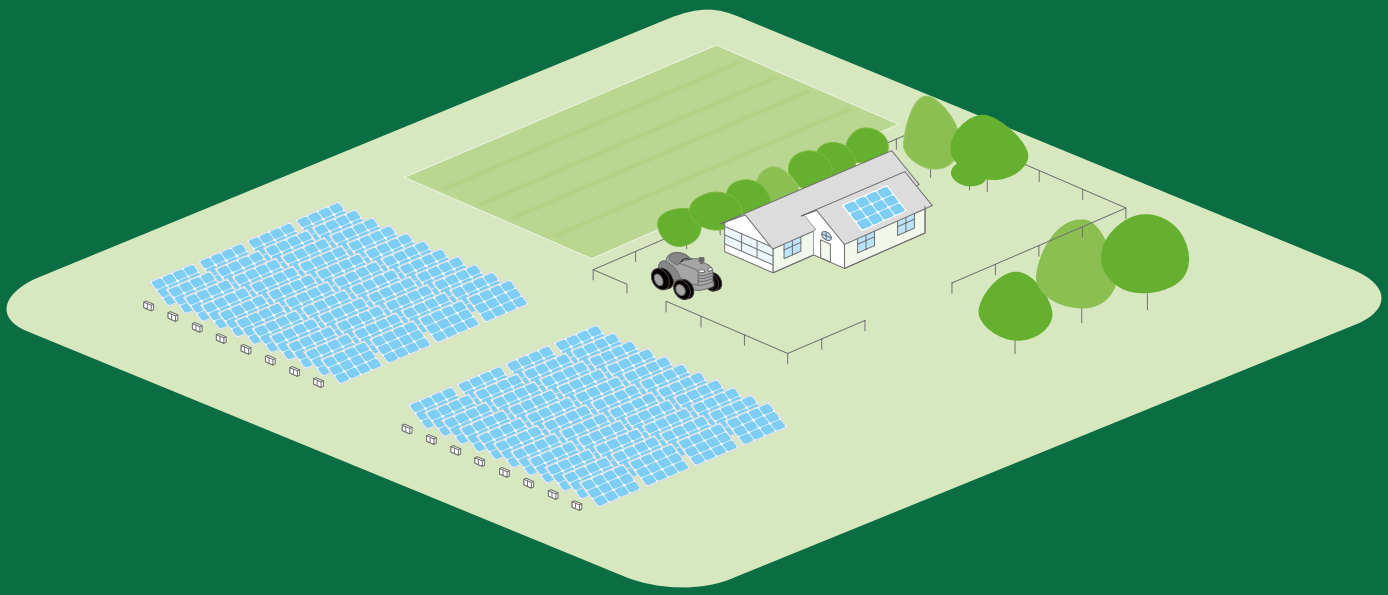
COMPLETE SOLAR POWER SYSTEM

COMMERCIAL HYBRID PHOTOVOLTAIC SOLAR SYSTEM



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Sunpal

COMMERCIAL HYBRID

30KW-50KW-100KW-120KW-150KW

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Product Description

Hybrid Solar System(also called solar storage system) is kind of micro-grid solution.Sunpal Power has carefully designed and engineered our hybrid solar power systems to be faster and easier to install.Our hybrid solar power system produce zero emissions,are noiseless,and easy for installation.

Standard Grid-tie systems will not provide electricity directly to your house during a power outage due to safety regulations(anti-islanding) even if the solar modules are producing DC current. Hybrid solar systems can be independent of the standard utility grid,and can typically deliver the equivalent expectaions of the traditional grid.

Whether you will be using hybrid solar system for your remote cabin,your place of business,or your full-time residence,Sunpal Power has an hybrid solar solution that can fit almost any installation requirement.

Product Benefits

- Become completely energy independent
- Reduce the burning of fossil fuels for a healthier environment
- Eliminate the problems of grid blackouts

Common Application

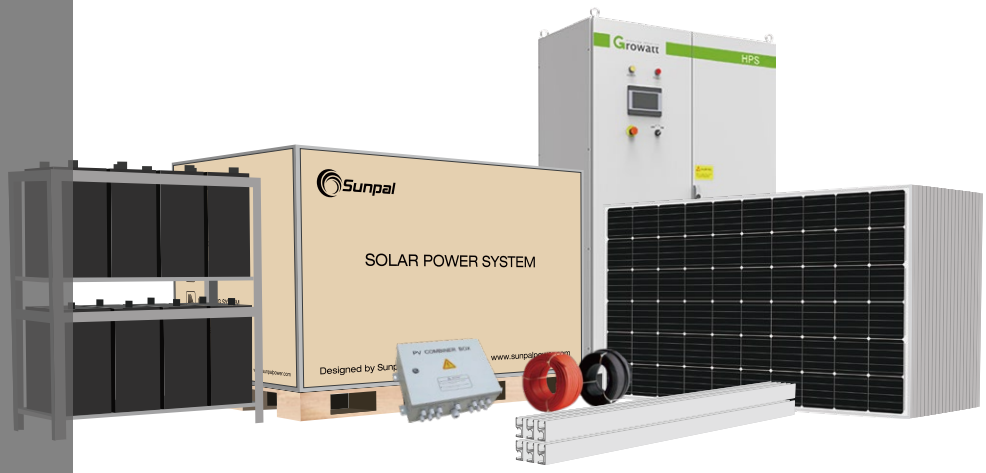
- Installation sites where bringing in the electricity from the grid is too expensive or difficult
- Locations where liquid fuel costs are too high or difficult to maintain
- Those looking to be completely independent from the grid
- Those who cannot afford to lose power or have power outages

