

Accessory Power System

APS

Our family of APS units provides a range of AC and DC power levels to support the electrification of vehicle accessories on both full battery electric (BEV) and Series Electric Hybrid (HEV) platforms.

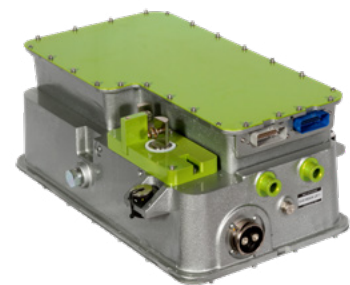
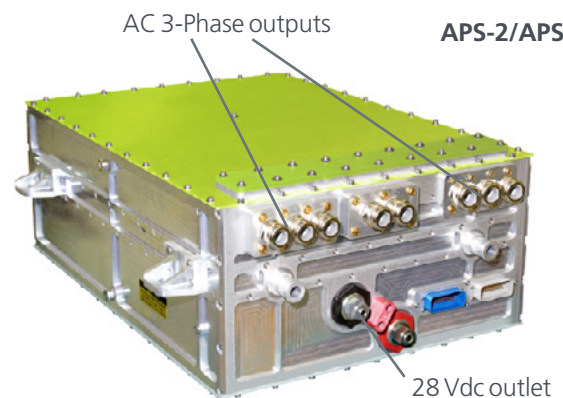
APS-1 delivers 24/28-volt DC electrical power to the entire vehicle. It converts power from the hybrid high-voltage DC system directly to 28-volt DC power. It functions as an electronic alternator, replacing the conventional belt-driven alternator, leading to less maintenance and an increase in efficiency and fuel economy.

This compact unit provides more than double the power output of conventional alternators. This electronic alternator provides over 500amps of continuous output even at engine idle, more than enough capacity to power all conventional electric loads, such as engine cooling fans, pumps, lights, wipers, signage, communications, etc.

APS-2 takes APS-1 a step further, providing variable frequency 3-Phase AC power for high power vehicle accessories, including air conditioning compressors, engine cooling fans, air compressors, and power steering, thus enabling fully-electrical drive operations on HEV vehicles.

APS-3 has all the benefits of APS-2 but now the operator has the ability to power two accessories or two groups of accessories independently from each other since the system has an additional and completely separate variable frequency 3-Phase output.

In certain accessory configurations, the APS-3 can also serve as a power distribution unit (PDU) to run accessories separately. This will provide independence, without the use of contactors, switches and controls, eliminating the need for an additional OEM-installed PDU.

**APS-1****APS-2/APS-3**

Benefits

- Improves life and reduces maintenance of 24/28 volt vehicle batteries
- More than double the output of conventional alternators
- Eliminates conventional belt-driven alternator (and associated belt), eliminating maintenance
- Low-voltage power available at any speed
- Provides independent output for accessory loads

APS-1	APS-2	APS-3
<ul style="list-style-type: none"> 24/28-volt DC power 	<ul style="list-style-type: none"> 24/28-volt DC power 208/230VAC 3-Phase power Variable Frequency Drive (VFD) with dv/dt limiting 	<ul style="list-style-type: none"> 24/28-volt DC power 208/230VAC 3-phase power Variable Frequency Drive (VFD) with dv/dt limiting
Ratings	Ratings	Ratings
DC/DC Converter: 15kW at battery post 545 Amps @ 27.5 Vdc	DC/DC Converter: 14kW at battery post 510 Amps @ 27.5 Vdc Auxiliary Power Inverter: #1: 30 kW 208/230 Vac, 3-phase, Variable Frequency Drive (VFD) with dv/dt limiting (compatible with general purpose motors)	DC/DC Converter: 14kW at battery post 510 Amps @ 27.5 Vdc Auxiliary Power Inverter: #1: 30 kW 208/230 Vac, 3-phase, Variable Frequency Drive (VFD) with dv/dt limiting compatible with general purpose motors Auxiliary Power Inverter: #2: 16 kW 208/230 Vac, 3-phase, Variable Frequency Drive (VFD) (inverter duty motors required) Designed for: DC/DC Converter: 15kW Auxiliary Power Inverter #1: 30kW AC Auxiliary Power Inverter #2: 60kW AC Combined cannot exceed 60kW.
Coolant		
Coolant temperature for full performance: -40° to 149° F (-40°C to 65°C) 113°F (45°C) nominal External ambient: -40° to 167°F (-40° to 75°C) Coolant: water ethylene or propylene glycol 57 lpm (15 gpm)		
Size (over chassis)	Size (over chassis)	Size (over chassis)
Length: 582 mm (22.9 in) Width: 337 mm (13.3 in) Height: 236 mm (9.3 in) Weight: wet: 37 kg (82 lbs.)	Length: 27 in (686 mm) Width: 19.5 in (495 mm) Height: 10 in (254 mm) Weight: wet: 167 lbs (76 kg)	Length: 27 in (686 mm) Width: 19.5 in (495 mm) Height: 10 in (254 mm) Weight: wet: 175 lbs (79 kg)

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