

TBB brand new Ingesola 6SP/8SP/10SP is a hybrid inverter, ranging from 6 to 10kW. Designed with 3 MPPT trackers and 48V low battery voltage, it is flexible for various application scenarios. With parallel capability, it offers a scalable solution for residential and small commercial ESS applications, supporting battery heterogeneity. It is ideal for Hybrid ESS, AC Coupled PV ESS, Power Backup (with generator) and EV Charging (with EV Charger & V2G Charger).

Equipped with a programmable smart port, it can support smart load management, generator input to realize two AC inputs, and connecting grid-tie inverter. With 0-10ms ultra fast transfer time, it ensures system uninterruptible power supply for the mission critical loads when grid outages occur. With built-in EMS, it supports 8 time periods for battery charging and discharging, ideal for peak shaving application.

Hybrid Inverter

Ingesola

6kW / 8kW / 10kW | 120/240Vac

48V Split-phase | 3 MPPT

IP65 Rated

Two AC inputs or Two AC outputs

DC Couple & AC Couple ESS

- Support Hybrid ESS for all application scenarios, and support AC Couple to retrofit existing solar systems
- Support two AC inputs (Grid & Generator) or two AC outputs
- One programmable smart port for generator input to realize two AC inputs, or hierarchical load management, or connecting the grid-tied inverter, or EV charger & V2G charger, based on different demands
- Support up to 3 units in parallel
- Support battery heterogeneity: when multiple Ingesola are connected in parallel and each has independent battery bank, the battery banks can be different in types or the same type with different capacity.
- 3 MPPT trackers, flexible for 3-direction installation of solar panels
- Built-in EMS, support 8 time periods for battery charging and discharging
- Support CAN and RS485
- IP65 Rated
- Working mode: Zero export to load, Zero export to CT and Selling first
- Self-consumption, long lifespan, 0-10ms UPS ability, fast response, intelligent control
- Remote system monitoring via NOVA APP or Web

Model No.	Ingesola 6SP	Ingesola 8SP	Ingesola 10SP
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Grid input

Grid feedback	Yes		
Nominal AC input voltage	Split phase 120/240Vac, 2/3 phase 208V		
AC Input Voltage Range(VAC)	-25%~+15%, Split phase : 180~280@240 (L1-L2); 90-138@120V (L1/2-N) 2/3 phase: L1-L2 156~240@208 (L1-L2); 90-138@120V (L1/2-N)) / 40-70Hz		
AC input Current (transfer switch) (A)	40	63	63
AC Input Current Limit Function & Surge Protection	Yes		

Generator input

Nominal AC input voltage	Split phase 120/240Vac ; 2/3 phase 208V		
AC Input range(VAC)	-25%~+15%, Split phase : 180~280@240 (L1-L2); 90-138@120V (L1/2-N)2/3 phase: L1-L2 156~240@208 (L1-L2); 90-138@120V (L1/2-N)		
AC input Current (transfer switch) (A)	40	63	63
AC Input Current Limit Function	Yes		

Inverter

Nominal AC output voltage	Split phase 120/240Vac, 2/3 phase 208V		
Harmonic distortion	Linear load<2%, Non-linear load <5%		
Nominal Output Power (VA)	6000VA	8000VA	10000VA
Max. AC output power (VA)	6600VA	8800VA	11000VA
Peak power (off grid)	2 Times of Rated Power, 10s		
Nominal / Max. AC Output Current	25A / 37.5A	33.3A / 50.0A	41.6A / 50A
Output Power Factor	1	1	1

DC

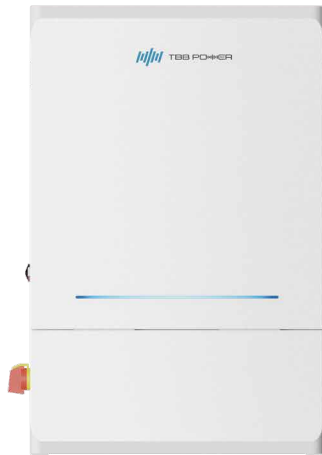
DC Voltage Range	40-60	40-60	40-60
Battery types	Lead acid battery, Lithium battery		
Charging strategy for Li-Ion battery	Self adaption to BMS		
Max. Charging/ Discharging Current	125A/125A	167A/167A	210A/210A

