

# Ground Power Unit Products List

## Products List

1. VGPU
  - 1-1 (14Kwh)
  - 1-2 (25Kwh for Military)
  - 1-3 (28Kwh)
2. EV-GPU: one model 20Kwh (for Taiwan Luxgen n7 & common EV).
3. Large power GPU.

### 1-1 14Kwh GPU

### 14Kwh Ground Power Unit (GPU) Specification



#### 1. Application Scope

This product is Safety Ground Power Unit (GPU), This specification specifies the specifications, technical points, and safety precautions.

#### 2. Main Function

- (1). This product provides single phase AC120V/240V stable and sufficient voltage and capacity.

- (2). This product made with safety Lithium Iron Phosphate battery cell, No fire, No explosion.
- (3). This product provides overcharge voltage, overcharge current, low voltage, over temperature and short circuit of the safety protection. And various security mechanisms such as protection.
- (4). This product provides voltage equalization during charging.
- (5). This Product support to quickly charging and multi-charging mode of grid, solar, generator.
- (6). Battery BMS has the functions of providing sleep design, fault alarm and capacitance display. And have RS485 communication interface enables remote monitoring.
- (7). It complies with safety regulations such as UL-1642, BSMI, CE, UN38.3 (transport).

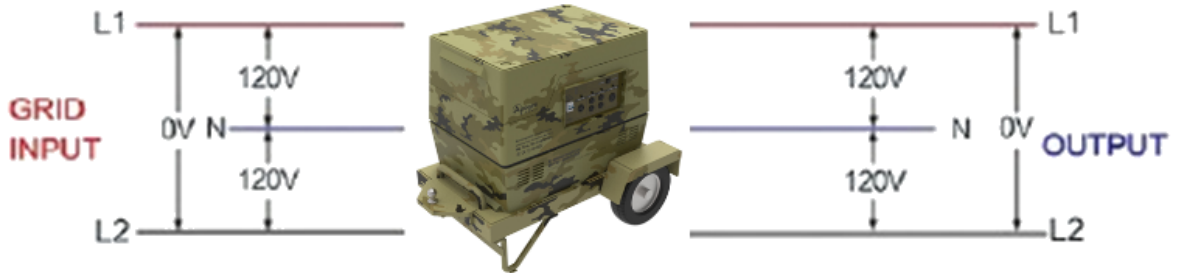
Nominal Battery System Voltage		48VDC
<b>INVERTER OUTPUT</b>	Rated power	8.0KW
	Surge rating(20ms)	24KW
	Capable of starting electric motor	4HP
	Waveform	Pure sine wave / same as input (bypass mode)
	Nominal output voltage RMS	240V / 120V
	Output frequency	50Hz \ 60Hz ± 0.3Hz
	Inverter efficiency (peak)	>88%
	Line mode efficiency	>95%
	Power factor	1.0
	Typical transfer time	20ms(max)
<b>AC INPUT</b>	Voltage	220V / 230V / 240V
	Selectable voltage range	90-280 VAC (APL)
	Frequency range	50Hz \ 60Hz
<b>BATTERY</b>	Low battery voltage cutoff	40VDC
	Low battery voltage recover	42VDC
	High battery voltage cutoff	58.4VDC
	High battery voltage recover	56VDC
	Idle consumption-search mode	<60W when power saver on
	Capacity	14.4KWh
	Rate Continuous Current	273A
	Max Continuous Current	546A
	Max Charge Current	273A
<b>AC CHARGER</b>	Output voltage	57.6V
	Charger AC input breaker rating	80A
	Overcharge protection S.D.	62.8VDC
	Maximum charge current	100A
<b>BYPASS &amp; PROTECTION</b>	Input voltage waveform	Sine wave (grid or generator)
	Nominal input frequency	50Hz or 60Hz
	Overload protection (SMPS Load)	Circuit breaker
	Output short circuit protection	Circuit breaker
	Bypass breaker rating	63A
	Max bypass current	80Amp
<b>SOLAR CHARGER</b>	Maximum PV charge current	100A
	DC voltage	48V
	Maximim PV array power	5000W(10000W for 200A optional)
	MPPT range @ operating voltage (Vdc)	64~147VDC
	Maximum PV array open circuit voltage	147VDC
	Maximum efficiency	>98%
	Standby power consumption	<2W
<b>OTHER</b>	Operation temperature range	0°C to 40°C
	Storage temperature	-15°C to 60°C
	Audible noise	60dB MAX
	Display	LED+LCD

1-2 25Kwh GPU for Military.

