

MOTOR CONTROLLER

GVI Series

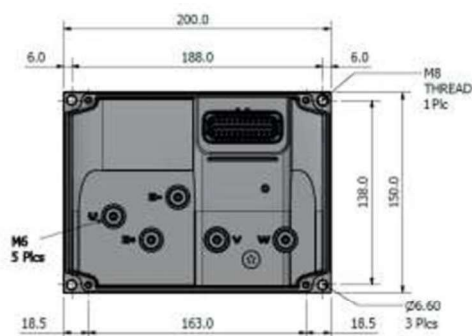


GVI Low Voltage

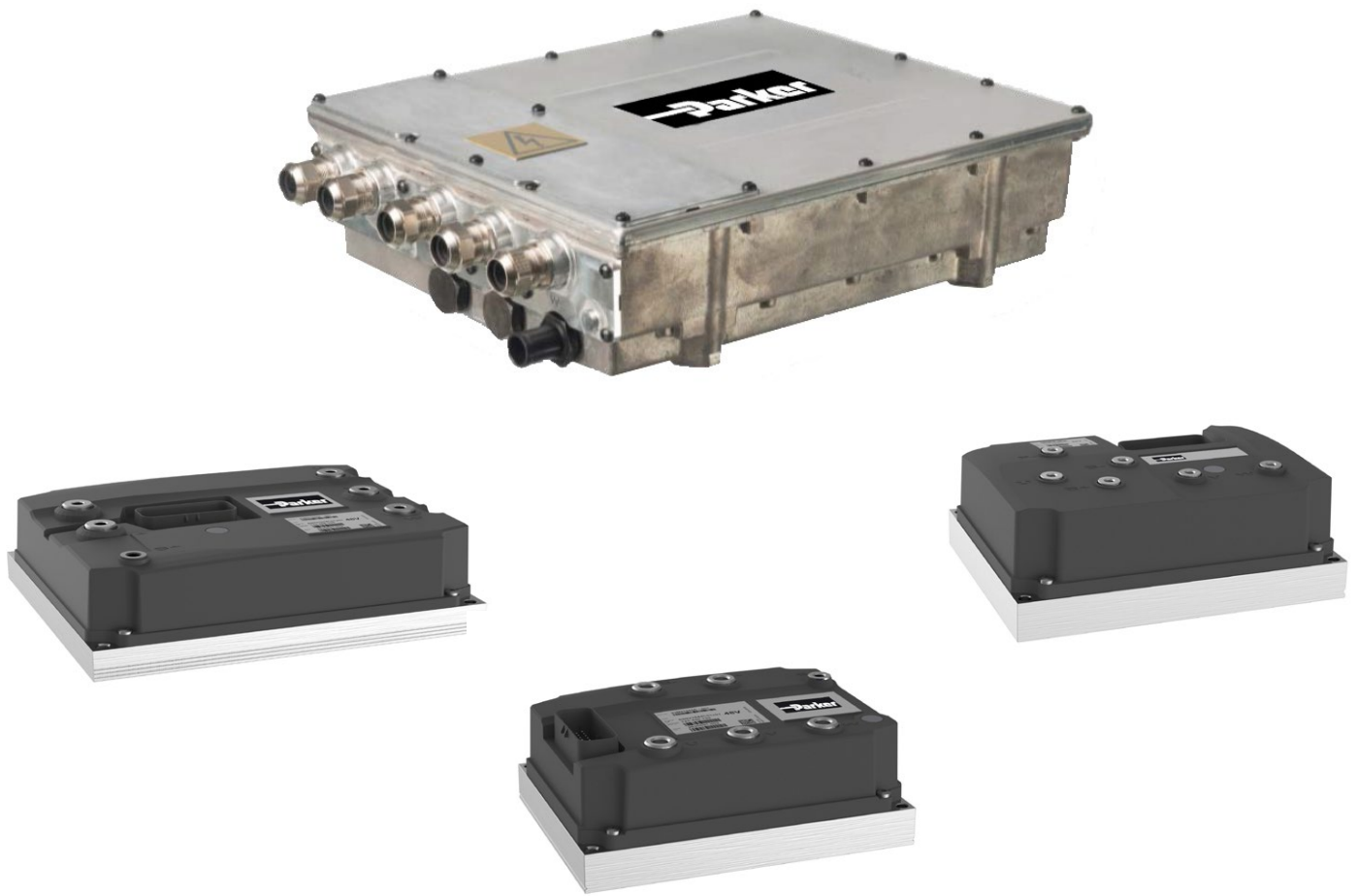


GVI High Voltage

GVIシリーズは、最大650Vのバッテリーシステムに対応した製品です。モータ温度センサ入力、CAN通信（J1939/CANopen）、Parker IQANとの互換性を備えています。また、高効率なParker GVMモータと連携し、ユーティリティ車両や塵芥車、農業機械など、幅広い用途で使用可能です。低コスト・高効率で、優れた信頼性を提供します。



