



Magnetek's E-Force Solar grid-tied systems are designed for large solar applications such as "big box" retail, office buildings, industrial facilities or ground mount installations. Harvest more green with E-force's Maximum Power Point Tracking (MPPT) algorithm that maximizes energy produced under varying light conditions. The revolutionary switching technology utilized in the E-Force large-scale inverter includes state-of-the art Insulated Gate Bi-polar Transistors (IGBTs) to reduce switching losses.

E-Force has been designed with large de-rating criteria on all critical components, achieving an extremely robust and reliable inverter designed to last for 25 years and to deliver true maximum output power on a continuous basis. With this design concept, E-Force achieves peak efficiencies of over 97%. Total current harmonic distortion is typically less than 3% through E-Force's control switching technology.

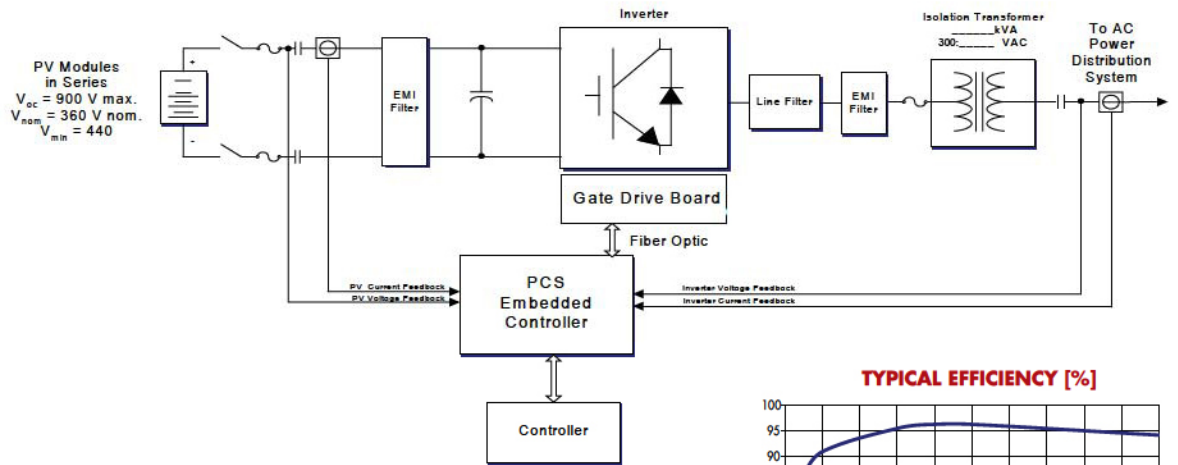
SMART CONTROLS

E-Force controls are Digital Signal Processor (DSP) based with sophisticated control and self-diagnostic algorithms. An LCD display shows the unit's operating status and a built-in Data Logger records and sends daily performance and operational data.

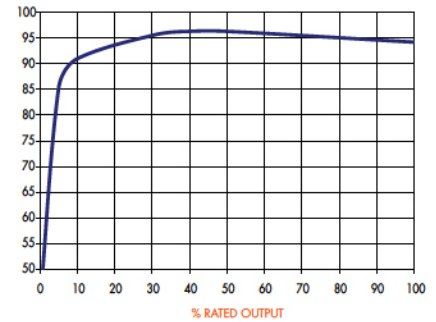
BENEFITS

- Single input section to process MPPT (430 – 880 VDC)
- NEMA 1 (IP23), (optional) NEMA 3R (IP44) ruggedized, sealed unit to withstand the harsh environmental conditions
- Compact size and high power density: 500 kW of output power in a box just 88"H x 41.5"W x 30.5"D
- Rear air-cooled heatsink keeps the unit cleaner and more efficient over time
- Isolation transformer (optional) is dependent upon utility interconnection
- High overload capability works up to 500 kW under most ambient conditions
- True Sine Wave Output
- Parallel up to 4 units for 2.0 MW capability
- Certified grid-connected operation according to international standards
- LCD display on the front to monitor the main parameters

BLOCK DIAGRAM



TYPICAL EFFICIENCY [%]



CHARACTERISTICS	PVI-500	PVI-1 MW
Power Rating (kW)	500	1000
DC Power Rating	520	1040
Open Circuit Voltage Range (Vdc)	430-1000 (640 nominal)	430-1000 (640 nominal)
Power Tracking Window Range (Vdc)	430-880 (640 nominal)	430-880 (640 nominal)
Array Configuration	One array	One array x2 with common negative grounding and independent MPPT
Nominal AC Voltage Range (Vms)	3-phase 300VAC (may be changed to comply with local regulations)	3-phase 300VAC (may be changed to comply with local regulations)
Nominal AC Frequency (Hz)	50/60	50/60
Line Power Factor	1	1
Maximum AC Line Current (Ams)	1069	2138
AC Current Distortion (%)	<3% THD at rated power	<3% THD at rated power
Max Efficiency (%)	>97	>97
Tare Losses (W)	<40	<40
Operating Ambient Temperature (°C)	-40 to +50	-40 to +50
Enclosure Environmental Rating	NEMA1/IP23 - NEMA 3R/IP44	NEMA1/IP23 - NEMA 3R/IP44
Relative Humidity	0 — 95% Non-condensing	0 — 95% Non-condensing
Elevation	Derated above 6,600ft (2,000m)	Derated above 6,600ft (2,000m)
Audible Noise (dBA)	<80	<80
Size (Inches)	88"H x 41.5"W x 30.5"D	88"H x 83"W x 30.5"D
Weight (Lbs)	3,250	6,500

MODEL SUMMARY AND ORDERING CODES

Model Number	Power
PVI-500-OUTD-US	500 kW
PVI-1 MW-OUTD-US	1 MW

Options Suffix	Description
-T	Transformer
-S	Switchgear Cabinet
-W	Weather Station