HYBRID SOLAR SYSTEM

PV System

Include

- Solar modules
- Hybrid solar inverter
- Battery bank
- PV combiner box
- PV mounting system
- Battery bank rack
- PV,battery bank & ground wiring harnesses
- Wire managerment kits



PRODUCT MODEL	SP30KW3-HY	SP50KW3-HY	SP100KW3-HY	SP120KW3-HY	SP150KW3-HY
PV System Size Nominal (Inverter Power) (kW)	30	50	100	120	150

PV MODULE SPECIFICATIONS (*Mono)	
Power (W)	280
Vmp (V)	31.8
Voc (V)	38.8
Isc (A)	9.33
Imp (A)	8.81
Dimensions (L x W x H) (mm)	1650*992*35
PV Module weight (kg)	18.6
Certifications	CE / TUV (IEC 61215 & IEC 61730) / UL (UL1703)

*Polycrystalline PV modules also available up on request

INVERTER/CHARGER SPECIFICATIONS					
Rated Output Power (kW)	30	50	100	120	150
Apparent Power (kVA)	33	55	110	132	165
Transformer	Yes				
AC Voltage	3/N/PE, 360V - 440V				
AC Frequency (Hz)	50 / 60				
Battery Voltage (V)	420				
MPPT Charge Current (A)	85	142	285	340	425
PV Input Power (W)	30000	50000	100000	120000	150000
PV MPP Voltage Range (V)	480 - 800				
Protections	Input over/under voltage, output over/under voltage, overload, short circuit over temperature, reverse polarity, lightning surge protection				
Standby Consumption	< 30W				
Display	Touch screen				
Dimensions (W x H x D) (mm)	950 x 750 x 1860	950 x 750 x 1860	1200 x 800 x 1900	1200 x 800 x 1900	1400 x 800 x 1900
Inverter Weight (kg)	440	620	900	1024	1250

BATTERY BANK SPECIFICATIONS					
Battery Type	Lead-acid gel				
Battery Voltage (V)	2				
Battery Bank Voltage (V)	420				
*Battery Current (Ah)	200	400	600	800	1000
*Battery Bank Current (Ah)	200	400	600	800	1000
*Battery Bank Power - Total (Wh)	84000	168000	252000	336000	420000
*Battery Bank Power - 50% DOD (Wh)	42000	84000	126000	168000	210000
Battery Dimensions (L x W x H) (mm)	172.5 x 110 x 351	211 x 176 x 353	302 x 175 x 353	409 x 175 x 353	475 x 174 x 351
Battery Weight (kg)	14	26	37	50	62
Full Cycles (50% DOD)	1800				
Total Batteries - *storage can be increased	210				
Connection	Series				
Certifications	CE / RU / ISO 14001 / OHSAS 18001				

*Battery capacity is shown for reference only,actual capacity should be designed based on the actual power usage.

BOS					
PV Combiner Box (Type / #)	5 to 1 / 1	8 to 1 / 1	16 to 1 / 1	10 to 1 / 2	12 to 1 / 2
*PV Wire Harness - 4mm² (m)	500	800	1600	2000	2400
*DC Wire (Combiner Box to Inverter)	16m² / 100m	25m² / 100m	35m² / 100m	25m² / 100m	25m² / 100m
*Ground Wire - 4mm² (m)	100	200	400	500	600
PV Mounting System	Customized				
Battery Bank Rack	Customized				

*Extra wire is available up request

SYSTEM LAYOUT						
Number of Modules		105	168	336	420	504
Number of Inverters		1				
PV Array Surface Area (m²)		178.5	285.6	571.2	714	856.8
PV Array Weight (kg)		1953	3124.8	6249.6	7812	39374.4
PV Module String Configuration	No. of PV Modules / String	21				
	Total Strings	5	8	16	20	24
	String Voc (V)	814.8				
	String Vmp (V)	667.8				
	String Imp (A)	8.31				

