



ADDO
THE KING.



INVERTERS

HOME & COMMERCIAL

PURE SINE WAVE TECHNOLOGY



OPAL
HOME

Range : AHU/975 - AHU/10000

ABOUT US



The Eastman Global group began its journey in the year 1970 with presence in over 105 countries and a 2200+ loyal distributor and dealer network across the world. We have been recognized among the global leaders in the Energy, Industrial, Manufacturing. Eastman Auto & Power Limited instituted by Eastman group is a leading manufacturer of Tall Tubular Batteries, Tubular Gel SMF Batteries, Solar Batteries, E-Rickshaw Batteries and offers a wide range of inverters, solar panels and top of the line solar products that are widely known for their innovative technology.

HIGHLY QUALIFIED PERSONNEL

Our quality control team constantly strives to monitor every aspect of business to assure satisfaction for our valued customer.

WORLD CLASS MANUFACTURING FACILITIES

Each product manufactured by us is created in our state-of-the-art manufacturing facility. Our highly functioning research and development cell works to produce the very best for the end user.

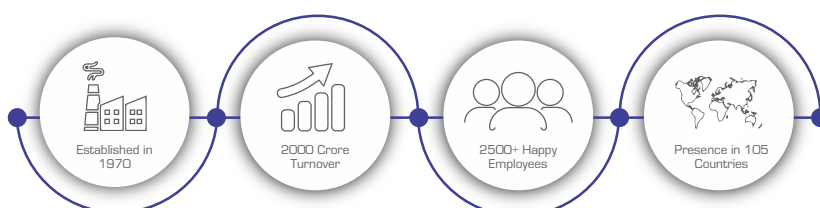
RELIABLE PARTNERSHIP ABILITIES

Our company believes in providing the best experience and commitment to the customers as well as the suppliers. All the services and process are crafted and to full fill the requirements of our partners.

STRONG INTERNATIONAL PRESENCE

As a globally diverse company, Our network spans over 105 countries and 4 continents. We have a customized product range to cater to the exports market with the best

OUR ACHIEVEMENTS



PURE SINEWAVE INVERTER - HOME



OPAL
HOME



FEATURES

- * Single Card Reliability with DSP Technology.
- * Multi Color LCD Display.
- * Frequency Available : 50/60Hz.
- * Smart Battery Charging with Setable all Parameters.
- * Best Regulated Output.
- * Sine wave Output.
- * Battery Charging at Low Voltage.
- * Maintain Battery Health for Longer Life.
- * Easy Installation and Low Maintenance.
- * Protections : RBP, OVL, BL, OBC, SC, IHV, ILV & Lightening.
- * Compatible with DG as an Input Source.
- * Compatible for Computer Load.
- * Compatible with SMF, Gel & Tubular Batteries.

No	Model No	Voltage	System Dimension (LxWxH in mm)
1	AHU/975/12	12	260*306*116
2	AHU/1175/12	12	260*306*116
3	AHU/1675/24	24	260*306*172
4	AHU/2200/24	24	266*306*214
5	AHU/4000/48	48	311*306*298
6	AHU/5500/48	48	336*306*388

