















GVI Global Vehicle Inverter

Mobile Inverters for Traction, Electro-Hydraulic Pumps (EHP) and Auxiliary Systems
24 to 650 VDC



ENGINEERING YOUR SUCCESS.

WARNING — USER RESPONSIBILITY

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

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- The user, through its own analysis and testing, is solely responsible for making the final selection of the system and components and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application, follow applicable industry standards, and follow the information concerning the product in the current product catalog and in any other materials provided from Parker or its subsidiaries or authorized distributors.
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Inverters for Traction, Electro-Hydraulic Pumps (EHP) and Auxiliary Systems

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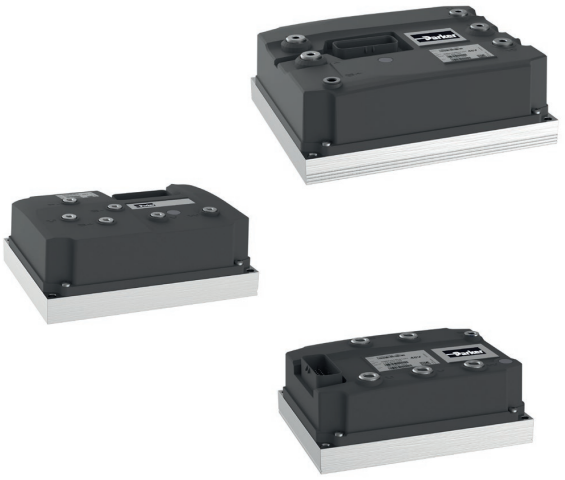
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Low Voltage Mobile Inverters - GVI

Overview

The Low Voltage Parker GVI series represents the latest design standards for compact and reliable inverters for mobile applications. Providing a motor control solution for low voltage battery systems between 24 and 96VDC, GVI motor controllers offer OEMs a superb combination of power, performance and functionality. The compact dimensions and high efficiency of GVI controllers make integration into very limited spaces a reality without sacrificing output performance. Partnered with the Parker GVM range of highly efficient PMAC mobile motors, the GVI range aims to provide the lowest possible installed cost, whilst still maintaining superior reliability even in the most demanding of applications.



Product Features

- **High efficiency cold plate design**
- **IP65 protection class**
- **Motor temperature sensor input**
- **Sin/Cos encoder feedback**
- **CAN J1939 or CANopen communication**
- **Parker IQAN compatible**
- **Configurable coil drive digital outputs**
- **2 Analog inputs / 9 Digital inputs / 6 Digital outputs for use with I/O control mode**

Applications

On and off highway vehicles:

- Light and medium duty traction
- Electrohydraulic pump control
- Electric air conditioning compressors
- Electric air brake compressors

Technical characteristics - overview

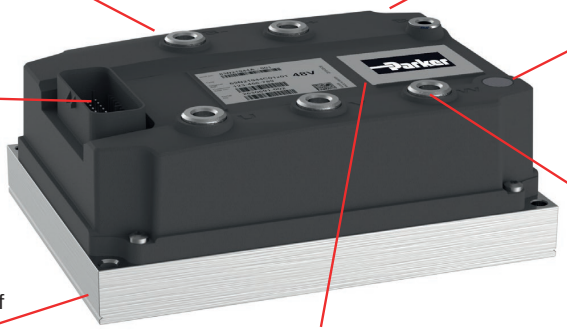
Model	GVI
Motor type	Permanent magnet AC
Nominal voltage	24 / 48 / 80 / 96 Vdc
Peak current	700 Arms
Peak power	82 kVA
Switching frequency	4, 8, 12, 16 kHz
Operating temperature range	-40°C to +55°C
Storage temperature range	-40°C to +70°C
Protection	IP65
Control type	Speed, Current, Torque and DC level Control
Feedback	Sin/Cos encoder
Communications	CAN J1939, CANopen
Cooling	Cold plate
Conformance	IEC60068, EN61000-4, EN1175-1, IEC60529, EN55022
Output frequency	0 - 599 Hz[1)]