Solar

Max. DC input power (W)	9000W	12000W	15000W
Max. PV Input Voltage (V)	500		
MPPT Voltage Range /Start-up Voltage	125-430V / 160V		
Max. PV Input Current / Max.Short Current	20A+20A / 22A+22A	20A+20A+20A / 22A+22A+22A	
MPPT Number / No. Strings Per MPPT Tracker	2 / 1+1	3 / 1+1+1	

General

Backup	UPS	UPS	UPS
Max. AC Pass-through Current	40A	63A	63A
Protection	a) output short circuit; b) overload, c) battery voltage too high, d) battery voltage too low, e) temperature too high, f) input voltage out of range, g) input voltage ripple too high, h) Fan block		
CAN Bus communication port	For parallel operation		
General purpose com. Port	RS485		
Display	LED		
Operating temperature range & relative humidity	-25 C ~60 C >45 C de-rating; 95% without condensation		
Altitude (m)	3000		
IP Protection	IP65 (Outdoor)		
Grid Regulation	IEEE 1547, IEEE 1547.1, UL 1741SA, CA Rule 21, Hawaiian Rule14H, PRC-024-1		
Safety & EMC	UL 1741, CSA C22.2 No. 107.1, FCC Part 15		
Warranty	5 Year Product Warranty, 10 Year Performance Warranty		



TBB brand new Ingesola 10T/12T/15T is a three-phase hybrid inverter, ranging from 10 to 15kW, with Max. 1.95 DC/AC ratio, 3 MPPT trackers and 48V low battery voltage. It supports three-phase unbalanced output, flexible for various application scenarios. With parallel capability, it offers a scalable solution for residential and small commercial ESS applications, supporting battery heterogeneity. It is ideal for Hybrid ESS, AC Coupled PV ESS, Power Backup (with generator) and EV Charging (with EV Charger & V2G Charger).

Equipped with a programmable smart port, it can support smart load management, generator input to realize two AC inputs, and connecting grid-tie inverter. With 0~10ms ultra fast transfer time, it ensures system uninterruptible power supply for the mission critical loads when grid outages occur. With built-in EMS, it supports 8 time periods for battery charging and discharging, ideal for peak shaving application.

Hybrid Inverter

Ingesola

10kW / 12kW / 15kW | 230/400Vac

48V Three-phase | 3 MPPT
 IP65 Rated
 Two AC inputs or Two AC outputs
 DC Couple & AC Couple ESS

- Support Hybrid ESS for all application scenarios, and support AC Couple to retrofit existing solar systems
- Support two AC inputs (Grid & Generator) or two AC outputs
- One programmable smart port for generator input to realize two AC inputs, or hierarchical load management, or connecting the grid-tied inverter, or EV charger & V2G charger, based on different demands
- Support battery heterogeneity: when multiple Ingesola are connected in parallel and each has independent battery bank, the battery banks can be different in types or the same type with different capacity
- Three-phase unbalanced output
- Max. Charging/discharging current of 300A
- 3 MPPT trackers, flexible for 3-direction installation of solar panels
- Built-in EMS, support 8 time periods for battery charging and discharging
- Support CAN, RS485 and DRM
- IP65 Rated
- Working mode: Zero export to load, Zero export to CT and Selling first
- Self-consumption, long lifespan, 0-10ms UPS ability, fast response, intelligent control
- Remote system monitoring via NOVA APP or Web

Model No.	Ingesola 10T	Ingesola 12T	Ingesola15T
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Grid input

Feedback to grid	Yes
Nominal AC input voltage	Three phase 3P4W+PE, 220/380Vac, 230/400Vac, 240/415Vac, 50/60Hz
AC Input range	-25%~+20% or According to Grid Code Standard; 50Hz:+/-5Hz; 60Hz:+/-5Hz
AC input Current (transfer switch)	45A
AC Input Current Limit Function & Surge Protection	Yes