TECHNICAL SPECIFICATION

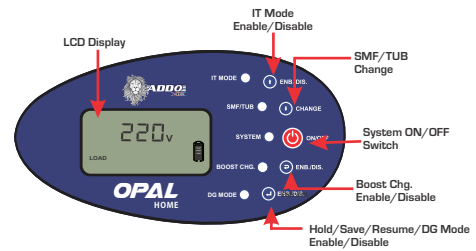
Parameters		Rating						
Model Name		AHU/975/12	AHU/1175/12	AHU/1675/24	AHU/2200/24	AHU/4000/48	AHU/5500/48	
Operating DC Voltage		12V		24V		48V		
Switching Element		MOSFET						
Charger Topology		Boost Mosfet						
Parameters (Grid)		Default Value						Variable Range (Each Batt.)
Nominal Grid Voltage		230V AC						
Nominal Frequency		50Hz						
Frequency Range		45-55Hz ± 2Hz						
Battery Charging Method 4 Stages		Bulk/Absorption/Float/Equalize						
Grid - Battery Charging Voltage (TUB) Default mode	Boost	14.4V±0.2V (Each Battery)						13.8V-15V
	Float	13.8V±0.2V (Each Battery)						13V-14.2V
Grid - Battery Charging Voltage (SMF)	Boost	14.2V ±0.2V (Each Battery)						13.5V-14.2V
	Float	13.8V ±0.2V (Each Battery)						13.5V-14.2V
Grid-Batt. Chg. Volt. Equalize		After 30 Days						NA
Grid-Batt. Chg. Current	Normal	15A ±2A						1A-20A
	Boost	18A ±2A						
Grid Low Cut Voltage		170V±10V						
Grid Low Cut Recovery	IT MODE ENABLE	180V ± 10V						
Grid High Cut Voltage		265V ± 10V						
Grid High Cut Recovery		255V ± 10V						
Grid Low Cut Voltage	IT MODE DISABLE	100V ± 10V						
Grid Low Cut Recovery		110V ± 10V						
Grid High Cut Voltage		290V ± 10V						
Grid High Cut Recovery		280V ± 10V						
DG Mode	ENABLE/DISABLE	Disable						
Change Over (Batt. to Mains)	IT MODE ENABLE/DISABLE	<5ms						
Change Over (Mains to Batt.)		<12ms						
Parameters (Battery Mode)								
Output Phase		1Phase, 3Wire						
Output Waveform		Sinewave						
Nominal Output Voltage		220V±8%						
Nominal Frequency		50Hz ±1%						
Maximum Output Current (±0.2A)		2.1A	2.9A	4.3A	5.6A	10A	17A	
Batt. Low Buzzer		10.8V±0.2V (Each Battery)						Batt LC+0.3V
Batt. Low Cut		10.5V±0.2V (Each Battery)						10V-11.5V
Batt. High Cut		16.5V±0.2V (Each Battery)						16.5V-17.5V
Typical Efficiency		≥80%			≥82%			
Voltage Harmonic		<3% (Linear Load)						
Over Load Capacity	IT MODE DISABLE	>110% 3-Times Auto Reset with 30Sec. Delay and 4th Time Shut Down						
	IT MODE ENABLE	>110% Shut down after 30Sec. Delay (1st time)"						
		>150% Output goes down						
Protection		Overload, Battery Low, Battery High, Output Short Ckt, Battery Reverse, Over Heat @90°C ± 10°C , Over/Under frequency, I/P HV, I/P LV, Lightening.						
LED Indication		System ON, (IT Mode, SMF/TUB, Boost Charging, DG Mode) Enable/Disable						
Switches		Reset for System ON/OFF, UP, Down, Back, Enter (for LCD Configuration)						
Display		Battery Voltage, Charging Current, Grid Voltage, Grid Frequency, Output Voltage, Output Frequency, Load %, Battery Graph, Overheat,BLK/ABS/FLT.						
Parameters (Environment)								
Operating Temperature		0-50°C						
Cooling		Fan						
Max. Relative Humidity @ 25°C (non condensing)		95%						
Noise @ 1meter		50dB						
Standard Compliance		IP20						
System Dimension (LxWxH in mm)		260*306*116	260*306*172	266*306*214	311*306*298	336*306*388		

*Specification are subject to change without prior notice due to constant improvement in design & technology.

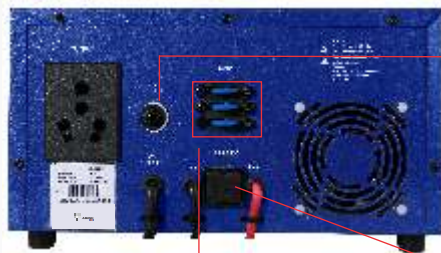
PURE SINEWAVE INVERTER - HOME



- User friendly front panel



Provides an extra layer of protection of your devices



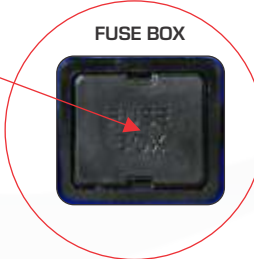
Metal Oxide Varistor
Protect against transient over voltages