[1)] For output frequencies > 599 Hz please contact Parker

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Product Details

Thanks to an IP65 protection class, the drive can be direct vehicle mounted without an enclosure. (no direct high pressure spray)



Technical Data

Product Code	Frame Size	Output Current [Arms] S2, 2 min(1)	Output Current [Arms] S2, 1 h(2)	Nominal input voltage [Vdc]	Battery Voltage Range [Vdc]	Weight [Kg] (lbs)
GVI-C024-0350S1-S00-G0000	C	350	150	24	16-27	2.3 (5)
GVI-C048-0280S1-S00-G0000	C	280	120	48	33-53	2.3 (5)
GVI-D024-0550S1-S00-G0000	D	550	275	24	16-27	2.5 (5.5)
GVI-D048-0450S1-S00-G0000	D	450	225	48	33-53	2.5 (5.5)
GVI-D048-0550S1-S00-G0000	D	550	275	48	33-53	2.5 (5.5)
GVI-D080-0230S1-S00-G0000	D	230	115	80	50-88	2.5 (5.5)
GVI-D080-0350S1-S00-G0000	D	350	175	80	50-88	2.5 (5.5)
GVI-D080-0400S1-S00-G0000	D	400	200	80	50-88	2.5 (5.5)
GVI-D096-0230S1-S00-G0000	D	230	115	96	56-106	2.5 (5.5)
GVI-D096-0350S1-S00-G0000	D	350	175	96	56-106	2.5 (5.5)
GVI-D096-0400S1-S00-G0000	D	400	180	96	56-106	2.5 (5.5)
GVI-E048-0700S1-S00-G0000	E	700	350	48	33-53	4.8 (10.6)
GVI-E080-0500S1-S00-G0000	E	500	250	80	50-88	4.8 (10.6)
GVI-E080-0700S1-S00-G0000	E	700	350	80	50-88	4.8 (10.6)
GVI-E096-0500S1-S00-G0000	E	500	250	96	56-106	4.8 (10.6)
GVI-E096-0700S1-S00-G0000	E	700	350	96	56-106	4.8 (10.6)

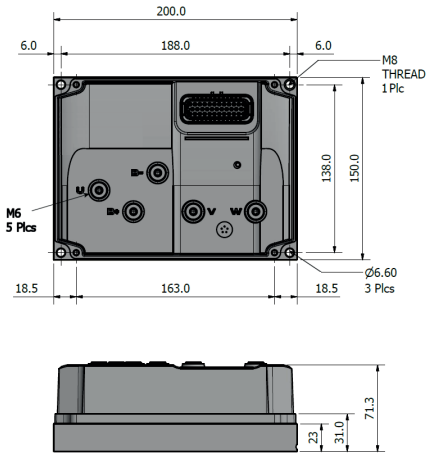
Notes: All current ratings are rms values per motor phase.
(1) 2 minute rating at 8kHz switching frequency and 25°C ambient temperature
(2) 1 hr rating at 8kHz switching frequency and 40°C ambient temperature

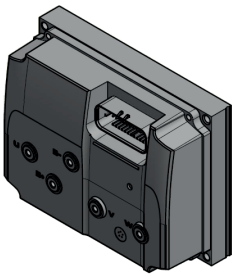
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Dimensions

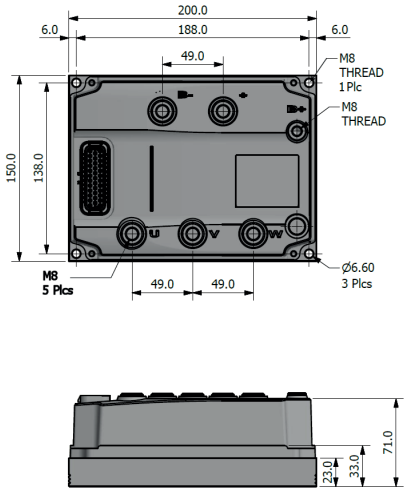
Dimensions [mm]