Generator input

Nominal AC input voltage	Three phase 3P4W+PE, 220/380Vac, 230/400Vac, 240/415Vac, 50/60Hz
AC Input range	-25%~+20%; 40Hz-70Hz
AC input Current (transfer switch)	32A
AC Input Current Limit Function	Yes

Inverter

Nominal AC output range	Three phase 3P4W+PE, 230/400Vac+/-2%; 50/60Hz+/-0.1%		
Harmonic distortion	Linear load<2%, Non-linear load <5%		
Nominal Output Power	10000VA	12000VA	15000VA
Max. AC output power	11000VA	13200VA	16500VA
Peak power (off grid)	20000VA 60S	24000VA 60S	30000VA 10S
Nominal AC Output Current	15.2A	18.2A	22A
Output Power Factor	1	1	1
Maximum efficiency	97.8%	97.8%	97.8%
Zero load power (W)	80	80	80

DC

DC Voltage Range	40V-60V		
Battery types	Lead acid battery, Lithium battery		
Charging strategy for Li-Ion battery	Self adaption to BMS		
Max. Charging/ Discharging Current	210A/210A	250A/250A	300A/300A

Solar

Max. DC input power	19500W
Max. PV Input Voltage	1000V
MPPT Voltage Range / Start-up Voltage	150-800V / 160V
Max. PV Input Current / Max.Short Current	16A+16A+16A / 20A+20A+20A
MPPT Number / No. Strings Per MPPT Tracker	3 / 1+1+1

General

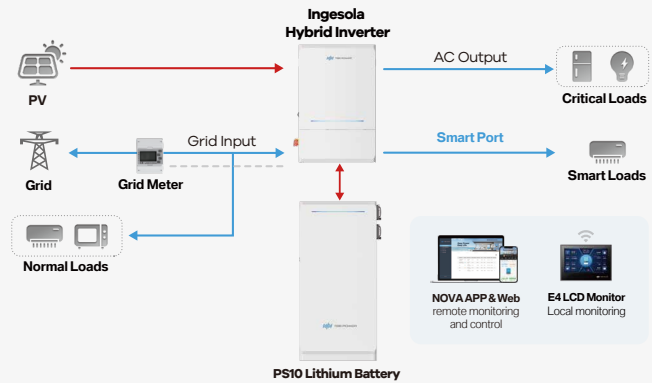
Backup	UPS
Max. AC Pass-through Current	32A
Protection	a) output short circuit, b) overload , c) battery voltage too high , d) battery voltage too low, e) temperature too high, f) input voltage out of range, g) input voltage ripple too high, h) Fan block
CAN Bus communication port	For parallel operation
General purpose com. Port	DRM, RS485
Display	LED+ External Touch LCD screen
Operating temperature range & relative humidity	-25 C ~60 C >45 C de-rating; 95% without condensation
Altitude (m)	3000
Dimension (Wx D x H) (mm)	480*235*700
Weight (kg)	30 31 32
IP Protection	IP65 (Outdoor)
Grid Regulation	AS/NZS 4777.2, IEC61727, IEC62116, IEC61683, NRS097-2-1
Safety & EMC	IEC62109-1/-2,IEC61000-6-1,IEC61000-6-3,IEC61000-3-11,IEC61000-3-12,NTS2.1(A),RD1699
Warranty	5 Year Product Warranty, 10 Year Performance Warranty

ESS Applications

Work with Solar

Hybrid ESS Solution

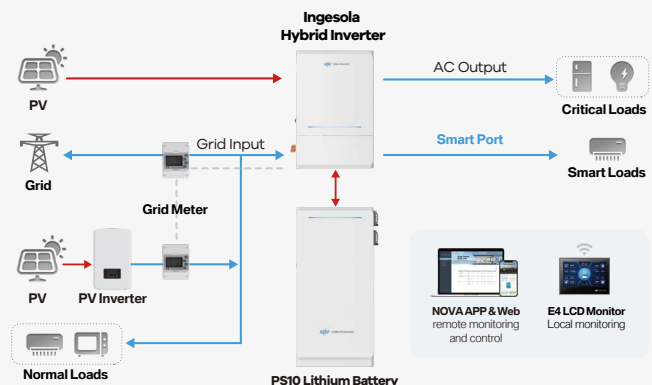
Suitable for all application scenarios.



