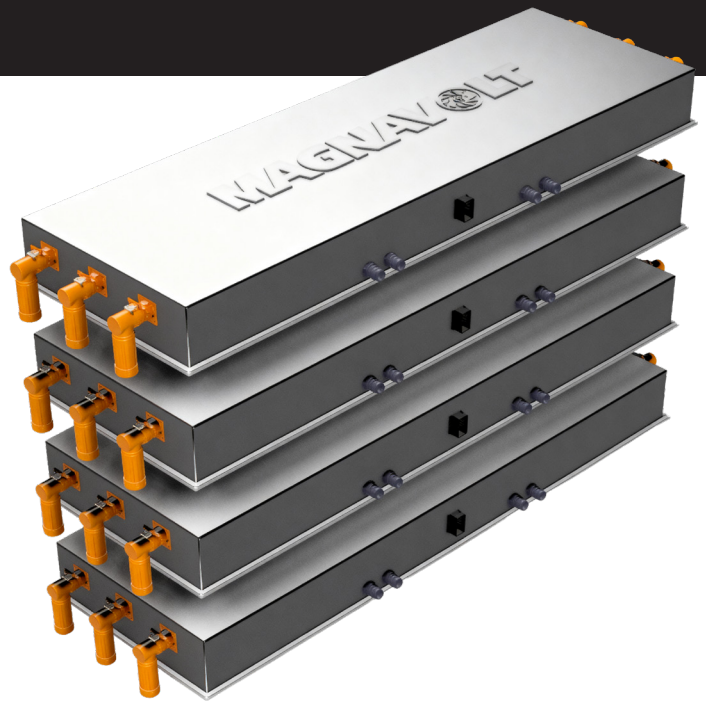


Extreme Power Conversion Unit (EPCU)

Megawatt scalability in ultra small form factor



Advanced Technology in Power Conversion

The EPCU is MagnaVolt's silicon-carbide power conversion platform: a compact, liquid-cooled module that rectifies high-frequency AC onto a 1500 V DC link and synthesizes exactly the output waveform the application demands. Voltage and frequency become configuration rather than construction – one hardware platform serves 50 Hz grids, 60 Hz industrial buses, 400 Hz specialized loads, or direct DC.

Each 67 kg module carries best-in-class power density, and capacity scales by addition: modules parallel from 400 kW to 3.2 MW. Independent cooling loops serve the AC-DC and DC-AC stages, the externally accessible DC link is storage- and DC-bus-ready, and every module integrates Ethernet and CAN control with a hardware E-stop.

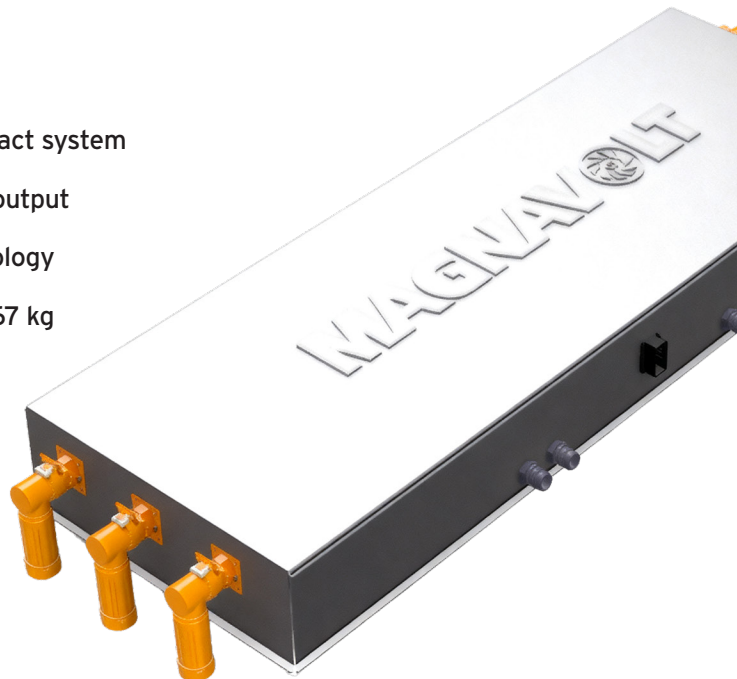
Applications

- Defense
- Marine
- Emergency Response
- Remote Power
- Data Centers

Features & Benefits

- AC to AC conversion in a compact system
- 1500 V DC link with direct-DC output
- Advanced SiC switching technology
- Best-in-class power density – 67 kg (148 lb) per module
- Scales 400 kW to 3.2 MW by paralleling
- Modular by design – independent subsystems for quick and easy service

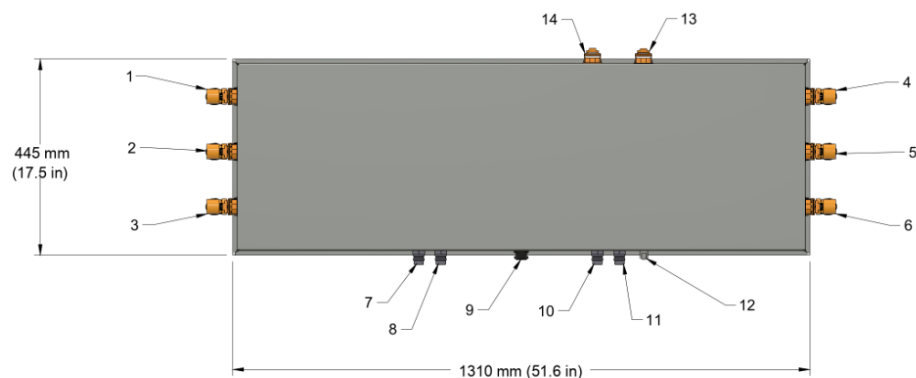
Module – liquid cooled, Amphenol single-pole power connections



PRELIMINARY SPECIFICATIONS

Per module. Preliminary engineering data; production specifications may refine these figures.

Architecture	AC → DC → AC, 1500 V DC link	Silicon-carbide (SiC) switching throughout
Conversion capacity	400 kW - 3.2 MW	Scales by paralleling modules
AC input	879 V · 500 Hz · 370 A	RMS; high-frequency generator side
AC output	480 V · 60 Hz · 680 A	RMS; reference configuration – output is configurable
DC output	1,500 V · 215 A	Direct from the DC link; storage and DC-bus ready
Mass	67 kg (148 lb)	Per module
Dimensions	1356 x 445 x 131 mm	53.4 x 17.5 x 5.2 in · per module
Cooling	Liquid	Independent loops for the AC-DC and DC-AC stages
Power connections	Amphenol single-pole	Three-phase in and out; DC link terminals accessible
Control & monitoring	Ethernet, CAN	Hardware E-stop input



ITEM	DESCRIPTION	ITEM	DESCRIPTION
1	AC Input Phase A	8	AC-DC Cooling Output
2	AC Input Phase B	9	Communication Port
3	AC Input Phase C	10	DC-AC Cooling Input
4	AC Output Phase A	11	DC-AC Cooling Output
5	AC Output Phase B	12	E-Stop Input
6	AC Output Phase C	13	DC Link Positive
7	AC-DC Cooling Input	14	DC Link Negative

Full engineering data package – ranges, ratings, site requirements, and test data – available under NDA.