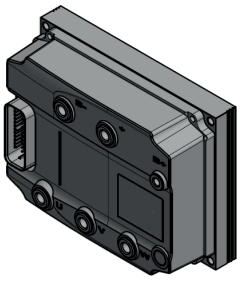
Frame C



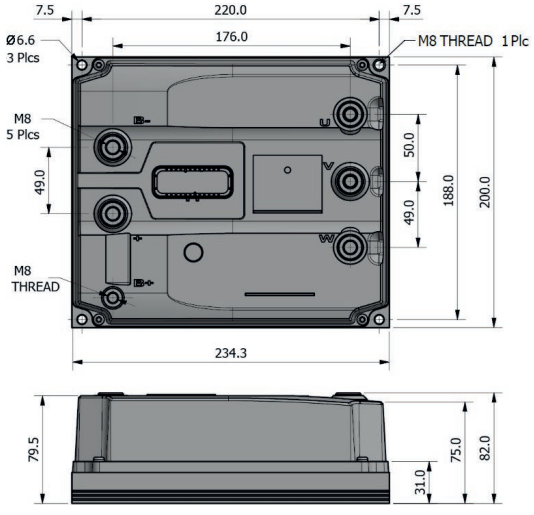


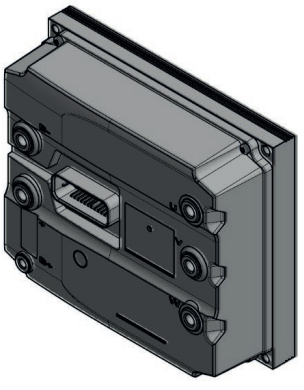
Frame D





Frame E





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Order Code

	1		2	3		4	5	6		7	8		9
Order example	**GVI**	**-**	**C**	**024**	**-**	**0350**	**S**	**1**	**-**	**S**	**00**	**-**	**G0000**

1	**Inverter family**	
	GVI	Global Vehicle Inverter
2	**Frame size**	
	C	Frame size C
	D	Frame size D
	E	Frame size E
3	**Nominal DC Supply**	
	024	24 VDC
	048	48 VDC
	080	80 VDC
	096	96 VDC
4	**Current Rating**	
	24 VDC Nominal Voltage	
	0350	350 A - Frame C
	0550	550 A - Frame D
	48 VDC Nominal Voltage	
	0280	280 A - Frame C
	0450	450 A - Frame D
	0550	550 A - Frame D
	0700	700 A - Frame E
	80 VDC Nominal Voltage	
	0230	230 A - Frame D
	0350	350 A - Frame D
	0400	400 A - Frame D
	0500	500 A - Frame E
	0700	700 A - Frame E
	96 VDC Nominal Voltage	
	0230	230 A - Frame D
	0350	350 A - Frame D
	0400	400 A - Frame D
	0500	500 A - Frame E
	0700	700 A - Frame E
5	**Package**	
	S	Single
6	**Series**	
	1	Series 1
7	**Feedback Type**	
	S	Sin/Cos encoder
8	**Reserved**	
	00	
9	**Special Option**	
	G0000	Global specification*
	N0000	North America specification
	E0000	European specification

* G0000 Global specification is the default reference. For other specifications please contact Parker

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High Voltage Mobile Inverters - GVI

Overview

Description

Providing a motor control solution for battery systems up to 650 V, high voltage GVI controllers offer OEMs high reliability and minimized total lifetime cost. The rugged IP6K9K design is perfect for the harsh environments of mobile equipment, while the integrated DC filter and wide operating voltage range allow maximum flexibility in system design.

Partnered with the Parker GVM range of highly efficient PMAC mobile motors, the GVI range aims to provide the lowest possible installed cost, highest efficiency while still maintaining superior reliability even in the most demanding of applications.