Model		GVI Low Voltage	GVI High Voltage
定格電圧	VDC	24 / 48 / 80 / 96	650
ピーク電流	Arms	700	500
ピーク電力	kVA	82	300
動作温度範囲	°C	-40 ~ +55	-40 ~ +85
保管温度範囲	°C	-40 ~ +70	-40 ~ +85
保護等級		IP65	IP6K9K
制御タイプ		速度、電流、トルク、DCレベル	
制御フィードバック		Sin/Cos エンコーダ	レゾルバ
通信		J1939, CANopen	
冷却方式		空冷	液冷



GVI

GLOBAL VEHICLE INVERTER

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





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.

- This document and other information from Parker-Hannifin Corporation, its subsidiaries and authorized distributors provide product or system options for further investigation by users having technical expertise.
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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⁾

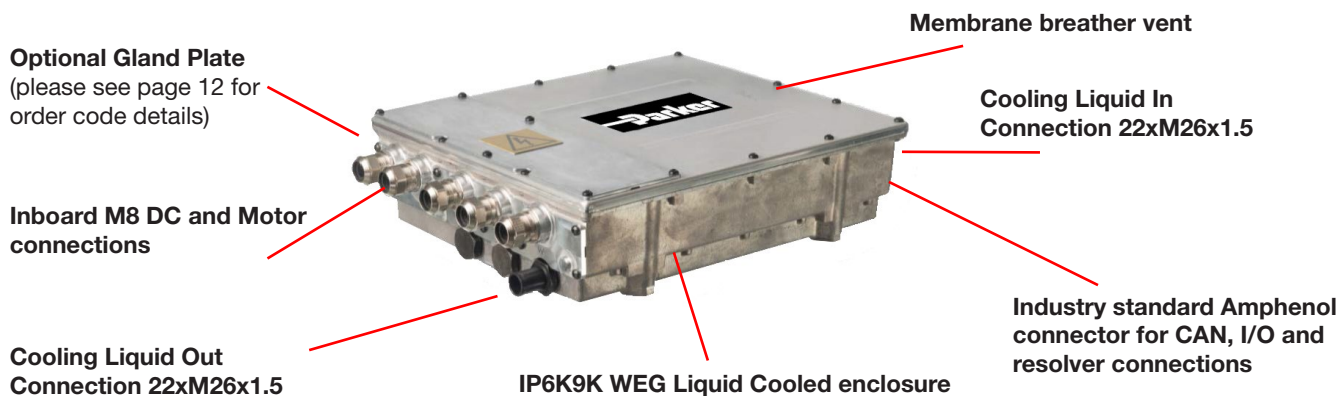
¹⁾ For output frequencies > 599Hz please contact Parker

²⁾ For internal only HVIL option please contact Parker

*Standard firmware reserves 2 Digital inputs for CAN address ID

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.

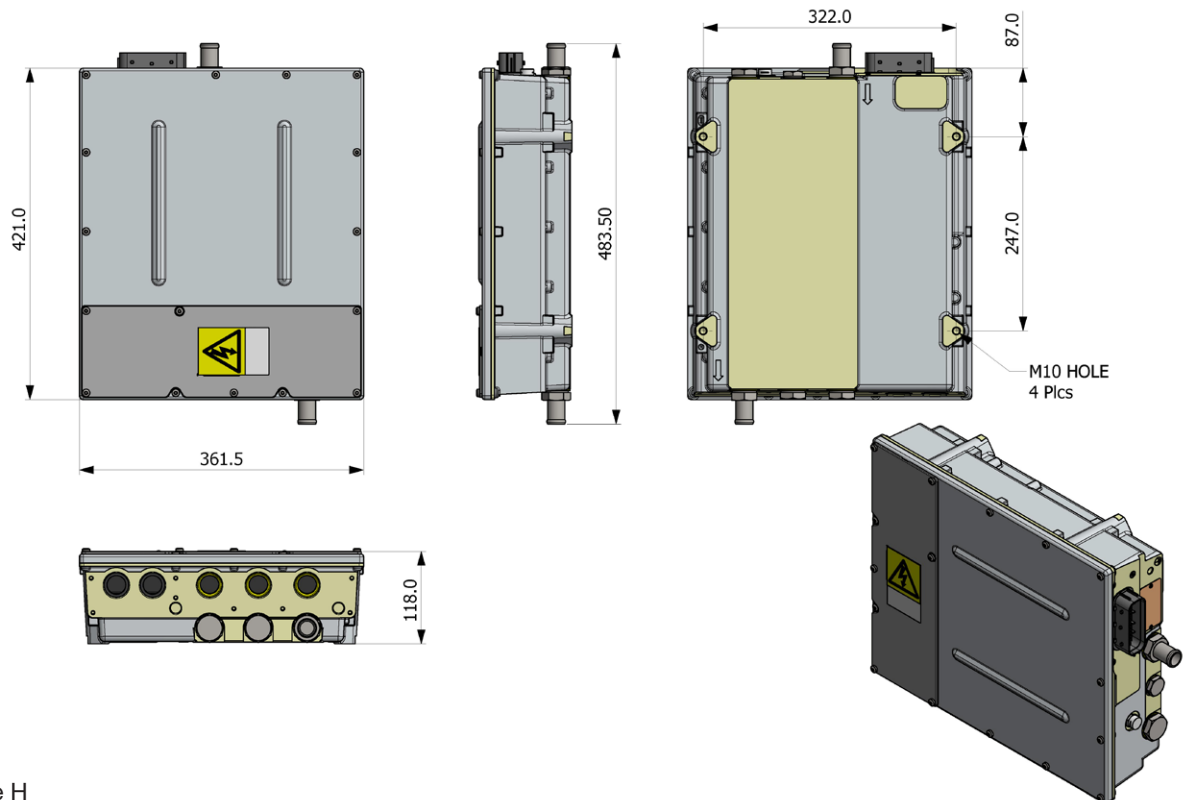
(1) 60 second rating at 4kHz switching frequency and 25°C

