American Traction Systems Locomotive Propulsion Systems and Products

**ATS 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.

**ATS Manufactured Components**

**Propulsion Modules**
1,600A Continuous Output Current (DC Motors)
1,100A Continuous Output Current (AC Motors)
“Fast Field” Reversing Field Controllers
Automatic Anti-Wheel Slip Control
Motor Over Load Protection
Wheel Diameter Monitoring and Calibration

**Induction Generator Module**
Output 750VDC at any Engine Speed
800A Continuous Output Current
Bi-directional for Engine Starting

**Dynamic Brake Module**
2800A Brake Current

**Auxiliary Inverters**
Radiator Fans
Cooling Pumps
Air Compressors
Traction Motor Blowers

**Battery Charger**
24VDC, 37VDC and 74VDC output up to 200A

**Generator Excitation Controller**
<150A at full Voltage (Main Generator)
80VAC at idle for Companion Alternator

**Safety Features**
SIL2 (Safety Integrity Level) Certification Available
EN45545 Flammability Certification Available

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<table>
<thead>
<tr>
<th>Specifications</th>
<th>Description</th>
<th>Part #</th>
<th>Purpose</th>
<th>Rated Power @ Rated Volts</th>
<th>Voltage Range**</th>
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<tr>
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<tr>
<td>DC/AC</td>
<td>Armature Module</td>
<td>A300641</td>
<td>For switching/shunting locomotives</td>
<td>747kW</td>
<td>600-750V</td>
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<td>Separate Field Module</td>
<td>A300791</td>
<td>For freight locomotives</td>
<td>747kW</td>
<td>600-750V</td>
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<td>Field Controller</td>
<td>A300677</td>
<td>For DC motor control</td>
<td>150kW</td>
<td>600-750V</td>
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<td>Bi-Directional Field Controller</td>
<td>A310106</td>
<td>For bi-directional DC motor control</td>
<td>748kW</td>
<td>450-1150VDC</td>
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<td>Brake Chopper Module</td>
<td>A300635</td>
<td>For power delivery control to dynamic brake resistors</td>
<td>1495kW</td>
<td>600-750V</td>
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<td>Dual Buck/Boost Controller</td>
<td>A300691</td>
<td>For hybrid/battery locomotives</td>
<td>2x 200kW @500V DC</td>
<td>360-650V DC</td>
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<td>Dynamic Brake Chopper Module</td>
<td>A520002</td>
<td>For AC locomotives</td>
<td>1495kW</td>
<td>600-750V</td>
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<td>Low Voltage Power System</td>
<td>A520010</td>
<td>37.5V DC power supply</td>
<td>6.5kW @ 37.5V DC</td>
<td>450-750VDC</td>
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<td>Traction Inverter Module</td>
<td>A300640</td>
<td>For traction electric propulsion system</td>
<td>2x 149kW (2x 200HP) DC</td>
<td>360-750VDC</td>
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<td>Inverter Module</td>
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<td>For AC traction motor control and/or a dynamic brake</td>
<td>480kW</td>
<td>500-800V</td>
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<td>Mini-VFD</td>
<td>A300505</td>
<td>For blowers, compressors, evaporators, and air handlers</td>
<td>2.6kVA @ 415V</td>
<td>450-900V</td>
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<td>Light Rail VFD</td>
<td>A510008</td>
<td>For induction motors operating air compressor</td>
<td>8.6kVA @ 380V AC</td>
<td>500-800V</td>
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<td>Rectifier Module</td>
<td>A300660</td>
<td>For genset locomotives</td>
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<td>Main Generator Excitation</td>
<td>A310109</td>
<td>For conventional locomotives</td>
<td>0 - 80A</td>
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</table>

**Contact sales rep for additional voltages**
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**Complete Traction Lockers**
Turnkey AC or DC Traction Lockers
Auxiliary Inverters
Battery Chargers
Dynamic Brake Controllers
Generator Excitation Controllers
Axle Generators

**Propulsion Rack Assemblies**
Fully built and tested
Ready to be wired into the locomotive
Assemblies include:
Frame
Cooling Hoses
Cooling Manifolds
Back-plane Assembly
Miscellaneous Hardware
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.

Hybrid
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 regen 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.

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 seven million ferry passengers, and over 100 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.

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.

About American Traction Systems
American Traction Systems is celebrating 10 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.