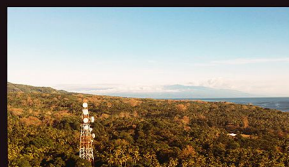


CONSNANT[®]

OUTDOOR INTEGRATED SOLAR & RECTIFIER POWER SYSTEM

CND48250



OUTDOOR POWER SYSTEM

Product Structure



Product Description

Consnant's CND48250 Outdoor Integrated Solar & Rectifier Power System is designed for outdoor telecommunication projects. It is usually used in corners of city, remote roads, mountainous areas, deserts, islands and other bad environments. Because those areas are widely distributed and difficult to reach, the combination of the solar photovoltaic power and the mains power becomes the best choice for the communication base stations there. The implementation of the photoelectric complementary solution in such unstable areas can successfully achieve the energy conservation and emission reduction targets, at the same time effectively improve the reliability of the power supply of the base stations.

Product Features

Multi-Energy Complementary Power Supply Solution

According to the site environment, access to different complementary power supply systems of solar energy, mains electricity, and generator.

Modular Design

The solar modules and rectifier modules adopt the modular hot-swappable design, flexible configuration, convenient expansion, and easy maintenance.

Excellent MPPT Function

Maximum power tracking accuracy is greater than 99.5%, system conversion efficiency is greater than 96% (solar mode).

Energy Saving Management Mode

Maximizes energy saving, according to the operation mode of the solar energy priority, mains (generator) supplement, and battery backup. Makes full use of green solar energy, achieving the purposes of energy saving and emission reduction.

Intelligent Battery Management

It has battery protection function, automatic voltage regulation, current limiting, battery capacity calculation, automatic equalizing and floating charge conversion, online battery test, ect. A series of complete battery management functions ensure long service life of batteries in harsh power grid environment.



OUTDOOR POWER SYSTEM

All-Round Lightning Protection

The system provides all-round lightning protection on the AC input side, solar input side, DC side, and signal side.

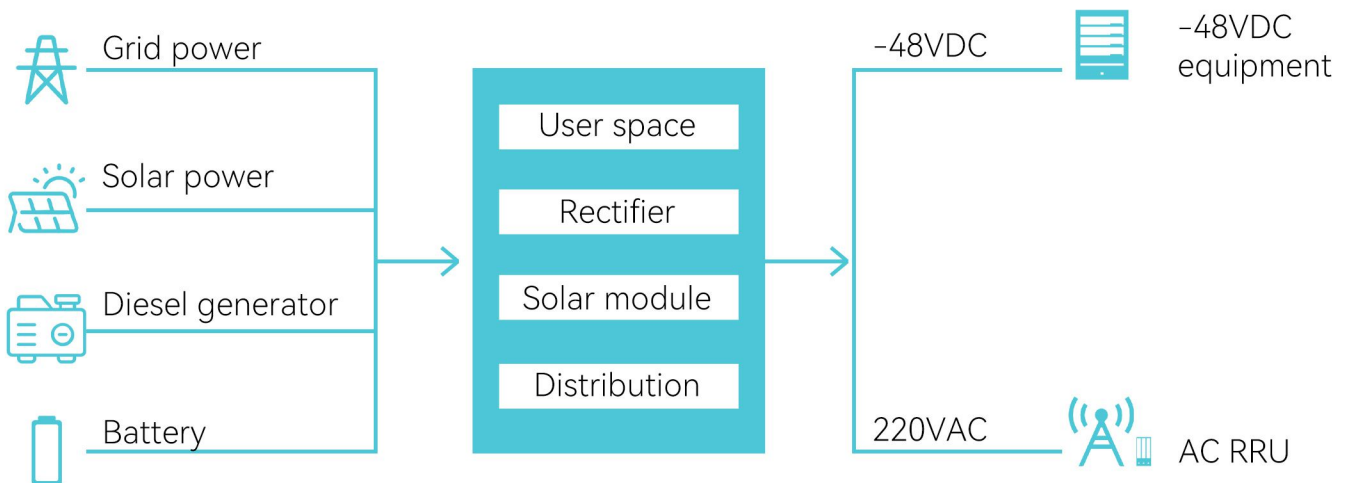
Protection Design

IP55 high protection grade cabinet and advanced temperature control design ensure reliable operation of the system in harsh outdoor environment.