(2) 1 hr rating at 4kHz switching frequency and 60°C coolant temperature, 85°C ambient and 18l/min flow

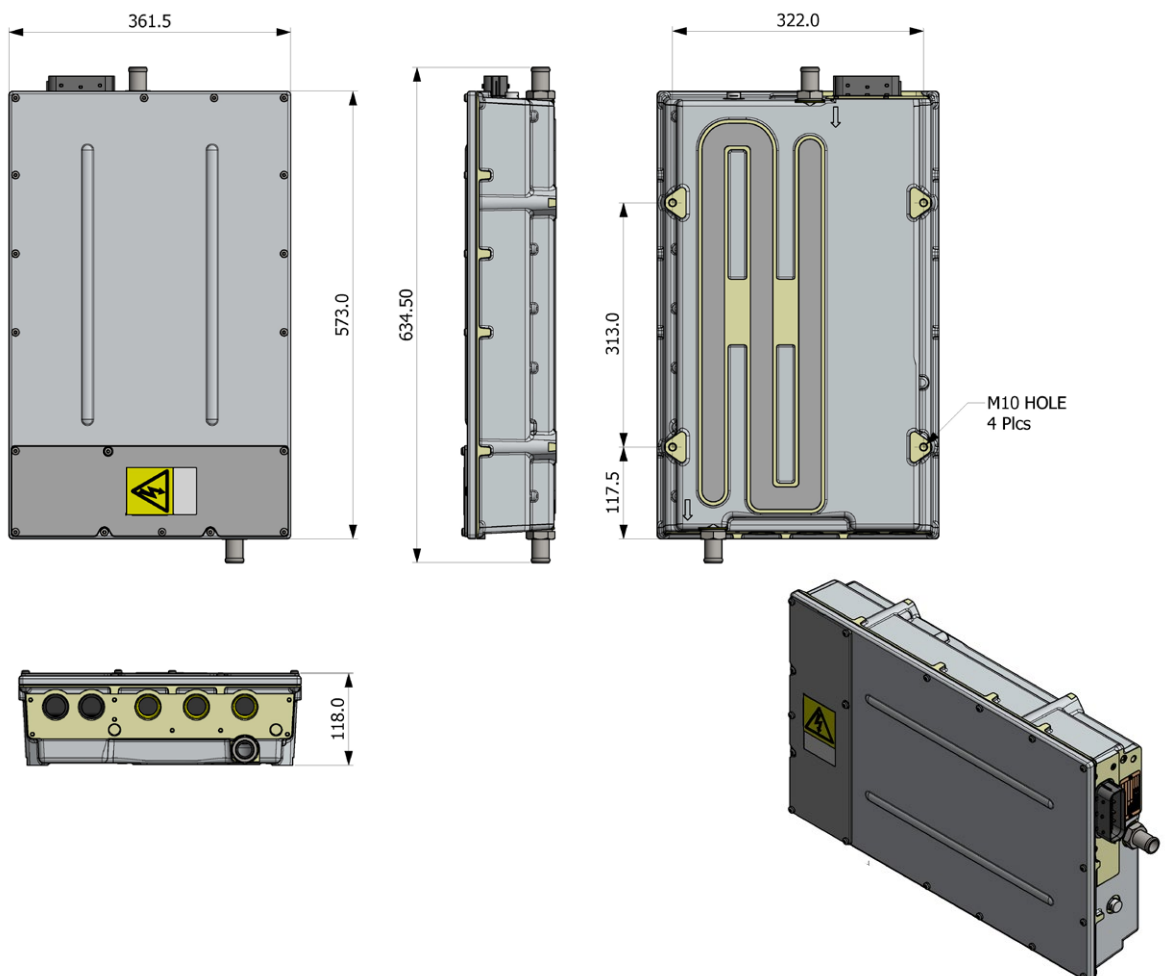
Minimum Coolant Flows: @Coolant temp <0°C >5 l/min
@Coolant temp 0-50°C >10-15 l/min
@Coolant temp >50°C >15-20 l/min

