

# ZEUS APPOLLO™

## Z21 Hybrid Series

### Efficiency

- ⚡ Maximum efficiency up to 97.6%
- ⚡ European efficiency up to 97.0%
- ⚡ MPPT efficiency up to 99.9%
- ⚡ Dual MPPT design

### Safety

- ⚡ IP65 Protection (Suitable for indoor and outdoor use)
- ⚡ 45°C full-load output and wide ambient temperature range

### Features

- ⚡ Up to 4600W of charge and discharge capability
- ⚡ Reactive power control
- ⚡ Emergency backup output (UPS) that provides up to 6900W of power during a power outage (4.6kW model)
- ⚡ Programmable charge times and load prioritisation
- ⚡ Receive email notifications in the event of a fault
- ⚡ Zero export function inbuilt



## Z21 Series Hybrid Inverter + Energy Storage System

The new Zeus Appollo Z21 hybrid inverter with a battery storage system is suitable for both on-grid and emergency back-up PV applications. The Z21 series allows the user to charge the battery during the day and draw from it whenever it is needed for an even more energy efficient and cost effective solution for your premises. Being a fully programmable hybrid inverter, the Z21 allows the user to determine whether the electricity generated is to be consumed, stored or fed back into the grid. With the added programmability of charging the battery storage system from the grid and multiple communications and monitoring options, the management of your solar generation has never been easier. With Zeus Appollo, we put you in full control of your solar needs.

# Technical data

## Z21I3K6D48/Z21I4K6D48



Inverter Model	Z21I3K6D48	Z21I4K6D48
<b>Battery Input Data</b>		
Battery Type <sup>1</sup>	Li-Ion	Li-Ion
Nominal Battery Voltage (V)	48	48
Battery Voltage Range (V)	40-60	40 ~ 60
Max. Continuous Charging Current (A) <sup>1</sup>	75	100
Max. Continuous Discharging Current (A) <sup>1</sup>	75	100
Max. Charging Power (W)	3600	4600
Max. Discharging Power (W)	3600	4600
<b>PV String Input Data</b>		
Max. Input Power (W)	4600	6500
Max. Input Voltage (V)	580	580
MPPT Operating Voltage Range (V)	125-550	125 ~ 550
Start-up Voltage (V)	125	125
Nominal Input Voltage (V)	360	360
Max. Input Current per MPPT (A)	14	14
Max. Short Circuit Current per MPPT (A) <sup>4</sup> Number of MPP Trackers	17.5	17.5
Number of Strings per MPPT	2	2
Number of Strings per MPPT	1	1
<b>AC Output Data (On-grid)</b>		
Nominal Apparent Power Output to Utility Grid (VA)	3680	5000
Max. Apparent Power Output to Utility Grid (VA) Max.	3680	5000
Apparent Power from Utility Grid (VA) Nominal	7360	9200
Output Voltage (V)	230	230
Output Voltage Range (V)	0 ~ 300	0 ~ 300
Nominal AC Grid Frequency (Hz)	50/60	50 / 60
Max. AC Current Output to Utility Grid (A)	16	24.5
Normal AC Current Output to Utility Grid (A)	16	24.5
Max. AC Current From Utility Grid (A)	32	40
Power Factor	~1 (Adjustable from 0.8 leading to 0.8 lagging)	
Max. Total Harmonic Distortion	<3%	<3%
<b>AC Output Data (Back-up)</b>		
Back-up Nominal Apparent Power (VA)	3680	4600
Max. Output Apparent Power (VA) <sup>2</sup>	3680 (5520@10sec)	4600 (6900@10sec)
Max. Output Current (A)	16	20
Nominal Output Voltage (V)	230 (±0.2%)	230 (±0.2%)
Nominal Output Frequency (Hz)	50/60 (±0.2%)	50/60 (±0.2%)
Output THDv (@Linear Load)	<3%	<3%
<b>Efficiency</b>		
Max. Efficiency	97.60%	97.60%
European Efficiency	97.00%	97.00%
Max. Battery to AC Efficiency	94.00%	94.00%
MPPT Efficiency	99.90%	99.90%
<b>Protection</b>		
PV Insulation Resistance Detection	Integrated	Integrated
Residual Current Monitoring	Integrated	Integrated
PV Reverse Polarity Protection	Integrated	Integrated
Anti-islanding Protection	Integrated	Integrated
AC Overcurrent Protection	Integrated	Integrated
AC Short Circuit Protection	Integrated	Integrated
AC Overvoltage Protection	Integrated	Integrated
<b>General Data</b>		
Operating Temperature Range (°C)	-25~+60	-25 ~ +60
Relative Humidity	0-95%	0 ~ 95%
Max. Operating Altitude (m) Cooling Method	3000 Natural Convection	3000 Natural Convection
User Interface	LED & APP	LED & APP
Communication with BMS <sup>3</sup>	RS485; CAN	RS485; CAN
Communication with Meter	RS485	RS485
Communication with Portal Weight (kg)	WiFi 28	WiFi 30
Dimension (W x H x D mm) Noise Emission (dB)	516 x 440 x 184 <25	516 x 440 x 184 <25
Topology	Non-isolated	Non-isolated
Ingress Protection Rating Mounting Method	IP65 Wall Mounted	IP65 Wall Mounted
Country of Manufacture	China	China

\*1: The actual charge and discharge current also depends on the battery.