Product Features

- **Auto-tuning**
- **Liquid cooled design**
- **IP6K9K protection class**
- **Motor temperature input**
- **Resolver feedback**
- **CAN J1939 or CANopen communication**
- **Parker IQAN compatible**
- **4 Digital inputs* and 1 digital output**
- **Full current available at 100-750 VDC**
- **Motor Torque Off and HVIL**

Applications

On and off highway vehicles:

- Off highway traction
- Electrohydraulic pump control
- Electric air conditioning compressors
- Electric air brake compressors
- Agricultural implements

Technical characteristics - Overview

Model	GVI
Motor type	Permanent magnet AC
Nominal voltage	650 Vdc
Peak current	500 Arms
Peak power	300 kVA
Switching frequency	1, 2, 4, 6 kHz
Operating temperature range	-40°C to +85°C
Storage temperature range	-40°C to +85°C
Protection	IP6K9K
Control type	Speed, Current, Torque and DC level Control
Feedback	Resolver
Communications	CAN J1939, CANopen
Cooling	WEG liquid cooled
Conformance	ISO20653:2006, ISO16750-4, ISO16750-3 EN60068-2, CISPR25 Ed.4 Class 3, ISO11452-4, ISO11452-8, ISO7637-2
Output frequency	0 - 599 Hz[1)]

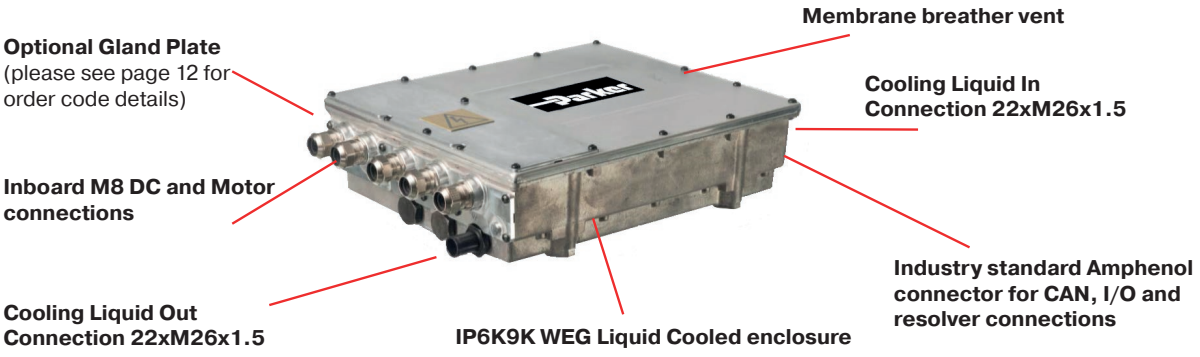
[1)] For output frequencies > 599Hz please contact Parker
[2)] For internal only HVIL option please contact Parker

*Standard firmware reserves 2 Digital inputs for CAN address ID

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Product Details

Rugged IP6K9K design suitable for the demanding environment of electric vehicles



Technical Data

Product Code	Frame Size	Output Current [Arms] S2, 10 s(1)	Output Current [Arms] S2, 1 h(2)	Nominal input voltage [Vdc]	Battery Voltage Range [Vdc]	Weight [Kg] (lbs)
GVI-G650-0300S1-R00-G0000	G	320	225	650	100-750	21 (46.3)
GVI-H650-0500S1-R00-G0000	H	500	375	650	100-750	25 (55.1)

Notes: All current ratings are rms values per motor phase.
(1) 10 second rating at 4kHz switching frequency and 25°C
(2) 1 hr rating at 4kHz switching frequency and 60°C coolant temperature, 85°C ambient and 18l/min flow