AC Reset

Available In
AHU975/12, AHU1175/12,
AHU1675/12

PRESS TO
RESTART



FUSE BOX

DC Fuse PROTECTION

Available In
EHU975/12, EHU1175/12,
EHU1675/12

Main By-pass
Switch

MCB

Rotary Switch
- bypass switch



- Opal - Series is equipped with MCB (Miniature Circuit Breaker) / Resettable Fuse
- Protects the Systems and application from overload and short circuits
- Increases the battery life and all application attached

MCB
Available in AHU2200/24V, AHU4000/48V, AHU5500/48V



PURE SINEWAVE SMART INVERTER - COMMERCIAL



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FEATURES

- * DSPic based design Pure Sine Wave Output.
- * Configurable charging voltage and current.
- * Display - LCD 16x2.
- * SCR Based change over.
- * Four stage battery charging profile.
- * Tubular/SMF/Flooded Battery profile. Fast charging profile.
- * Frequency Available in :- 50Hz
- * Input range selection.
- * Maintain battery health for longer life.
- * Compatible with Generator as an input source.
- * Compatible with IT load.
- * Easy Installation and Low Maintenance. Robust Design - 20Year.

No	Model No	Voltage	System Dimension (LxWxH in mm)
1	AHU/7500/120	120	609*330*584
2	AHU/10000/120	120	609*330*584

TECHNICAL SPECIFICATION

PARAMETERS		RATING	
Model Name	AHU/7500/120V	AHU/10000/120V	
Operating DC Voltage	120V		
Control	DSPic Controller with PWM		
INPUT PARAMETERS		CONFIGURABLE	DEFAULT
Input AC	Single Phase 3 wire		
Nominal AC Input	220V / 50.0Hz		
Grid Low Cut Voltage (IT Mode-Enable/Disable)	NA/120-200	175/120	
Grid High Cut Voltage (IT Mode-Enable/Disable)	NA/245-280	260/280	
AC Input Freq. Range	47 to 53Hz		
Settable Battery Type	SMF / Tubular / Flooded		Tubular
SMF / Flooded / Tubular	Boost	14.2 / 14.3 / 14.5	
	Float	13.5 / 13.5 / 13.7	
	Absorption	Boost Voltage @20% of Charging Current till 2 Minutes After that Maintain @ Float Voltage	
Boost Chg. Current Disable	3 to 15A Settable		15A
Boost Chg. Current Enable	150% of Set Charging Current or Max. 20A		
Switching Device for Chg. / Inv	IGBT		
Lightening Protection	Yes (MOV & Fuse)		
OUTPUT PARAMETERS			
Output wave form	Pure Sine wave		
Output Voltage	By default 220V±1%, Sattable Voltage 220V/230V/240V		
Output Frequency	50Hz±0.5%		
Full Load Current	27.2A	36.3A	
Batt. Low Cut	10V-11.7V (Settable), 10.5V (Default)		
Batt. Low Cut Buzzer	Set value of batt. low cut off +0.2V		
Batt. High Cut	Auto Sattable		
Changeover time(Inv. to Grid)	<1ms		
Changeover time(Grid toInv.)	<11ms		
Overload Capacity (It Load Disable)	101-120% @1 Minute (3 times retry), 121-150%@30sec (3 times retry), 151-200%@2sec, 201-300% @ 1sec, 301-400% @ 250mS, >400 @ 20mS		
Overload Capacity (It Load Enable)	101-110% @ 10 minutes, 111-120% @ 2 minuets, 121-150%@30sec, 151-200% @ 2sec, 201-300% @ 1sec, 301-400% @ 250ms, >400 @ 20mS		
Peak Efficiency (DC to AC)	88%		
THDv @ 100% Linear Load	<3%		
DISPLAY, ALARM AND PROTECTION			
Settable Parameters from Display	Battery type, boost charging, IT Load, input source type (grid/Genset), charging current, grid input voltage range, battery low cut.		
Display Parameters	Batt. voltage, charging current, output voltage, output frequency, output load%, grid voltage & frequency, grid & inverter status.		
Indication	System on, inverter on charging on, overload, overheat, mains low-high, batt. low-high, fault type		
Protection	Overload, Batt. Low/high, Output Short Circuit, Output Low, Overheat, Grid High-low, Grid Freq. Under/Over		
MACHENICLE AND ENVIROMENTLE			
Cooling	Temperature based fan ON/OFF		
Operating Temperature	0-50°C		
Max Relative Humidity @ 25°C (non Condensing)	95%		
Noise (greater than 1m radius from system)	<50dB		
Dimension (LxWxH)Inch	24x13x23	24x13x23	

*Specification are subject to change without prior notice due to constant improvement in design & technology.