\*2: Peak output apparent power can be reached only if PV and battery power is enough.

\*3: CAN communication is configured by default. If 485 communication is used, please replace the corresponding communication line.

\*4: Short Circuit Current per MPPT (A) please refer to 'Manufacturer declaration: short circuit current'.

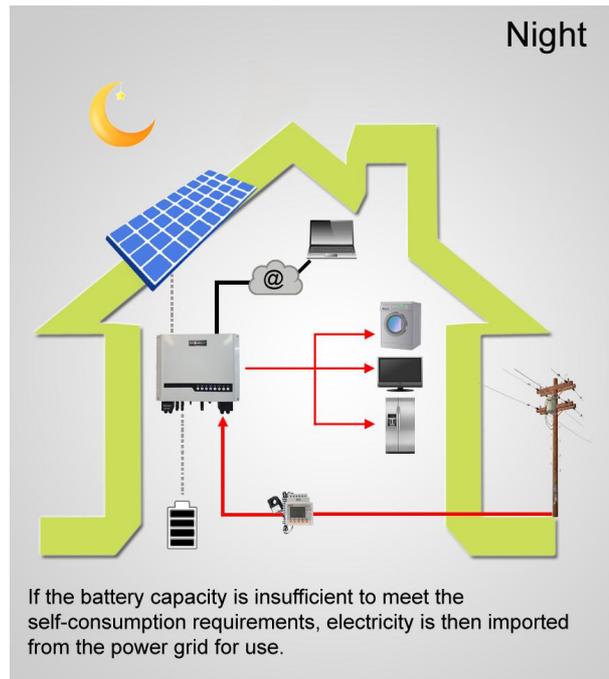
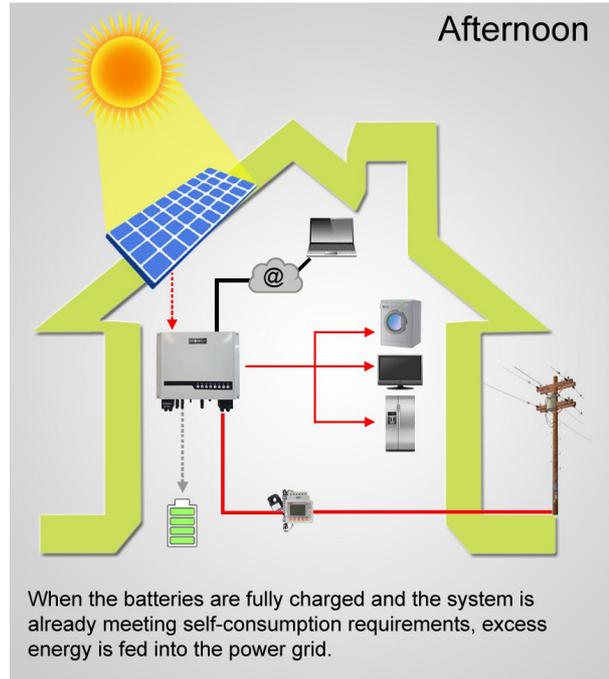
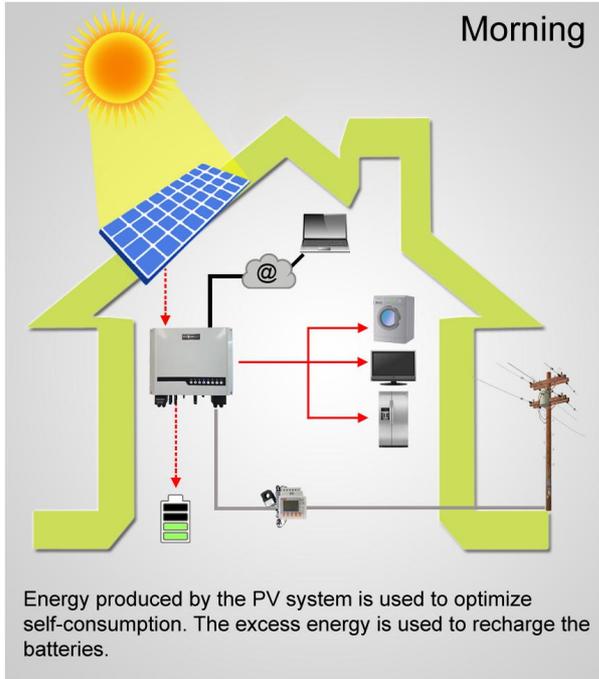
\*: Under off-grid mode, then battery capacity should be more than 100Ah.

\*: When there is no battery connected, inverter starts feeding in only if string voltage is higher than 200V. \*:

AFDPF: Active Frequency Drift with Positive Feedback, AQDPF: Active Q Drift with Positive Feedback.

# ZEUS APPOLLO™ Z21 Hybrid Series

## How It Works



- - - - - DC, Current
- - - - - DC, No Current
- — — — AC, Current
- — — — AC, No Current

## Z21 Series Hybrid Inverter + Energy Storage System

Zeusappollo-Z21 Series Single page-20220907-EN-V2.0. Information may be subject to change without notice during product improving