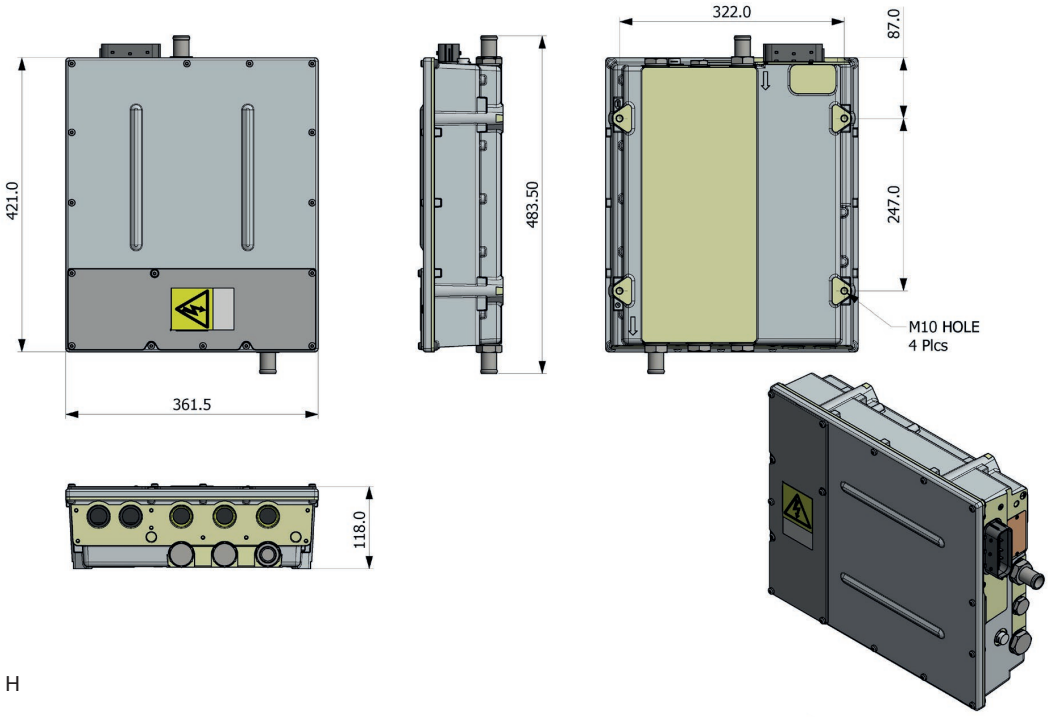
Minimum Coolant Flows: @Coolant temp <0°C >5 l/min
@Coolant temp 0-50°C >10-15 l/min
@Coolant temp >50°C >15-20 l/min

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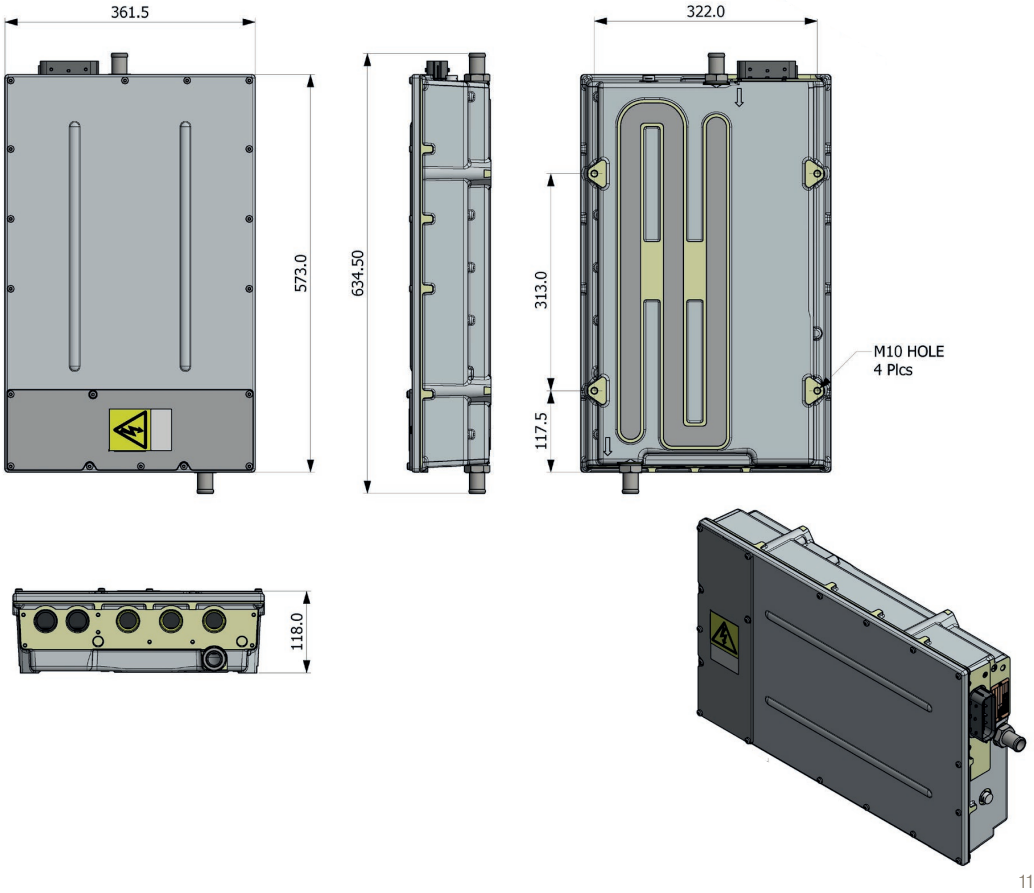
Dimensions

