

American Traction Systems Electric and Hybrid Vehicle Products

ATS EV Solutions

ATS offers several electric vehicle inverters including a DC to AC propulsion system for battery powered and series hybrid vehicles, a high power inverter for propulsion or generator applications, and a high power inverter system that includes an AC induction motor controller, an auxiliary inverter and a built in dump chopper for regenerative protection. These units have been installed on airline FBO equipment, military vehicles, and electric trucks. Our propulsion system has been on the Ohio State Buckeye Bullet electric vehicles setting numerous land speed records.

Hermes Traction Inverter

The Hermes is designed to control a permanent magnet synchronous motor (PMSM) with a resolver position sensor. It can operate very effectively as a dynamic brake down to very low speeds. It uses Adaptive Torque Control which allows user-programmable parameters to control the motor at high and low loads across a wide supply voltage range. Generator mode included with programmable cranking and idle speeds.

Applications include:

- Heavy duty trucks
- City buses
- Mining vehicles
- Marine vessels
- Utility trucks
- All-terrain vehicles
- Motor test stands
- Motor sport



Traction Inverter with Aux Supply

This is a DC to AC propulsion system a 24VDC 75A isolated power supply. Module can operate from 160VDC, 240VDC or 320VDC battery supplies. It is protected against output short circuits and has electronic motor thermal overload protection.

Applications include:

- Off road vehicles
- Airline FBO equipment
- Utility trucks



Traction Inverter with Aux Supply and Brake Chopper

This is an electric power electronics system designed to operate a hybrid or electric vehicle with AC induction motors monitored by encoder based speed sensors. The system consists of a high power traction inverter controller, a 3-phase auxiliary inverter controller and DC dump chopper controller.

Applications include:

- Heavy duty trucks
- City buses
- Mining vehicles
- Utility trucks



Specifications						
Description Part #		Rated Power @ Rated Volts	Voltage Range**		Weight	Dimensions
			Out	In		
DC/AC						
Hermes Traction Inverter						
A300829	Liquid cooled	300kVA @ 500V	200 - 850V	0 - 560V	38.5 kg (85 lbs)	H 586mm (23.1") W 571mm (22.5") D 207mm (8.1")
A300832	Liquid cooled	540kVA @ 700V	200 - 1100V	0- 750V		
Traction Inverter with Aux Supply						
Inverter and Aux Supply A300742	Air cooled	38kVA 57kVA peak	130 - 190V	*	62.6 kg (138 lbs)	H 610mm (24") W 686mm (27") D 279mm (11")
Traction Inverter with Aux Supply and Brake Chopper						
A300785	Fan cooled 1,000V Class	330kVA @ 500V	200 - 850V	*	147.4 kg (325 lbs)	H 711mm (28") W 724mm (28.5") D 328mm (13")
Battery Chargers						
On-Vehicle Battery Chargers						
USABC 110 A801114	Air cooled	45kW @ 650V	300 - 480V _{AC}	600 - 770V	21kg (46 lbs)	H 249mm (9.8") W 330mm (13") D 378mm (14.9")
USABC 75 A801116	Air cooled	32.5kW @ 650V	300 - 450V _{AC}	600 - 770V	14.5kg (31 lbs)	H 210mm (8.3") W 203mm (8") D 256mm (14")
Wayside Battery Chargers						
Mega-Watt Charger A300469	1.6MW @ 700V _{DC} Liquid cooled		480V to 12.72kV	550V - 800V _{DC}	Various	20' Container

*Programmable

**Contact sales rep for additional voltages

Battery Chargers

The **Universal Source Active Battery Charger (USABC)** converts 3-phase AC voltage input to a controlled DC charging power source. It has smart overvoltage and temperature power limiting, and up to 15 chargers can be operated on one CAN control bus. It can interface with multiple manufacturer BMS communication protocols.

Additional features:

- Double-isolation between power components and user control interface
- RS-232 serial interface
- CAN bus control and diagnostics
- Universal control power (120/240V AC, 150-300V DC)
- Ambient operating range: -10°C to +50°C



Wayside Battery Chargers:

The ATS stationary battery chargers are available in 400kW building blocks for high power locomotive and marine applications. Input voltages from 480VAC to 12,000VAC systems are available.





Electric Propulsion Controls and Accessories

Light Rail

American Traction Systems has designed numerous components for streetcars and trolley buses, from propulsion systems used on the New Orleans Canal Streetcars and the recent El Paso streetcar renovations, to the power inverter/air compressor VFD unit designed for Niagara Frontier Transportation Authority. Our latest product is the low voltage power supply self powered from a HVDC input.



Mini-VFD for Traction Motor Blowers



Low Voltage DC/DC Power Supply



Power Inverter for Air Compressors

Rail

ATS designs and manufactures high efficiency locomotive propulsion systems and accessories for new or remanufactured locomotives using AC or DC traction motors, with more than 175 locomotive propulsion systems delivered since 2008.

Systems are running on the Railserve LEAF switching locomotives, the Brookville Co-Gen locomotives, as well as on several in Africa for Grindrod. We also installed the first battery system on a locomotive for Norfolk Southern. We have worked with Loram for many years placing systems on MOW locomotives in Germany, United Kingdom and the U.S.



Propulsion Rack Assembly



Complete Traction Lockers



Installation on locomotive

Marine

ATS marine propulsion systems are available for DC or AC systems and are currently running on passenger ferries, military and research vessels with more than ten million ferry passengers, and over 500 successful military and research voyages. Our products are compatible with all modern subsystems required for the control, positioning and monitoring of a vessel. Our systems are certified by ABS, Lloyds and the U.S. Coast Guard.

Our latest projects include the first all electric passenger/auto ferry in the U.S., the Gees Bend Ferry, and two ferries for Fort Sumter.



Panorama of Alcatraz Flyer engine room with three ATS racks installed. This ferry is part of the Hornblower fleet; one of the four HMS ships on which we have installed propulsion systems.

Custom

ATS has a modern, full service panel shop. We can provide the design, assembly, and testing of custom electrical control panels. We have experience with Programmable Logic Controllers (PLCs) with integrated touch screen, operator stations, VFD controls, DC drives, switchgear and medium voltage cabinets.

We have five independent test bays powered from a dedicated 480V AC 1000A supply providing regulated AC and DC supplies for full load testing of all panels.



Stationary custom panel work



AC and DC Locomotive Traction Lockers



On-site panel work on marine vessel

About American Traction Systems



Founded in 2008, American Traction Systems is celebrating more than 12 years of providing power solutions to a variety of industries. We expanded the technology developed for underground mining vehicles by our sister company, Saminco International (established in 1992), and applied it to above ground applications where we have continued to develop our product line to new industries and services.

We specialize in the design and manufacture of high power AC, DC, and Permanent Magnet Motor Control products primarily for traction and propulsion applications. Our solid state electric vehicle traction controllers are powered by batteries, diesel-electric, fuel cells or power centers for electric vehicles of all types. While standard manufacturing is our mainstay, constant research and development keeps ATS at the forefront.

We are based in Fort Myers, FL with on-premise departments including board design, software and hardware engineering design, CAD, manufacturing, panel wiring, testing and quality control.

Our customers span the globe from North and South America, to Europe, Africa, Asia, and Australia. We have factory trained technicians in North America, Europe, South Africa and Asia.

