SIES mini

Self consumption hybrid PV system

max 2KVA , 4KWH
max 1.28KW PV

PURSUIT OF PERFECTION

TBB Power GmbH

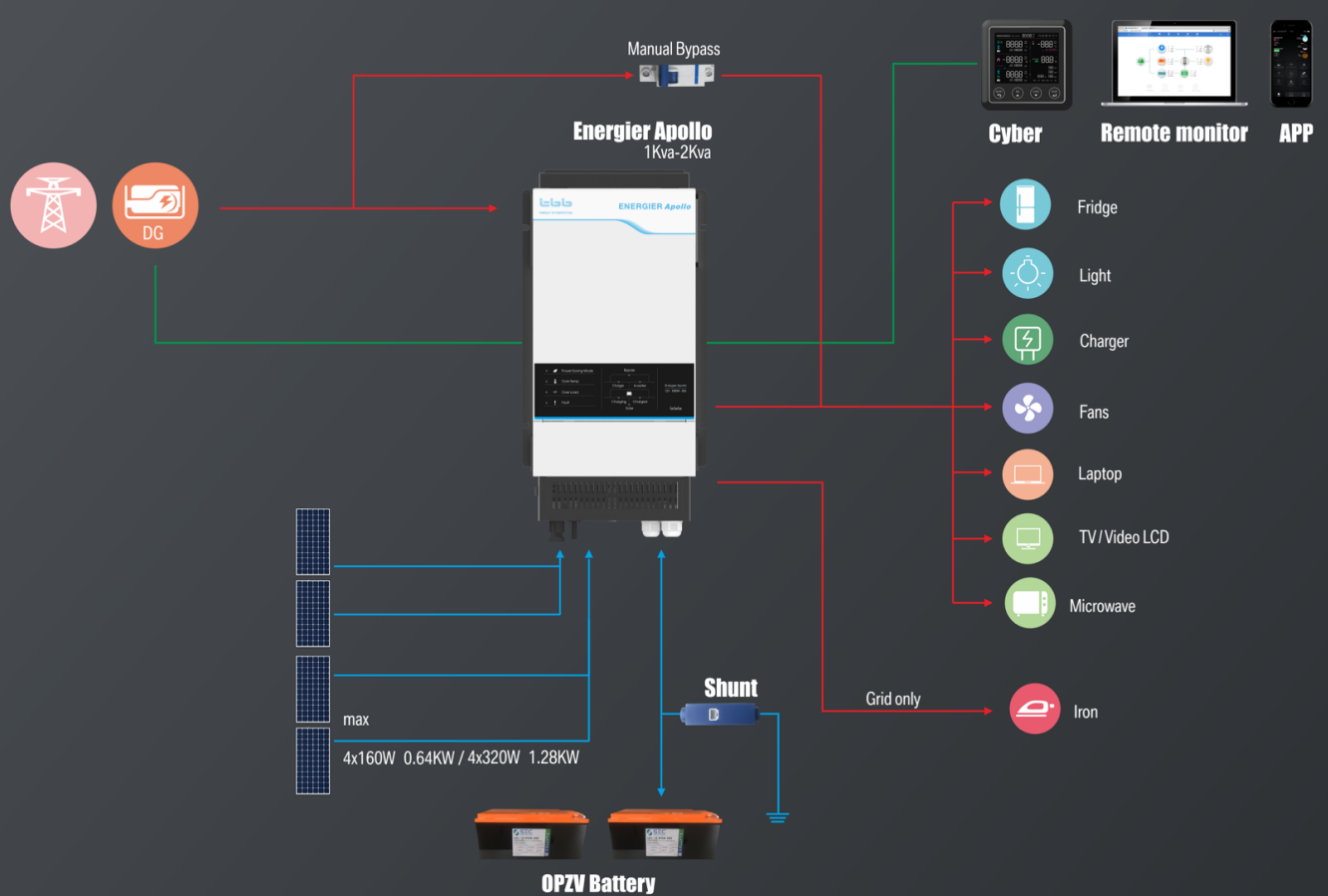
TBB Power Inc.

TBB Power CO.,LTD.

SIES Mini

is the small self consumption Hybrid PV system developed by TBB Power aiming at small family or vocation home with max power 1kva to 2kva and daily energy consumption 1kwh to 2kwh.

SIES mini could take use of energy both from sun, grid or generator, allowing you to be energy independent, assuring you the continuous power without being affected by power shedding or blackout. It is the real solution for area where has no power supply or suffers electricity shortage.



Fully integrated system

Combined of PWM charge controller, heavy duty bi-directional inverter, energy management system, battery meter, circuit breakers and central monitor, SIES mini is a fully integrated system with all components well configured and preprogrammed in together.