PRODUCTION ESTIMATES (kWh AC)					
*Projectd Yearly Output at 4 PSH / Day	100.0	159.9	319.9	398.4	479.8
*Projectd Yearly Output at 5 PSH / Day	125.0	199.9	399.8	499.8	599.8
*Projectd Yearly Output at 6 PSH / Day	149.4	239.9	479.8	599.8	719.7

*Based on 85% system efficiency (formula = DC Power x Peak Sunshine Hours / Day x System Efficiency) (PSH = Peak Sunshine Hours)

SYSTEM OPTIONS	
Monitoring Device	RS485
PV Module Type	Monocrystalline(Poly also available upon request)
Mounting System Types	Metal Roof,Asphalt Shingel,Tile Roof,Tin Roof,Flat Concerte,Ground
AC Back Up Input	Power Generator / Utility Grid
Battery	12V Gel / 2V Gel / Tubular Gel (OPzV)

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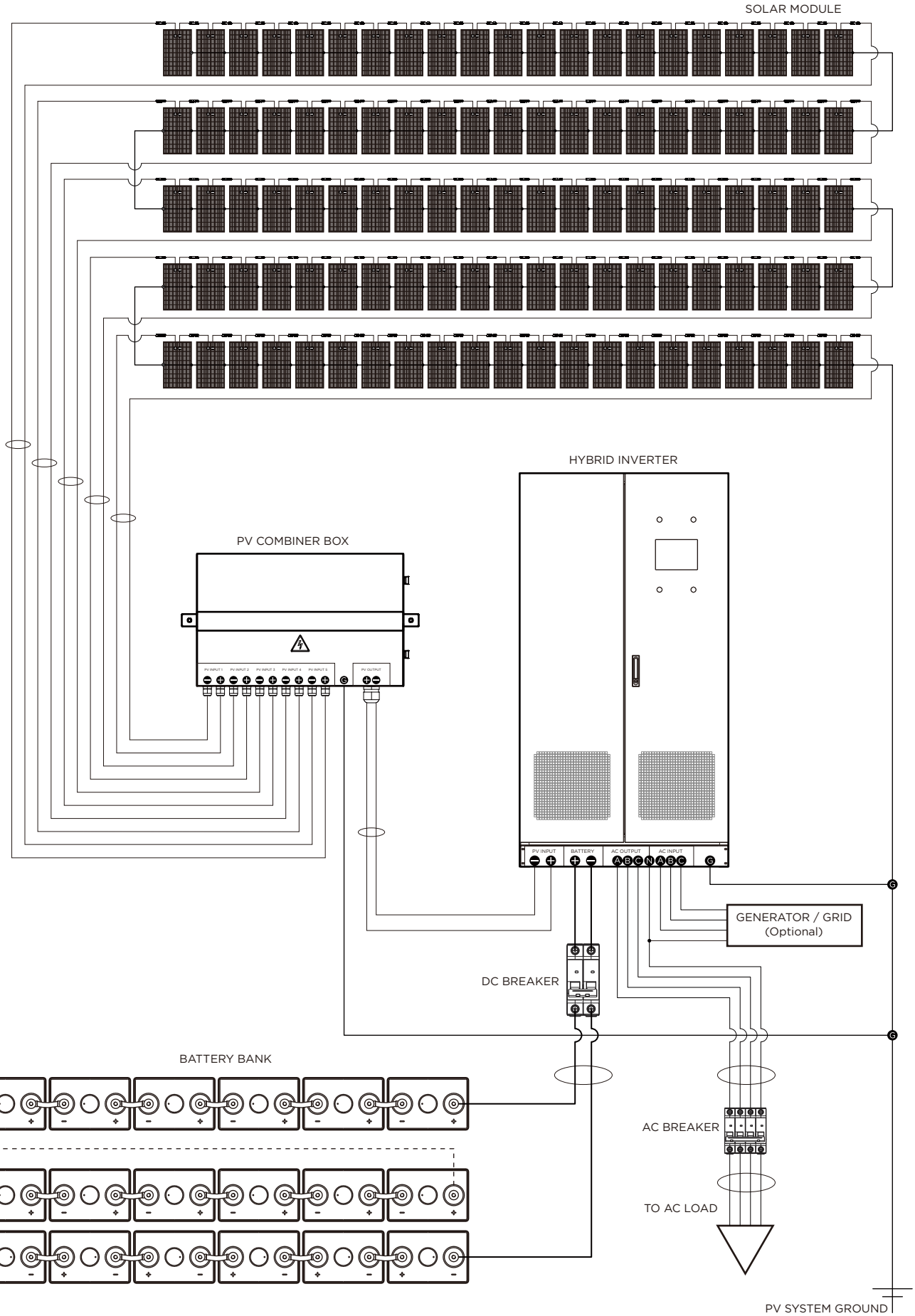
SP30KW3-HY



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