	540	
	TorqueToCurrentConvers	0x2099_11	280	
	FluxCalculationMethod	0x2076_20	Calc_DQ_Flux	Calc_DQ_Flux
	CurrentAngleOffset	0x2078_03	10.0	10.0
	PMAC motor current regulator		Theoretical	Project file
	PgainDpart_CurrentController	0x2072_05	990.7	
	IgainDpart_CurrentController	0x2072_06	120.0	
	PgainQpart_CurrentController	0x2072_07	990.7	
	IgainQpart_CurrentController	0x2072_08	120.0	
	Dflux tables		Theoretical	Project file
	CurrentInput[0]	0x207C_01	0	
	CurrentInput[1]	0x207C_02	36	

## 3.3 Save setting file



## 4. Load File

Select Open Project

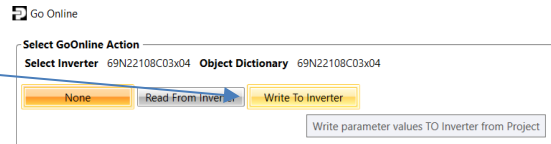


Select the setting file you need load as new configuration.

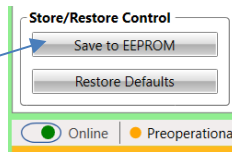
Go Online



Click on Write to



When parameters have been loaded and Online: Click Save to EEPROM.



NEW DRIVE SETTING IS DONE!