Designed with the concept of Plug and Play, it requires no further configuration and minimum connections. System installation can't be easier and system performance was assured as well.

PLUG and PLAY

Saving Installation Time **80%**

Inverter Charger

Fuse

PWM charge controller

MC4 PV Connector

Switch BOX

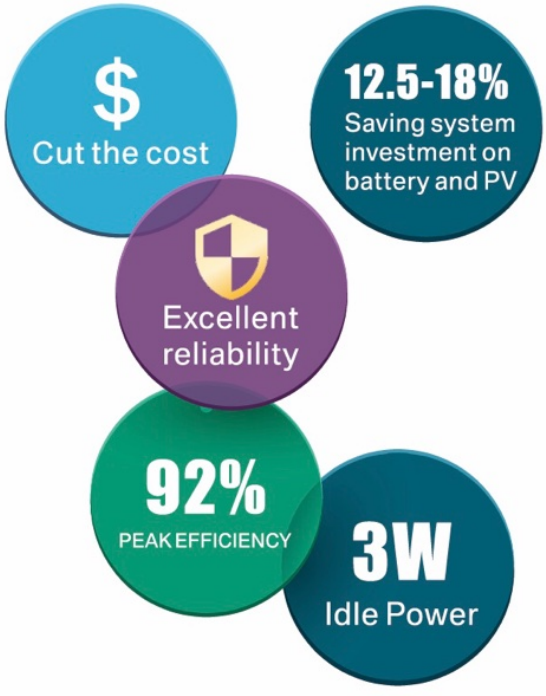
High performance inverter

Energier Apollo bi-directional inverter is suitable to reliably operate all kinds of home appliances, such as TV, fridge, microwave and water pump.

Thanks to its industrial leading efficiency, the system can efficiently manage the energy flow and save your initial investment.

1KVA-2KVA

12VDC-24VDC



High efficiency

Energier Apollo bi-directional inverter designed in SIES mini features leading conversion efficiency up to 92% and extraordinary low idle power of only 2-3W, of which is an assurance protecting the precious energy harvest from the sun and stored in the battery.

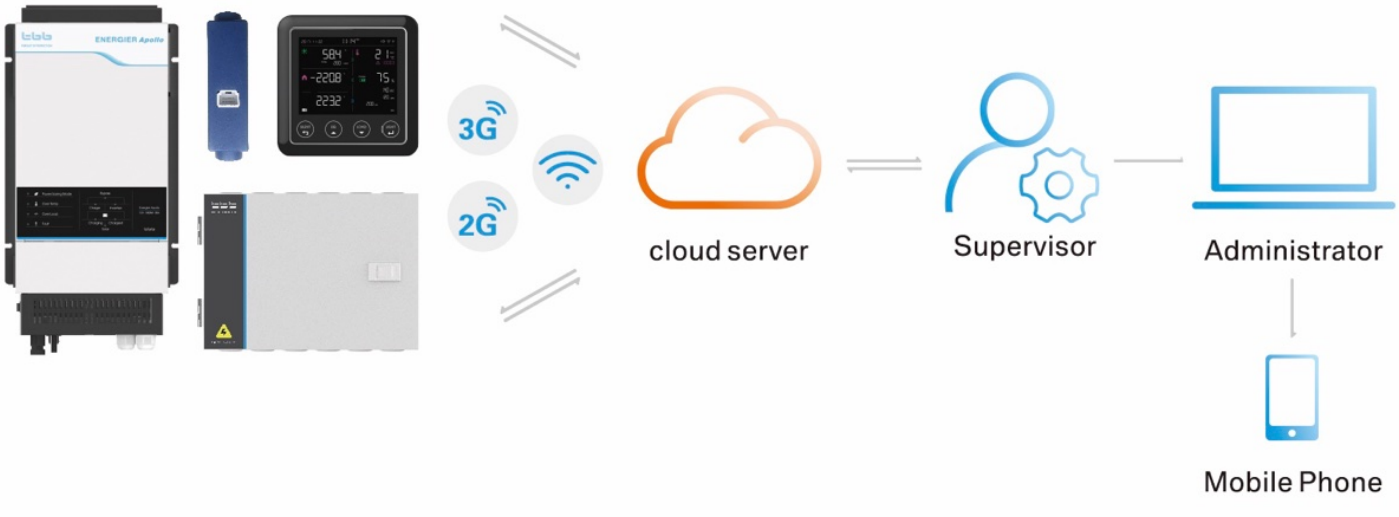
Intelligent Energy Management

According to the chose logic, software inside of SIES will automatically take on control of all energy flow. Energy produced by PV system and from grid will be optimized in combination for your usage. Generator can be connected with system, SIES can take full control of generator.

RAPConfig offers you a convenient tool to configure to change the system setting.

