



EnergiEssential

Bi-directional inverter
1 kw - 4 kw

EnergiEssential integrated multiple functions, including a powerful battery charger, true sine wave inverter and a high speed automatic transfer switch. Its distinguishing surge capability makes it capable to power most demanding appliances, such as air conditioner, water pump, washing machine, freezer etc. EnergiEssential bi-directional inverter can be used in multiple applications. You can use it to compose power backup system. Or, with a quick setting, you can compose a simple solar hybrid system either with grid or diesel-generators.

EnergiEssential has some distinguished features designed especially for Africa, Middle East and South East Asian countries where the grid was not stable and low voltage was frequently encountered. EnergiEssential can maximize the usage of grid and automatically adjust its charging in accordance with the setting.



- Bi directional inverter with pure sine wave output
- Can be applied for power backup and solar hybrid system
- High performance designed for all kinds of home appliances.
- TBB premium II multi stage charging algorithm with built in automatic temperature compensation
- Equalization charging program was available
- Compatible with majority of cheap generators in the market.
- Designed to work with weak grid
- Designed for tropical region with working temperature up to 60 °C
- Optional CM was available for automatic generator start
- Dry contacts
- T-Bus compatible (4 kw and above)

RCC

Simple remote monitor
with LED Display



LMD

Load management Device



CM

Automatic Generator start





Model No.	12 VDC	CS0625L	CS1040L	CS2080L		
	24 VDC	CS0615M	CS1020M	CS2040M	CS3060M	CS4080M
	48 VDC				CS3030S	CS4040S

Inverter

Nominal Voltage	12VDC/24 VDC/48 VDC					
power 30mins @25 °C (W)	600 W	1000 W	2000 W	3000 W	4000 W	
Cont.power@25 °C (W)	600 W	1000 W	1800 W	2500 W	3600 W	
Cont.power@40 °C (W)	600 W	1000 W	1500 W	2000 W	3000 W	
Cos φ	0.9-1					
Surge	300 %					
Output voltage 【1】	230VAC or 110VAC ± 2%			230VAC ± 2%		
Output frequency	50Hz or 60Hz ± 0.1%					
Efficiency (max)	12 V	88%				
	24 V	88%				
	48 V	92%				
Bypass range	UPS mode	184VAC - 264VAC / 92 VAC - 132 VAC			184VAC - 264VAC	
	GEN mode	160VAC - 280VAC / 80 VAC - 140 VAC			160VAC - 280VAC	
Crest factor	3:1					
THD	<3%					
Zero load power	17 W	22 W	27 W	36 W	62 W	
Zero load power (power save mode)	4 W	5 W	7 W	9 W	15 W	
Output circuit breaker	5 A	10 A	15 A	30 A	30 A	
Overheat protection	auto disconnect					
Overload protection	auto disconnect					
shortcut protection	auto disconnect					

Charger

Nominal Output Voltage	12VDC/24 VDC/48 VDC					
Max Output current (A) - adjustable	25/15	40/20	80/40	60/30	80/40	
AC Input range	UPS mode	184VAC - 264VAC/92VAC-132VAC			184VAC - 264VAC	
	GEN mode	160VAC - 280VAC/80VAC-140VAC			160VAC - 280VAC	
Battery types	AGM / GEL / LFP / Flooded					
Absorption time	variable					
Temperature compensation	-4mV/°C/cell					
Charger circuit breaker	5 A	10 A	15 A	30 A	30 A	

Other Data

Transfer time	UPS mode	15 ms
	GEN mode	2 s
Transfer switch	40 A	
Battery connector	M8 x 2	
AC connector	Terminal block (M3 screw)	

Mechanical Data

Enclosure	Steel with powder paint					
Dimension (mm)	444x186x135			512x216x176		
Net Weight (kgs)	9.5	14	16	18.5	22.5	
Cooling	Forced fan					
Protection	IP20					

Standard

Safety	EN60950-1					
EMC	EN55022,EN55024					

【1】 Output voltage: 220VAC/60Hz for Philippines