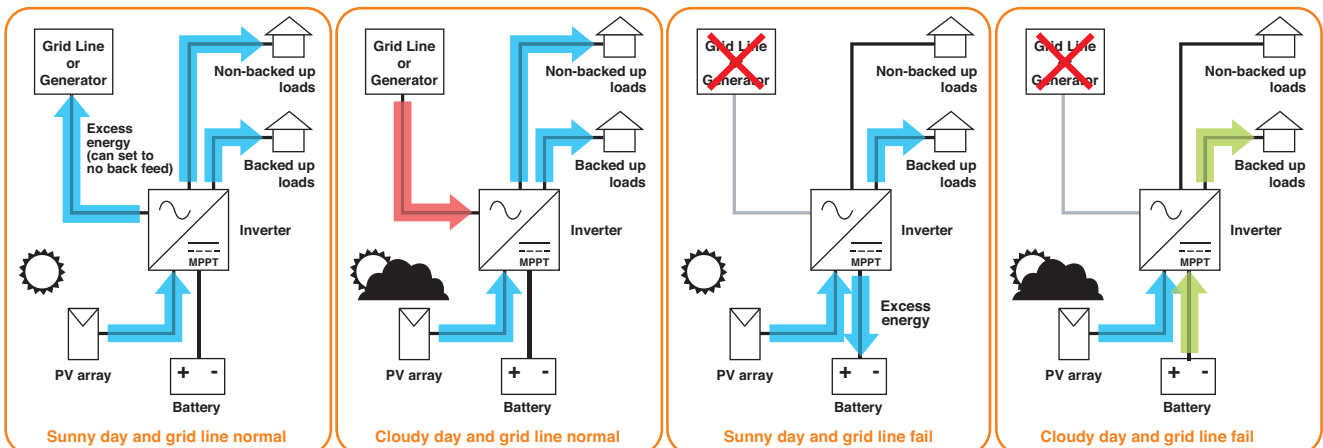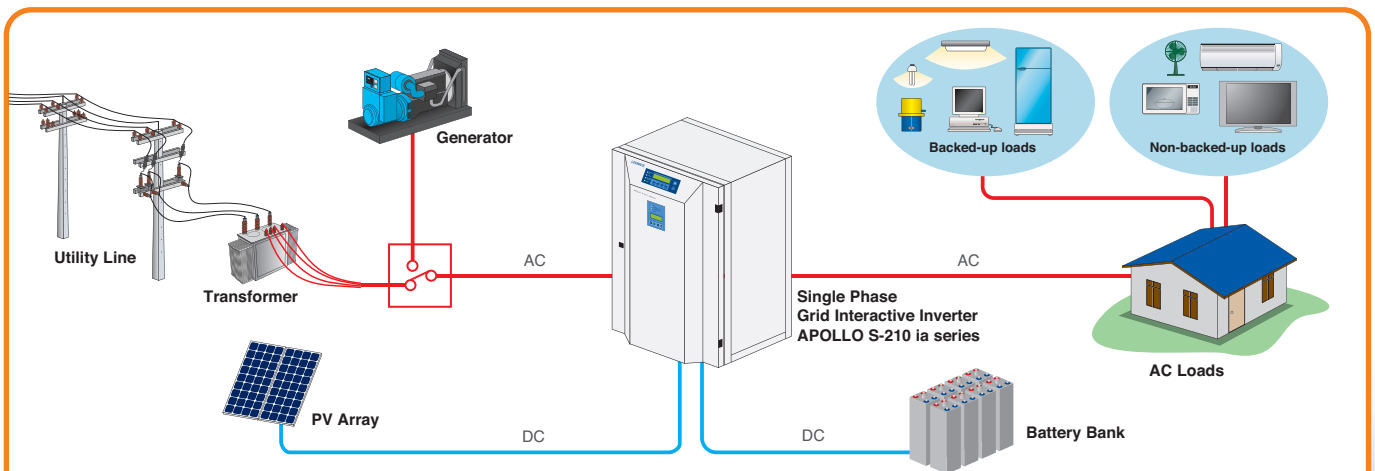# LEONICS®

APOLLO S-210 ia

Single Phase Grid Interactive Inverter
(Grid connected inverter with battery backup capability)