Comprehensive monitoring

SIES mini offers comprehensive monitoring solution. Cyber central monitor shows all data of energy production, energy consumption and battery state of charge, clearly and in real time. Meantime, remote monitoring function is available either through GPRS or wifi. Through web supported by cloud server, customer could obtain all data of running system in both real time and history records.



System configuration

Energier Apollo		CH1035L	CH1350L	CH1630M	CH2040M
Vecommended PV Size		0.64KW (4x160W)		1. 28KW (4x320W)	
Recommended Battery Capacity		12V 200AH		24V 200AH	
Switch Box		SWB-EA10	SWB-EA16		

System

Central Monitor	Cyber
Digital Shunt	SS200
System Logic(Settable)	Solar Hybrid / Solar Energy Storage / Power Backup
Communication	Bluetooth Built-in, Optional GPRS or WIFI

Measuring Unit

AC Input	Voltage, Frequency
AC Output	Voltage, Frequency, Power, Load percentage
Battery	Voltage, Charging Current, Discharging Current, Time To Go, State Of Charge.
Solar	PV Voltage, Current, PV Harvest KWH

INVERTER

Nominal Voltage		12Vdc		24Vdc	
Power 30mins @25℃ （VA）		1000	1300	1600	2000
Power 30mins @25℃ （W）		900	1200	1500	1700
Cont. power @25℃ （VA） 【1】		800	1200	1300	1600
Cont. power @25℃ （W）		750	1100	1200	1300
Cont. power @40℃ （W）		700	1000	1100	1200
Output Voltage		230VAC/110VAC ± 2%			
Output Frequency		50/60Hz ± 0.1%			
Cos Φ		0.9-1			
Overload Capability 【2】	>125%	60s			
	>150%	20s			
Surge		300%			
Efficiency (MAX.)		90.5%		93%	
Bypass Range	Weak Grid	168VAC-276VAC/84VAC-138VAC			
	Standard	184VAC-264VAC/92VAC-132VAC			
THD 【3】		<3%			
Zero Load Power		10W	11W	12W	13W
Zero Load Power(Power Save Mode)		2.5W	2.5W	3W	3W
Overload and Overheat Protection		Auto Disconnect with 3 Times Restart Attempt			
Shortcut Protection		Auto Disconnect			

Charger

Nominal Output Voltage		12Vdc		24Vdc	
Max Output Current (A) - Adjustable		30	50	30	40
AC Input Range	Weak Grid	168VAC - 264VAC/84VAC-132VAC			
	Standard	194VAC - 250VAC/97VAC-125VAC			
Battery Types		AGM / GEL(OPzV) / LFP / Flooded			
Absorption Time		variable			
Temperature Compensation		-4mV/℃/cell			

Solar charge controller

Max PV Open Circuit Voltage(Voc)		25VDC		50VDC	
Recommended PV (Vmpp)		16-19VDC		32-37VDC	
Current Max		50A			
Temperature Compensation		Automatic, -4mV/℃/cell			
Charging Algorithm		TBB Premium Ⅱ			
PV Fuse		40A x 2			
PV Input Terminal		MC4 x 2			

Swtich Box

AC Input	Pre-installed MCB	2-pole 10A	2-pole 16A		
	Pre-installed SPD	Uc:385Vac, In:20KA(8/20us), Imax:40KA(8/20us)			
AC Output 1	Pre-installed MCB	1-Pole 3A * 2PCS	1-Pole 6A * 1PCS & 1-Pole 3A * 2PCS		
AC Output 2 (Load on Grid Only)	Pre-installed MCB	1-Pole 10A * 1PCS		1-Pole 16A * 1PCS	
DC Input	Pre-installed MCB	126A (2 pole 63A)			
Manual Bypass	Changeover Switch	2-pole 16A / 240VAC			

Other Data

Typical Transfer Time		8 ms			
Transfer Switch		16A			
Battery Connector		Copper Bus Bar with 2XM6 Screws			
DC Fuse		40A x4	40A x4	40A x3	40A x4
AC Terminal		40A/690V 6mm² PA66/V0 M4 Screw			
Cooling		Forced Fan			
Protection		Ip20 / IP40 with Optional Dust-proof Net			
Enclosure		Steel with Powder Paint			
Dimension (mm) (max)	Energier Apollo	470×233×95			
	Cyber	101x101x43.5			
	Digital Shunt	135x31.5x59			
	Switch Box	309x220x86			
Net Weight (Kgs)		15.5	16.5	16.5	17

Standard (Energier Apollo)

Safety	EN62109-1 , EN62109-2
EMC	EN61000-3-2,EN61000-3-3,EN61000-6-1,EN61000-6-3

【1】 None linear load, crest factor 3:1

【2】 Base on Cont. power @25℃

【3】 Linear load, crest factor 1.4:1

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