Dimensions [mm]

Frame G



Frame H



Order Code

	1		2	3		4	5	6		7	8		9
Order example	**GVI**	**-**	**H**	**650**	**-**	**0500**	**S**	**1**	**-**	**R**	**00**	**-**	**G0000**

1	**Drive Family**	
	GVI	Global Vehicle Inverter
2	**Frame size**	
	G	Frame size G
	H	Frame size H
3	**Nominal DC Supply**	
	650	650 VDC
4	**Current Rating**	
	650 VDC Nominal Voltage	
	0300	320 A - Frame G
	0500	500 A - Frame H
5	**Package**	
	S	Single
6	**Series**	
	1	Series 1
7	**Feedback type**	
	R	Resolver
8	**Reserved**	
	00	
9	**Special Option**	
	G0000	Global Specification*
	N0000	North American Specification
	E0000	European Specification

* G0000 Global specification is the default reference. For other specifications please contact Parker

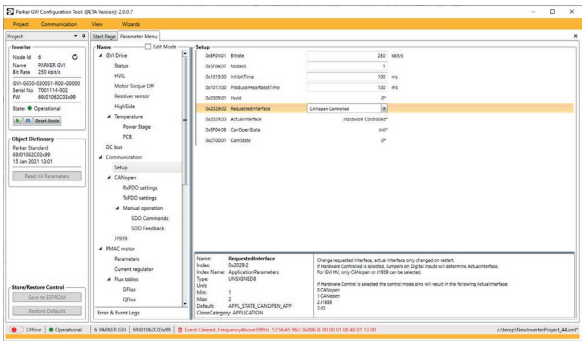
Order Code	Description
GVI-GH-ADAPTORKIT	Power Connection Gland Plate Adaptor Kit (Frames G-H Only)

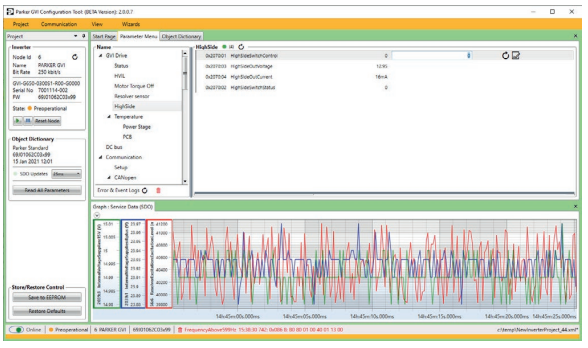
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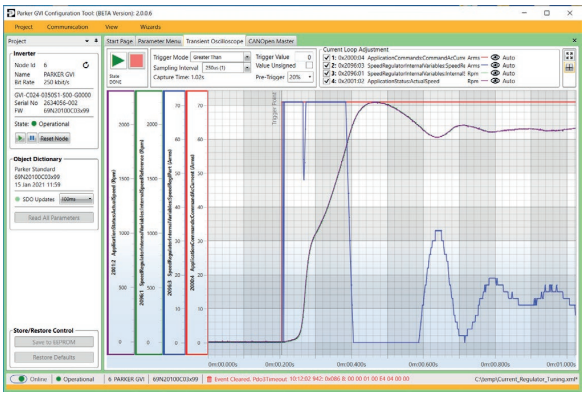
GVI Configuration Tool