The following two solutions are suitable for scenarios with more energy consumption in the day and less consumption at night, like offices.

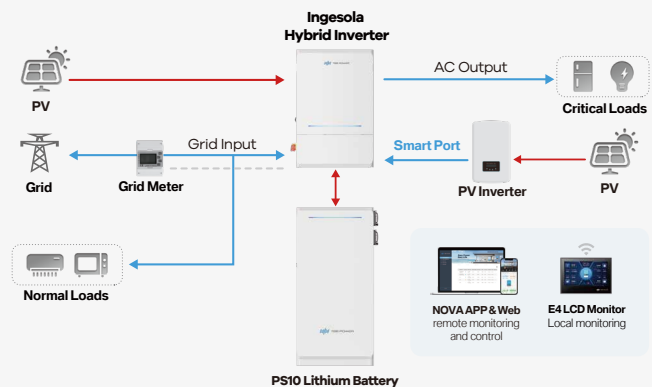
Hybrid ESS Solution with AC Coupled PV on Input

Mostly for retrofitting an existing PV grid-tie system into an ESS system by adding a CT or Energy Meter.



Hybrid ESS Solution with AC Coupled PV on Output

Mostly for retrofitting an existing PV grid-tie system into an AC Coupled PV ESS system without adding CT or Energy Meter. When the grid fails in the daytime, the PV inverter can also keep generating electricity.

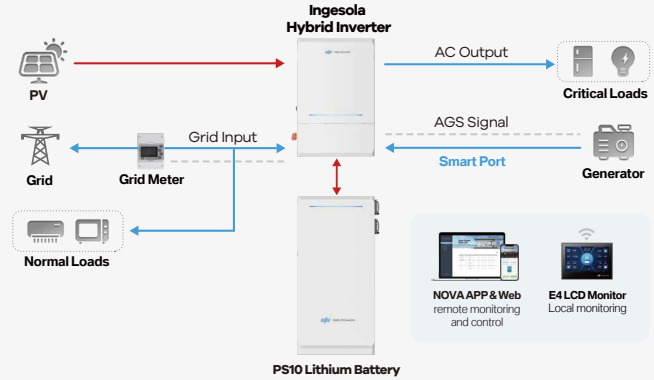


Work with Generator

Power Backup Solution

Suitable for a newly installed system.

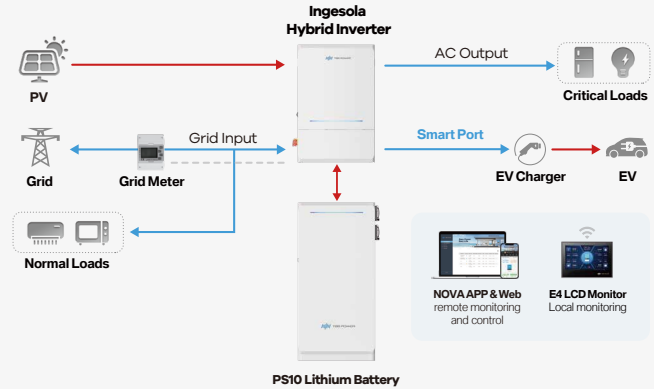
Application scenario: unstable grid or non-stop power supply required, like fire fighting systems.



