

# Modular Accessory Power System

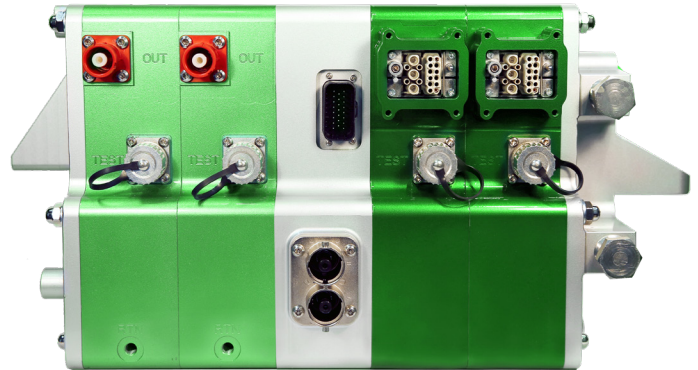
## MAPS

**Our next-generation, Modular Accessory Power System (MAPS) offers a compact and light-weight modular design, delivering best-in-class power and performance utilizing game-changing power electronics.**

Building upon 25 years of electric drive solution experience, we're increasing vehicle efficiency and reliability further using the latest technology and materials. The modular design of our power electronics enable our customers to choose the functionality required without adding unnecessary weight, creating a more compact component. MAPS can be customized based on the number of electric vehicle accessories needing power and the amperage needed to operate.

We are utilizing advanced materials such as silicon carbide to improve heat management, lower weight, and increase power density. Wide band gap transistors with gallium nitride are used to provide faster switching, generate less heat, and decrease power losses and component size.

At a systems level, our electric drive configurations use 50 percent fewer connections, wires, and cables than competitive systems and help prevent efficiency losses.



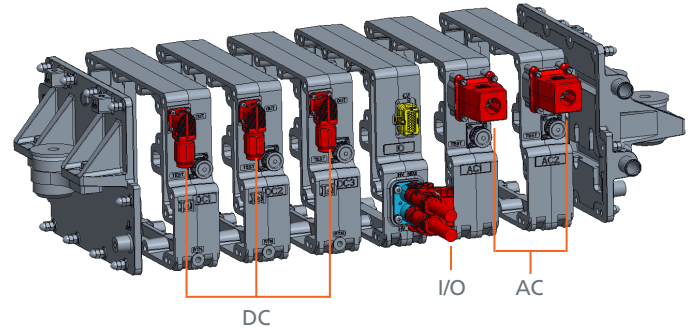
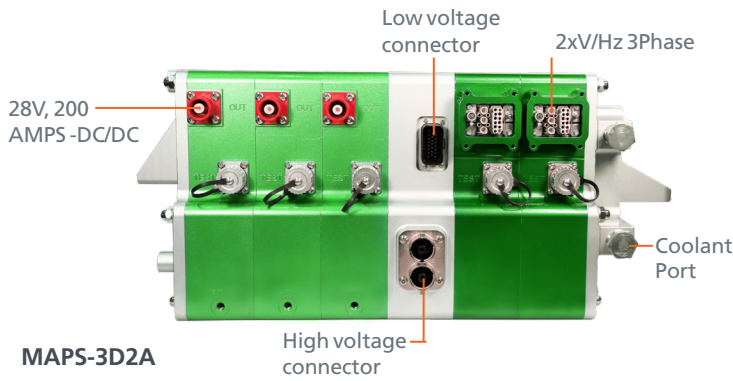
**MAPS-2DM2A system is capable of powering up to 400 amps of 28V systems and two high voltage vehicle accessories such as, power steering, air conditioning, or air compressors.**

#### **Powers:**

- Starter and ignition power
- Air conditioning
- Steering
- Vehicle accessories
- Air compressors

#### **Features:**

- Modular, scalable design
- Common build-able modules
- Configurations for lower power or higher power systems
- Rugged, compact multi-functional design
- Utilizing advanced materials such as silicon carbide and gallium nitride
- Independent power sources for fault isolation
- No regularly scheduled maintenance is required



The size of each system is based on the number of functional slices combined. Each slice is approximately 75mm.

### Which configuration is best for you?

The number of modules needed is based on the amount of amperage needed (D) and the number of vehicles accessories to power (A).

### Output and powers:

Model 3DM2A will provide 600 amps of 28 volt power to independent three-phase vehicle accessories.

Slice	Weight (lbs)	Weight (kg)	Width
Left End Cap	9.2	4.2	~123mm
Right End Cap	17.6	8.0	~123mm
DC (D,S)	17.3	7.8	72mm
I/O (M,N)	17.3	7.0	72mm
AC (A,P,W)	14.3	6.5	72mm

### Coolant:

Temperature for full performance: -40° to 149° F (-40°C to 65°C)

External ambient: -40° to 167°F (-40° to 75°C)

Coolant: water ethylene or propylene glycol 57 lpm (15 gpm)

Model	28V Output A	3-Phase Power 28 Amps RMS ea.	Total Power (kW)
1D	200	-	5.6
2D	400	-	11.2
1D1A	200	1	20.6
2D1A	400	1	26.2
1D2A	200	2	35.6
2D2A	400	2	41.2
2D3A	400	3	56.2
3D2A	600	2	46.8
3D3A	600	3	61.8

### MAPS Module Descriptions

D	Base 28V module
S	D with battery measurements
M	Base I/O module
N	I/O module with one output
A	Base 3-phase module
P	A with additional measurement
W	High voltage DC gateway module

### Specifications - 3DM2A

Width	516 mm
Depth	372 mm
Height	272 mm
Footprint	0.192 m <sup>2</sup>
Volume	52.2 L
Mass	55 kg (121.7 lbs)

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