

## Backup and PUS Pure Sine Wave Pwer Inverter for Load Shedding

# SYNAPSE

- Pure sine wave output
- Smart LCD setting ( frequency , charge voltage, charge current, etc).
- 3 steps charging algorithm
- Built in AVR function
- Overload and short-circuit protection
- Battery reverse polarity protection (Optional)
- Deep discharge protection
- Cold start function



The SYNAPSE Solar pure sine wave series is designed to work and protect PC equipment and serves as a backup device in extremely hostile power environments where other UPS simply cannot operate. An extra wide input AVR conserves battery for added security. Includes a multi-stage surge suppressor which can protect from surges and spikes. Available in 600W and 1000W versions. These units are powered / charged from the utility / grid only.



Product Code		SYNAPSE 600	SYNAPSE 1000
Default Battery System Voltage		12V DC	24V DC
Inverter Output	Rated Power	600W	1000W
	Surge Rating (20ms)	1800W	3000W
	Waveform	Pure Sine Wave	Pure Sine Wave
	Rated Output Voltage	Inverter: 230V AC (+/-2% RMS), AVR: 195V AC - 245V AC	
	Output Frequency	50Hz / 60Hz +/-0,2Hz	50Hz / 60Hz +/-0,2Hz
	Inverter Efficiency (Peak)	>75%	>81%
	Bypass Efficiency	>95%	>95%
Output Transfer Time		Typical: 6ms 10ms (Max.)	Typical: 6ms 10ms (Max.)
Battery	Minimum Start Voltage	Low Battery Voltage Cutoff +0,5V	Low Battery Voltage Cutoff +0,5V
	Low Battery Alarm	Low Battery Voltage Cutoff +0,5V	Low Battery Voltage Cutoff +1V
	Low Battery Cutoff	10 - 12V DC	20 - 24V DC
	High Battery Cutoff	Nominal Voltage +0,5V	Nominal Voltage +1V
Ac Charge	Floating Voltage	13,5 / 13,6 / 13,7V DC	27 / 27,2 / 27,4V DC
	Nominal Voltage	13,8 ~ 14,5V	27,6 ~ 29V
	Maximum Charge Current	600W	1000W
		20A	15A
Bypass & Protection	Input Waveform	Pure Sine Wave	Pure Sine Wave
	Input Frequency	50Hz or 60Hz	50Hz or 60Hz
	Low Frequency Trip	45+ / -0,2Hz	45+ / -0,2Hz
	Low Frequency Trip	65+ / -0,2Hz	65+ / -0,2Hz
	Overload Protection	110% ~ 125% R Load fault after 30s 125% ~ 150% R Load fault after 3s >150% R Load fault after 500ms	
	Over Temperature Protection	>90°C	>90°C
	Bypass Output Protection	10A 250V AC	10A 250V AC
Output Circuit protection	YES	YES	
Mechanical Specification	Dimensions	385 x 325 x 190mm	385 x 325 x 190mm
	(N.W) kg	3000W	1000W
		8kg	13,5kg
	Shipping Dimensions (W x H x D)	420 x 385 x 225mm	420 x 385 x 225mm



SYNAPSE-C2

### Acc. Battery Boxes

Product Code	Description
SYNAPSE-C1	Battery box for 1x 12V 100AH
SYNAPSE-C2	Battery box for 2x 12V 100AH

## SYNAPSE 3.0+ Off-Grid Inverter

# SYNAPSE

- Pure sine wave solar inverter
- Output power factor 1
- High PV input voltage range
- Inverter running without battery
- Built-in 80A MPPT solar charger
- Battery equalization function to optimize battery performance and extend lifecycle
- Built-in anti-dusk kit for harsh environment



### Model

Product Code	SYNAPSE 3.0+
Rated Power	3000VA / 3000W

### Input

Voltage	230V AC
Selectable Voltage Range	170 - 280V AC (For Personal Computers); 90 - 280V AC (For Home Appliances)
Frequency Range	50Hz / 60Hz (Auto sensing)

### Output

AC Voltage Regulation (Battery Mode)	230V AC $\pm$ 5%
Surge Power	6000VA
Efficiency (Peak)	90% ~ 93%
Transfer Time	10 ms (For Personal Computers); 20 ms (For Home Appliances)
Waveform	Pure sine wave

### Battery

Battery Voltage	24V DC
Floating Charge Voltage	27V DC
Overcharge Protection	33V DC