Description

The Parker GVI configuration tool provides everything required to configure, tune and commission the GVI inverter. Using one of a range of popular USB-CAN adaptors, the GVI configuration tool maybe used on any Windows based PC. Simple and intuitive, the tool allows for cloning, firmware updates and tuning of the full range of possible GVI/GVM combinations.
The Parker GVI configuration tool also provides a powerful graphing utility and a CANopen master facility aids commissioning by remotely controlling the GVI directly.
To download the tool for free and view video tutorials please visit the GVI product page on Parker.com.







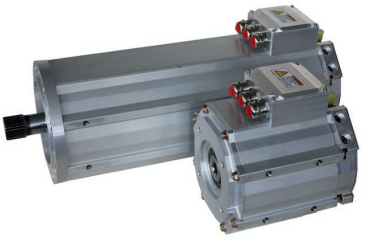
Configuration Tool Features

- Project based configuration tool
- Clone facility for rapid programming
- Firmware update wizard
- Customisable parameter group displays
- NMT control to start/stop the GVI application
- Online and Offline operation modes
- Online graphing tool for up to 8 parameters
- Fast transient 4 channel oscilloscope
- CANopen master simulation

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Related Products

Global Vehicle Motor (GVM)



Description

PMAC servomotors offer the best solution to meet the requirements of vehicle duty performance. The torque density and speed capabilities of Parker Permanent Magnet AC motors (PMAC) provide the speed and torque required to achieve breakthrough performance in a variety of vehicle platforms.

Product Features

- High efficiency
- Compactness (High power density)
- Can be used either as motor or generator
- Operating voltages available from 24 to 800 VDC

Configured ePumps



Description

Configured ePumps are designed and optimised for hybrid electric and all electric mobile applications. Configured ePumps consist of an electric motor, directly coupled to an hydraulic pump and controlled by a high performance mobile hardened inverter.
Parker's configured ePumps provide the lowest possible installed cost and highest efficiency while still maintaining superior reliability in the most demanding applications.
Parker's global expertise in hydraulic, electric motor, and drive technologies is brought together in the EHP to create a system that has been optimally adapted to the customer requirements.



Product Features

- Complete Electro-Hydraulic Pump solutions
- Reduced energy consumption and emissions through flow on demand
- A wide range of motor/pump combinations adaptative to every battery pack providing greater flexibility

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Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 00800 27 27 5374



Aerospace

Key Markets

Aftermarket services
Commercial transports
Engines
General & business aviation
Helicopters
Launch vehicles
Military aircraft
Missiles
Power generation
Regional transports
Unmanned aerial vehicles

Key Products

Control systems & actuation products
Engine systems & components
Fluid conveyance systems & components
Fluid metering, delivery & atomization devices
Fuel systems & components
Fuel tank inerting systems
Hydraulic systems & components
Thermal management
Wheels & brakes



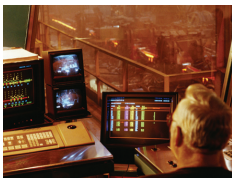
Climate Control

Key Markets

Agriculture
Air conditioning
Construction Machinery
Food & beverage
Industrial machinery
Life sciences
Oil & gas
Precision cooling
Process
Refrigeration
Transportation

Key Products

Accumulators
Advanced actuators
CO_2 controls
Electronic controllers
Filter driers
Hand shut-off valves
Heat exchangers
Hose & fittings
Pressure regulating valves
Refrigerant distributors
Safety relief valves
Smart pumps
Solenoid valves
Thermostatic expansion valves



Electromechanical

Key Markets

Aerospace
Factory automation
Life science & medical
Machine tools
Packaging machinery
Paper machinery
Plastics machinery & converting
Primary metals
Semiconductor & electronics
Textile
Wire & cable