PURE SINEWAVE SMART INVERTER - COMMERCIAL



- User Friendly Front panel & Display



Provides an extra layer of protection of your devices



Rotary Switch - bypass switch

Fan

DC Fuse PROTECTION

Available In
EHU7500/EHU10000

FUSE BOX



MCB

DC MCB



AC MCB



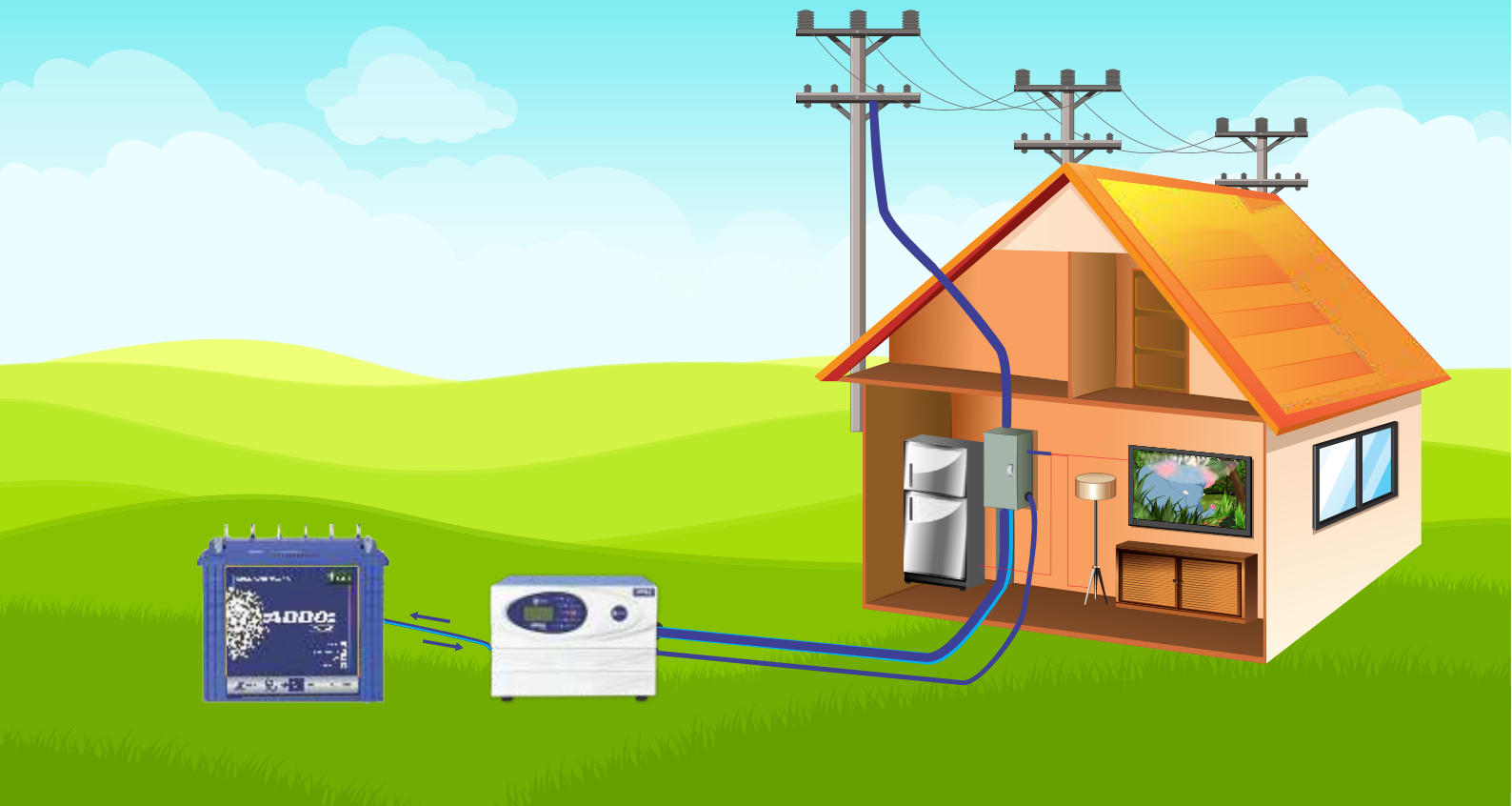
INPUT - OUTPUT



- Opal - Series is equipped with MCB (Miniature Circuit Breaker) / Resettable Fuse
- Protects the Systems and application from overload and short circuits
- Increases the battery life and all application attached

MCB
Available in EHU7500/120V, EHU10000/120V

OPAL
COMMERCIAL



LOAD CHART, APPLICATIONS & BACK-UP TIME

OPAL Series Inverter - HUPS

MODEL NO	BATTERY REQUIRED 200 Ah TUBULAR GEL	Computer (150 Watt)	FAN (100 Watt)	Laptop (100 Watt)	LED TV 32" (150 Watt)	Tube Light (50 Watt)	LED Bulb (15 Watt)	Cooler (300 Watt)	Fridge (500 Surge Watt)	1Hp motor (1500 Surge Watt)	1 Ton AC (2500 Surge Watt)
AHU975/12V	1	1	1	0	1	2	2	0	0	0	0
AHU1175/12V	1	1	2	0	1	1	4	0	0	0	0
AHU1675/24V	2	1	2	0	1	1	6	1	0	0	0
AHU2200/24V	2	1	2	1	1	2	4	0	1	0	0
AHU4000/48V	4	3	3	4	1	0	5	1	1	0	0
AHU5500/48V	4	3	3	5	1	0	6	0	0	0	1

OPAL Series Inverter -Commercial

MODEL NO	BATTERY REQUIRED 200 Ah TUBULAR GEL	Computer (150 Watt)	FAN (100 Watt)	Laptop (100 Watt)	LED TV 32" (150 Watt)	Tube Light (50 Watt)	LED Bulb (15 Watt)	Cooler (300 Watt)	Fridge (500 Surge Watt)	1Hp motor (1500 Surge Watt)	1 Ton AC (2500 Surge Watt)