Dimensions

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)

GVI Configuration Tool

Description

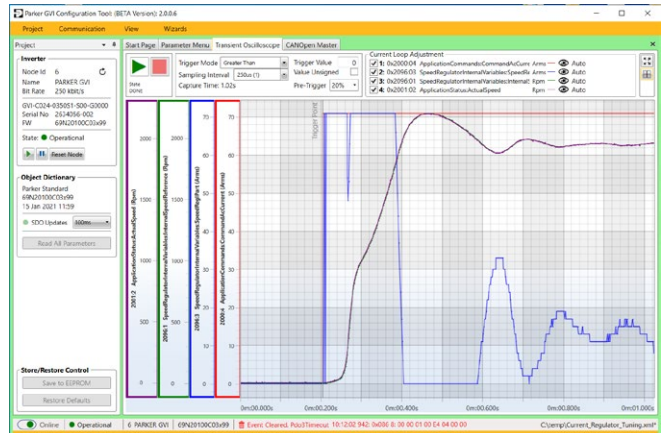
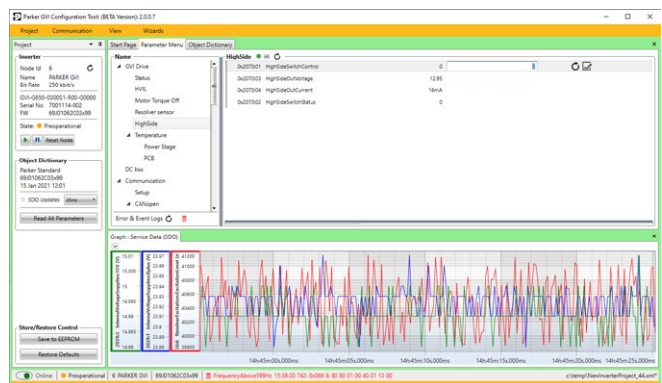
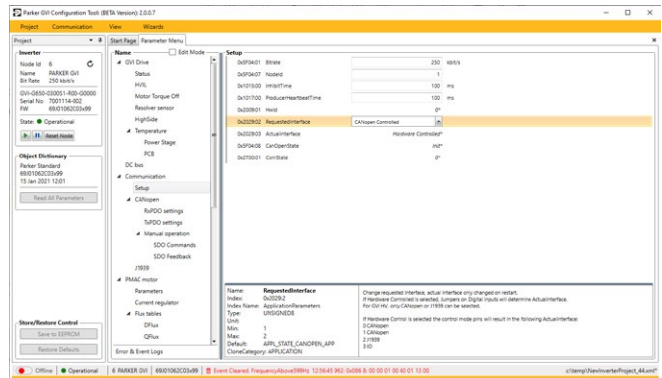
The Parker GVI configuration tool provides everything required to configure, tune and commission the GVI inverter. Using one of a range of popular USB-CAN adaptors, the GVI configuration tool maybe used on any Windows based PC. Simple and intuitive, the tool allows for cloning, firmware updates and tuning 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



Related Products

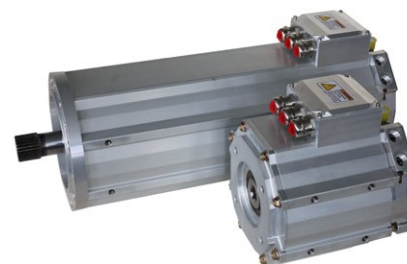
Global Vehicle Motor (GVM)

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



Electro-Hydraulic Pumps (EHP)

Description

The Electro-Hydraulic Pump (EHP) kits are designed for hybrid electric and all electric mobile applications. EHP systems consist of an electric motor directly coupled to an hydraulic pump controlled by a high performance mobile hardened inverter.

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
- Pre engineered system with fully validated pressure, flow and voltage data
- Wide range of motor/pump combinations to adapt to every battery pack





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
CO₂ 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
Electrohydraulic 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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