### Solar Charger & AC Charger

Maximum PV Array Open Circuit Voltage	145V DC
Maximum PV Array Power	1500W
MPP Range @ Operating Voltage	30 ~ 115V DC
Maximum Solar Charge Current	60A
Maximum AC Charge Current	60A
Maximum Charge Current	120A

### Physical

Dimension (D x W x H)	100 x 300 x 440mm
Net Weight	9,5kgs
Communication Interface	USB / RS232

### Environment

Humidity	5% to 95% Relative Humidity (Non-condensing)
Operating Temperature	-10°C to 50°C
Storage Temperature	-15°C to 60°C

Product specifications are subject to change without further notice.

# SYNAPSE

## SYNAPSE 5.0+ Off-Grid Inverter

- Pure sine wave solar inverter
- Output power factor 1
- High PV input voltage range
- Inverter running without battery
- Built-in 80A MPPT solar charger
- Battery equalization function to optimize battery performance and extend lifecycle
- Built-in anti-dusk kit for harsh environment



### Operation with battery connected

Solar Power and AC Power available



### Solar Power and AC Power not available



### Operation with battery connected

Solar Power available



### Model

Product Code	SYNAPSE 5.0+
Rated Power	5000VA / 5000W

### Input

Voltage	230V AC
Selectable Voltage Range	170 - 280V AC (For Personal Computers); 90-280V AC (For Home Appliances)
Frequency Range	50Hz / 60Hz (Auto sensing)

### Output

AC Voltage Regulation (Battery Mode)	230V AC $\pm$ 5%
Surge Power	10000VA
Efficiency (Peak)	90% ~ 93%
Transfer Time	10 ms (For Personal Computers); 20 ms (For Home Appliances)
Waveform	Pure sine wave

### Battery

Battery Voltage	48V DC
Floating Charge Voltage	54V DC
Overcharge Protection	63V DC

### Solar Charger & AC Charger

Maximum PV Array Open Circuit Voltage	500V DC
Maximum PV Array Power	4000 W
MPP Range @ Operating Voltage	120 ~ 450V DC
Maximum Solar Charge Current	80A
Maximum AC Charge Current	60A
Maximum Charge Current	80A

### Physical

Dimension (D x W x H)	100 x 300 x 440mm
Net Weight	10kgs
Communication Interface	USB / RS232

### Environment

Humidity	5% to 95% Relative Humidity (Non-condensing)
Operating Temperature	-10°C to 50°C
Storage Temperature	-15°C to 60°C

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# SYNAPSE

## SYNAPSE 5.0K+ Off-Grid Inverter

- Zero transfer time to protect mission-critical loads such as servers and ATM.
- Detachable LCD control module with multiple communications
- Built-in Bluetooth for mobile monitoring (Android App is available)
- Supports USB On-the-Go function
- Reserved communication port for BMS (RS485, CAN-BUS or RS232)
- Configurable AC/PV output usage timer and prioritization
- Optional parallel operation up to 9 units



### Model

Product Code	SYNAPSE 5.0K+
Rated Power	5000VA / 5000W
Parallel Capability	Up to 9 units

### Input

Voltage	230V AC
Voltage Range	110 - 280V AC
Frequency Range	50Hz / 60Hz (Auto sensing)

### Output

AC Voltage Regulation (Battery Mode)	230V AC $\pm$ 5%
Surge Power	10000VA for 5 sec
Efficiency (Peak)	93% at Line Mode, 90% at Battery Mode
Transfer Time	0 ms
Waveform	Pure sine wave

### Battery

Battery Voltage	48V DC
Floating Charge Voltage	54V DC
Overcharge Protection	66V DC

### Solar Charger & AC Charger

Maximum PV Array Open Circuit Voltage	145V DC
Maximum PV Array Power	4000W
MPP Range @ Operating Voltage	60 ~ 115V DC
Maximum Solar Charge Current	80A
Maximum AC Charge Current	60A
Maximum Charge Current	140A

### Physical

Dimension (D x W x H)	140 x 303 x 525mm
Net Weight	13.kgs
Communication Interface	USB / RS232 / RS485 / Bluetooth / Dry-contact

### Environment

Humidity	5% to 95% Relative Humidity (Non-condensing)
Operating Temperature	0°C to 55°C
Storage Temperature	-15°C to 60°C

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