- Single phase bidirectional inverter with built-in output transformer
- Include PWM with MPPT charge controller
- Provide uninterrupted backup power to load when utility grid line is not available.
- Smart battery charging for small battery capacity
- Feeding excess energy back to grid line
- Low harmonic distortion (less than 3%)
- High efficiency > 96.5%
- Special design for using at high grid fluctuation area
- User settable operation:
  1. Excess PV energy back feed to utility line
  2. No PV energy back feed to utility line, PV energy only supply to backed-up and non-backed-up loads
- Battery temperature compensation (option)
- ISO 9001 and ISO 14001 certified factory

Generator

Utility Line

Transformer

PV Array

DC

AC

Single Phase
Grid Interactive Inverter
APOLLO S-210 ia series

AC

Backed-up loads

Non-backed-up loads

AC Loads

DC

Battery Bank

Grid Line or Generator — Non-backed up loads — Backed up loads — Excess energy (can set to no back feed) — Inverter — MPPT — PV array — Battery (+ -)
Sunny day and grid line normal

Grid Line or Generator — Non-backed up loads — Backed up loads — Inverter — MPPT — PV array — Battery (+ -)
Cloudy day and grid line normal

Grid Line Generator (X) — Non-backed up loads — Backed up loads — Inverter — MPPT — Excess energy — PV array — Battery (+ -)
Sunny day and grid line fail

Grid Line Generator (X) — Non-backed up loads — Backed up loads — Inverter — MPPT — PV array — Battery (+ -)
Cloudy day and grid line fail

The APOLLO S-210ia series is a single phase grid interactive inverter with built-in MPPT charge controller. It can operate as grid tie inverter when utility line is available to reduce energy consumption. The inverter has two outputs. The output that provide backup power from storage and PV for the selected section house when utility line is not available and the output without back up power to help utilize PV power to reduce or prevent back feed power to utility line.

Grid Interactive System

LEONICS®

APOLLO S-210 ia series Single Phase Grid Interactive Inverter

SPECIFICATIONS

MODEL			S-218C ia	S-219C ia
RATED POWER	PV Input		3.8 kWp	5.7 kWp
	AC Output		3.5 kW	5.0 kW
BATTERY	Nominal Voltage		48 Vdc	
	Max. inverter charging current		50 A	70 A
	Maximum battery current		100 A	145 A
PV INPUT	MPPT tracking voltage range (V_{mp} of PV string)		> 64 Vdc	
	Max. open circuit voltage (V_{oc} of PV string)		≤ 145 Vdc	
	Maximum PV current		72 A	104 A
AC INPUT FROM GRID LINE OR GENERATOR	Voltage		220 / 230 / 240 Vac (L-N) ± 10%	
	Phase		single phase	
	Frequency		50 / 60 Hz ± 3%	
	Max. AC current to inverter		22 A	30 A
	Max. AC current (Total)		38 A	53 A
AC OUTPUT	Voltage		220 / 230 / 240 Vac (L-N)	
	Voltage regulation		± 1%	
	Phase		single phase	
	Frequency		50 / 60 Hz ± 0.1% (crystal control) (auto sensing)	
	Wave form		Pure sine wave	
	Total harmonic distortion		< 3%	
	Maximum surge current		200%	
	Max. AC current to load	Backed up	15.9 A	22.7 A
		Non-backed-up	16 A	23 A
ISOLATION	Galvanic isolation		yes	
EFFICIENCY	Peak efficiency of inverter		> 94%	> 96.5%
	Peak efficiency of charger		> 98%	> 98%
PROTECTION			Over current / Overload / Over temperature / Short circuit /	
INDICATOR	Inverter display	LED	Standby / Run, AC, Full battery / Low battery, Alarm	
		LCD	Inverter (voltage / current / frequency / power / reactive power), Load (percentage, voltage, frequency), Battery (voltage / current / state of charge (%)), Internal charging current, External charging current, DC power, Heat sink temperature, Battery temperature (option), Today AC inverter energy (input / output), Today DC inverter energy (input / output), Accmulated AC inverter energy (input / output), Accmulated DC inverter energy (input / output), System status, Time, Date, Data log	
	Charger display	LED	Battery Level, PV Voltage Level, Operation Status, Alarm	
		LCD	Digital meter, 180 days power and event logger	
AUDIABLE ALARM			Low battery, Over load, Short circuit, Over temperature	
COOLING			Automatic cooling fan	
ENVIRONMENT	Temperature		0 - 50°C	
	Relative humidity		0 - 95 % (Non - condensing)	
DESIGN STANDARD			AS 3100	
DIMENSION	W x H x D (cm)		60 x 105 x 46 cm	
WEIGHT	Approximate in kg		106 kg	114 kg

Continuous product development is our commitment. In that manner, the above specifications may be changed without prior notice.