AHU7500/120V	10	5	5	10	1	0	15	1	1	0	1
AHU10000/120V	10	5	5	10	3	0	20	0	2	1	1

* Recommended battery 200Ah ADDO T-gel/STMF/TTC

* System design life 20 years

* Average charging time depends on the overall efficiency of the various elements and may change due to change in environment

* Average backup time depends on actual power usage and may change over a period of time

* All the claims made are standardized and the actual output can be different for actual users due to usage of system and different environment in which the system is installed

Products Range



Range of Batteries

- ✦ Tall Tubular conventional Battery (TTC)
100AH - 220AH
- ✦ Tubular Gel battery (T-GEL)
150AH - 200AH
- ✦ Short Tubular Maintenance Free Battery (STMF)
150AH - 200AH

Range of Solar Panel

- ✦ Monocrystalline
EPM175W, EPM200W, EP290W, EP350W
- ✦ Polycrystalline
EPP60W, EPP100W, EPP160W, EPP265W, EPP335W

Range of MPPT

- ✦ MPPT PCU (DIAMOND)
EDM/3000/48V, EDM/5000/48V, EDM/5000/96V, EDM/7500/120V, EDM/10000/120V

Range of PWM

- ✦ PWM (PCU SINEWAVE)
EGP/975/12V, EGP/1175/12V, EGP/1675/24V, EGP/2200/24V, EGP/2700/24V

GLOBAL PRESENCE



BATTERIES | INVERTER | SOLAR PANEL | MPPT PCU | PWM PCU



Air Wave
Limited

Air Wave Limited

Plot C,Block IX,Alhaji Adejumo Avenue,
Along Oshodi Express way, Beside Total Fuel station, Ilupeju | Lagos | Nigeria