Work with EV Charger & V2G Charger

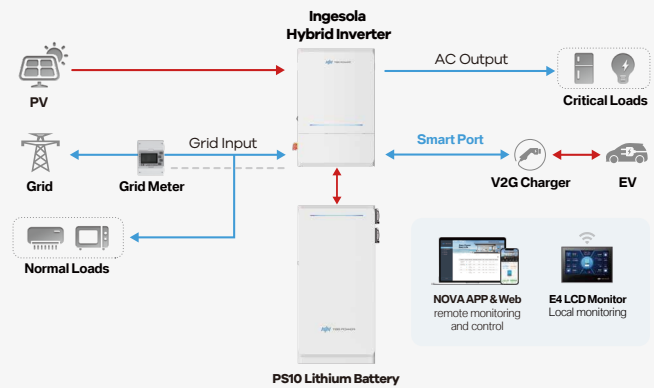
Pair Energy Storage System with EV Chargers

The EVs can be charged with surplus solar energy, with the battery if the battery SoC is higher than a certain level, or with grid power during low or negative price periods, to realize time-of-use arbitrage and cut your bills.



Pair Energy Storage System with V2G Chargers

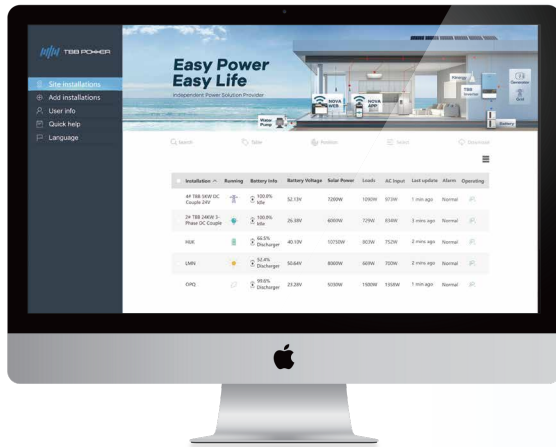
When working with the V2G chargers, the system can charge the EVs with surplus solar to save bills. When the PV and the battery are not enough to power loads, the system can also draw the stored energy from EVs to compensate the insufficient part.



TBB NOVA APP & Web

Monitor and Control Your Solar System Anywhere Anytime

NOVA App and NOVA Web are FREE energy management and monitoring system designed by TBB Renewable, displaying real-time data of all system components and history records, providing easy access to controlling the power generation and power consumption. According to historical data, users can actively adjust and optimize power consumption habits.



Devices for remote monitoring communication



Ether-Link



Kinergy II-BLE/WiFi
Wireless Data Logger



E4 LCD Monitor

Comprehensive Monitoring

- Live data and status overview and system analysis
- System configuration and parameter setting
- Customizable alarm setting
- Detailed report for power harvest, storage and consumption in visual chart and graph
- WEB compatible for Windows and Mac PC
- APP available for Android and iOS phone

Intelligent Management for Dealers / Installers

- Comprehensive management for multiple installations
- Catch potential issues early with alarm setting to prevent system failure
- Optimize the energy harvest and usage with history graphs and detailed analytical reports
- Proactive maintenance services to keep good relationship with customers
- Customizable banner to show dealers information and slogan

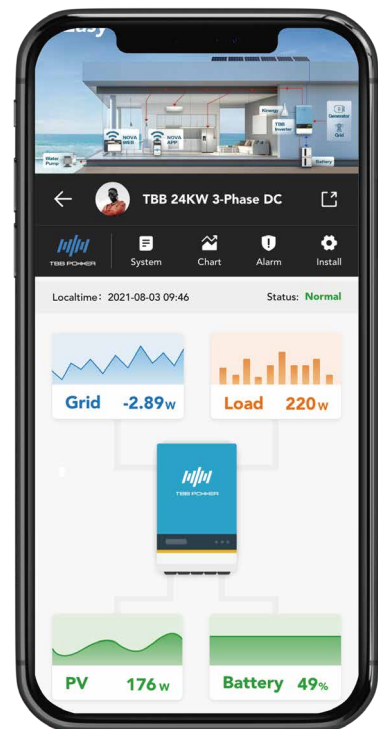


Android



iOS

nova.tbbpower.com





Residential Hybrid **ESS Solution**

T B B R E N E W A B L E