Flexible Monitoring Networking

The system can realize local monitoring and remote monitoring control, providing dry contacts, CAN communication and RS232 intelligent ports. The monitoring unit uses centralized monitor to manage the solar module, mains power, rectifier, and generator.

Working Diagram



Working Mode

Normally, the power system runs in parallel floating charge state, that is, the rectifier module, solar module, load, and battery work in parallel. Solar modules and rectifier modules provide floating charge current for power communication devices and batteries. If the output power of the solar module is insufficient to feed all the loads, the rectifier module will provide supplementary power for the communication devices.

When the mains power is off, the rectifier module stops working. If the solar power supply is normal, the solar module will feed the communication devices and charge the battery. If the output power of the solar module is insufficient to feed all the loads, the battery will provide supplementary power for the communication devices.

When the mains power is off, the rectifier module stops working. If the solar energy fails at the same time, the communication devices will be powered by batteries. When the battery discharge continues for a period of time to the point of the generator start, the monitor sends start signal to the generator. Generator provides AC input power for the rectifier module, then the rectifier can supply power to the communication devices again and charge the battery to compensate for the consumption. When reaching the point of generator stop, the monitor unit sends out the stop signal to generator, and the generator turns off.

Technical Specification

Model	CND48250	
System Cabinet		
Cabinet	External Dimension	W*D*H = 600*600*1200 mm (without air conditioner) W*D*H = 600*740*1200 mm (with air conditioner)
	Material	SPCC cold rolled steel (standard), Galvanized Steel / Stainless Steel / Aluminium / Color Steel Sandwich Panel (optional)
	User Space	6U
	Maintenance Mode	Operated and maintained from the front
	Protection Level	IP55/IP56
	Weight	≤ 200kg (without rectifier and battery)
Rectifier Module	Size	W*D*H = 85.3*287*132.3(3U) mm
	Weight	3.5kg
Solar Module	Size	W*D*H = 42*285*135(3U) mm
	Weight	3kg
Power System		
AC Input	AC Input Mode	Single-phase / Three-phase (220V)
	Input Voltage Range	85Vac ~ 300Vac
	Max. Input Current	20A
	Input Frequency Range	45Hz ~ 66Hz
Rectifier Output	Output Voltage	53.5Vdc
	Adjustable Output Voltage Range	42Vdc ~ 58Vdc
	Rated Current	50A
	Rectifier Peak Current	56.1A @53.5V
	Maximum Rectifier Output Power	3000W (176Vac ~ 290Vac)
	Rectifier Quantity	2 ~ 5
	Rectifier Standby Power Consumption	≤ 4W
Solar Input & Output	Rectifier Efficiency	> 96%
	Rated Input Voltage	68Vdc
	Input Voltage Range	60Vdc ~ 150Vdc
	Max. Input Current	≤ 62A (single input)
	Max. Static Voltage Tolerance (when not working)	165Vdc
	DC Output Voltage Range	42V ~ 58V
	DC Output Current	0 ~ 61A
	Voltage Stabilization Accuracy	≤ ±0.6%
Load Regulation	≤ ±0.5%	
Temperature Control		
Cooling	Single or dual fan (optional) / 48Vdc/100W/IP44/PWM with temperature regulation)	
	500W 1000W 1500W AC/DC air conditioner (optional)	
	500W 1000W heat exchanger (optional)	
Heating (Optional)	Heater (500W)	
Environmental Conditions		
Working Temperature	-40°C ~ +55°C (heater / air conditioner)	
Storage Temperature	-40°C ~ +70°C	
Relative Humidity	5% ~ 95%	
Altitude	≤ 2000m (Derate above 2000m)	