25Kwh Ground Power Unit (GPU) Specification



**Single Phase L1-N/L2-N=120V**



**Split Phase L1-L2=240V**



**Single Phase /3-Phase L1-L2=208V**



Nominal Battery System Voltage		48VDC
<b>INVERTER OUTPUT</b>	Continuous Output power	15KW
	Output frequency	50Hz \ 60Hz auto-sensing
	Output Wave Form	Pure Sine Wave
	AC output Mode	120Vac (L-N) / 240Vac (L1-L2) / 208Vac (L1-L2 3-Phase)
	Max bypass current	40A
	Max Efficiency	➤ 90%
	Max Utility Charge Current	60A
<b>AC INPUT</b>	Voltage	110V /120Vac (Phase to neutral)
	Selectable voltage range	90-280 VAC (APL)
	Frequency range	50Hz \ 60Hz
<b>BATTERY</b>	Low battery voltage cutoff	40VDC
	Low battery voltage recover	44.8VDC
	High battery voltage cutoff	58.4VDC
	High battery voltage recover	56VDC
	Max Utility + Solar Charge Current	200A (0.4C)
	Capacity	25KWh (52.8V 468Ah)
	Standard Continuous Discharge Current	468A @1C
	Max Charge Current	468A
<b>AC CHARGER</b>	Output voltage	57.6V
	Charger AC input breaker rating	80A
	Overcharge protection S.D.	62.8VDC
	Maximum charge current	100A
<b>BYPASS &amp; PROTECTION</b>	Input voltage waveform	Pure Sine wave (grid or generator)
	Nominal input frequency	50Hz or 60Hz
	Overload protection (SMPS Load)	Circuit breaker
	Output short circuit protection	Circuit breaker
	Bypass breaker rating	63A
	Max bypass current	80Amp
<b>SOLAR CHARGER</b>	Number of PV input	2
	Maximum PV charge current	160A (80A x 2)
	Maximum PV Input power	8000W (4000W each input)
	MPPT range @ operating voltage (Vdc)	60~110VDC
	Maximum PV array open circuit voltage	145VDC
<b>OTHER</b>	Operation temperature range	0°C to 40°C
	Storage temperature	-15°C to 60°C
	Audible noise	60dB MAX
	Display	LED+LCD

1-3 28Kwh GPU for Military.

28Kwh Ground Power Unit (GPU) (dimension variety)



2. EV-GPU: one model 20Kwh (for Taiwan Luxgen n7 & common EV).

20Kwh EV-GPU. Model No.: APEVG20000



### Brief description:

1. Support CCS1, CHAdeMO.
2. Support Smart charging & Load balancing.
3. Efficacy > 94%.
4. PF> 0.99 ( APFC ) .
5. OCPP1.6 JSON.
6. IK10 ( Screen and RFID module not included ) , IP55.
7. Built-in 20KWh explosion-proof Lithium Iron Phosphate safety energy storage system , and provide DC 30KW electric vehicle fast charging service.
8. Photovoltaic solar input for motorization to supplement battery power.
9. Safety Security:
  1. AC Input: OVP, OCP, OPP, OTP, UVP, RCD, SPD
  2. DC Output: OCP, OVP, UVP, OTP, IMD.
  3. Battery: OV, UV, OC, SC, and abnormal temperature safety protections.

### Applications:

- Highway gas station/service area
- Parking garage
- EV dealer workshops
- Commercial fleet operators
- EV infrastructure operators / service providers.
- Roadside assistance.



## (EV-GPU) Specification V1-20231102

<b>AC Input</b>	Rate AC Voltage	1Φ 220V
	Rate AC Current	100A (0.5C)
	Frequency (Hz)	50Hz/60Hz
<b>DC Output</b>	Output Voltage Range	CHAdEMO:150~500Vdc / CCS:150~950Vdc
	Max. Output Current	CHAdEMO:60A@500Vdc CCS:31.5A@950Vdc
	Max. Output Power (kW)	30kW
	Voltage Accuracy (%)	±2%
	Current Accuracy (%)	±2%
	<b>AC Output</b>	Single phase 110V
<b>Solar PV input</b>	Maximum PV Array Power	5000W
	Maximum PV Charge Current	80A ±4A
	MPPT Range @ Operating Voltage	60~130VDC
	Maximum PV Array Open Circuit Voltage	145VDC
	Standby Power Consumption	<2W
<b>Battery</b>	Battery material	Safety Lithium Iron Phosphate Battery
	Battery type	26650 cylinder cell
	Capacity	23KWh
	Max Charge Current	200A
	Battery Security Certify	UL1642 、 IEC62133
<b>User Interface &amp; Control</b>	Display	7" LCD
	Push Buttons	Operation buttons
	User Authentication	RFID: support ISO 14443A/B, ISO 15693, FeliCa Lite-S (RCS966) OCPP, 2D barcode, APP, Mobile payment
<b>Communication</b>	External	Ethernet/4G/Wi-Fi
	Internal	CAN bus/RS485
<b>Environmental</b>	Operating Temperature (°C)	-30° C~50° C, power derating from 50° C and above
	Humidity (%)	5%~95% RH, non-condensing
	Altitude (m)	≤ 2000m
	IP Level	IP55/IK10 (not including screen and RFID module)
	Cooling method	Fan cooling
<b>Mechanical</b>	Dimension (WxDxH mm)	1400mmx930mmx1400mm
	Weight (kg)	343 Kg.
	The Cable Length of Charging Connector (m)	4m
<b>Protection</b>	Input Protection	OVP, OCP, OPP, OTP, UVP, RCD, SPD
	Output Protection	OCP, OVP, UVP, OTP, IMD
	Battery	OV, UV, OC, SC, and abnormal temperature safety protections
<b>Regulation</b>	Certificate	UL 2202, UL 2231-1/-2
	Safety	NRTL - cETLus
	Charging Interface	CHAdEMO V1.2, DIN 70121

### 3. Large Power GPU (100Kwh ~ 250Kwh) For Military Spec.

(Spec & Dimension will be discussed and defined)