Key Products

AC/DC drives & systems
Electric actuators, gantry robots & slides
Electrohydrostatic actuation systems
Electromechanical actuation systems
Human machine interface
Linear motors
Stepper motors, servo motors, drives & controls
Structural extrusions



Filtration

Key Markets

Aerospace
Food & beverage
Industrial plant & equipment
Life sciences
Marine
Mobile equipment
Oil & gas
Power generation & renewable energy
Process
Transportation
Water Purification

Key Products

Analytical gas generators
Compressed air filters & dryers
Engine air, coolant, fuel & oil filtration systems
Fluid condition monitoring systems
Hydraulic & lubrication filters
Hydrogen, nitrogen & zero air generators
Instrumentation filters
Membrane & fiber filters
Microfiltration
Sterile air filtration
Water desalination & purification filters & systems



Fluid & Gas Handling

Key Markets

Aerial lift
Agriculture
Bulk chemical handling
Construction machinery
Food & beverage
Fuel & gas delivery
Industrial machinery
Life sciences
Marine
Mining
Mobile
Oil & gas
Renewable energy
Transportation

Key Products

Check valves
Connectors for low pressure fluid conveyance
Deep sea umbilicals
Diagnostic equipment
Hose couplings
Industrial hose
Mooring systems & power cables
PTFE hose & tubing
Quick couplings
Rubber & thermoplastic hose
Tube fittings & adapters
Tubing & plastic fittings



Hydraulics

Key Markets

Aerial lift
Agriculture
Alternative energy
Construction machinery
Forestry
Industrial machinery
Machine tools
Marine
Material handling
Mining
Oil & gas
Power generation
Refuse vehicles
Renewable energy
Truck hydraulics
Turf equipment

Key Products

Accumulators
Cartridge valves
Electrohydraulic actuators
Human machine interfaces
Hybrid drives
Hydraulic cylinders
Hydraulic motors & pumps
Hydraulic systems
Hydraulic valves & controls
Hydrostatic steering
Integrated hydraulic circuits
Power take-offs
Power units
Rotary actuators
Sensors



Pneumatics

Key Markets

Aerospace
Conveyor & material handling
Factory automation
Life science & medical
Machine tools
Packaging machinery
Transportation & automotive

Key Products

Air preparation
Brass fittings & valves
Manifolds
Pneumatic accessories
Pneumatic actuators & grippers
Pneumatic valves & controls
Quick disconnects
Rotary actuators
Rubber & thermoplastic hose & couplings
Structural extrusions
Thermoplastic tubing & fittings
Vacuum generators, cups & sensors



Process Control

Key Markets

Alternative fuels
Biopharmaceuticals
Chemical & refining
Food & beverage
Marine & shipbuilding
Medical & dental
Microelectronics
Nuclear Power
Offshore oil exploration
Oil & gas
Pharmaceuticals
Power generation
Pulp & paper
Steel
Water/wastewater

Key Products

Analytical Instruments
Analytical sample conditioning products & systems
Chemical injection fittings & valves
Fluoropolymer chemical delivery fittings, valves & pumps
High purity gas delivery fittings, valves, regulators & digital flow controllers
Industrial mass flow meters/controllers
Permanent no-weld tube fittings
Precision industrial regulators & flow controllers
Process control double block & bleeds
Process control fittings, valves, regulators & manifold valves



Sealing & Shielding

Key Markets

Aerospace
Chemical processing
Consumer
Fluid power
General industrial
Information technology
Life sciences
Microelectronics
Military
Oil & gas
Power generation
Renewable energy
Telecommunications
Transportation

Key Products

Dynamic seals
Elastomeric o-rings
Electro-medical instrument design & assembly
EMI shielding
Extruded & precision-cut, fabricated elastomeric seals
High temperature metal seals
Homogeneous & inserted elastomeric shapes
Medical device fabrication & assembly
Metal & plastic retained composite seals
Shielded optical windows
Silicone tubing & extrusions
Thermal management
Vibration dampening

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