

# Tyrann

- Inverter Charger -



TBB Tyrann is a transformer-based inverter charger designed for backup power, off-grid, and ESS applications, handling high surge loads. It features dual AC inputs and outputs in the 10kW and 15kW versions for automatic connection to the active power source. The smaller 3kW to 8kW models include a programmable smart port, allowing for configuration as either a generator input or a secondary AC output for efficient load management during power shortages. Outperforming conventional transformer-based inverters, Tyrann transformer-based hybrid inverter maximizes solar energy use by preferentially powering loads, charging batteries, and feeding surplus back to the grid, minimizing waste.

Additionally, Tyrann supports maximizing energy self-consumption, grid feed-in for utility credits, retrofitting existing PV system, and optimizing bills with peak shaving and time-of-use strategies.

## Enhanced Flexibility

- AC Coupling and DC Coupling
- Parallel and three-phase up to 9 units, 135kW
- Two AC inputs & two AC outputs<sup>\*1</sup>
- Built-in a smart port for Gen input or 2nd AC output<sup>\*2</sup>
- Supports 600V MPPT solar charge controller for less cable costs
- Compatible with mainstream lithium battery brands and generators
- AGS function, Power Control & Power Assist
- Two independent CAN Buses for flexible system communication<sup>\*3</sup>

\*1: Only available for 10kW/15kW model

\*2: Only available for 3kW-8kW model

\*3: Only available for 10kW/15kW model

## Superior Reliability

- Transformer-based, high surge power
- 0ms ultra-fast switch to battery power
- Maximize solar energy utilization and minimize energy waste
- Minimize the impact of loads on batteries when the grid is available

## ESS Capabilities

- Maximize self-consumption
- Lower electricity bills via peak shaving & time-of-use
- Grid feed-in for utility credits
- AC Coupling retrofitting

## Easy O&M

- System wake-up when the AC or PV is regained
- Local monitoring via E4 LCD Monitor
- Remote monitoring and control via Nova Web & APP

Model	Tyrann 3.0M	Tyrann 3.0S	Tyrann 5.0S	Tyrann 8.0S	Tyrann 10.0S	Tyrann 15.0S
Product Topology	Transformer based					
Power Assist	Yes					
Feedback into Grid	Yes					
AC Input Range	175~265VAC / 45Hz~55Hz@50Hz (normal), 55Hz~65Hz@60Hz (normal)					
AC input Current (transfer switch) (A)	32		50		2x100	
<b>Inverter</b>						
Nominal Battery Voltage / Input Voltage (VDC)	24 / 21-34		48 / 42~68			
AC Output Voltage(VAC) / Frequency(Hz)	220/230/240 ± 2%, 50/60 ± 0.1%					
Harmonic Distortion	<2%					
Cont. Output Power at 25°C (VA)	3000	3000	5000	8000	10000	15000
Max Output Power (30min) at 25°C (W)	3000	3000	5000	8000	10000	15000
Cont. Output Power at 25°C (W)	2500	2500	4000	6500	8000	13000
Cont. Output Power at 40°C (W)	2200	2200	3700	5600	7000	10000
Cont. Output Power at 65°C (W)	1800	1800	3000	4500	6000	7500
Peak Power (W)	9000	9000	15000	24000	30000	45000
Surge	300%					
Maximum Efficiency	94%	95%	96%			
Zero Load Power (W)	14	14	18	26	40	60
<b>Charger</b>						
Charge Voltage 'Absorption' / 'Float' (VDC)	28.8 / 27.6		57.6 / 55.2			
Battery Types	AGM / GEL / OPZV / Lead-Carbon / Flooded / Traction / Lithium					
Max AC Charge Current (A)	80	40	70	110	140	200
Temperature Compensation	Yes					
<b>General Data</b>						
Main Output (AC Out1) Current (A)	32		50		100	
Auxiliary Output (AC Out2) Current (A)	N/A				50	
Smart Port Current (A)	32		50		N/A	
Transfer Time	0ms (<15ms in Weak AC source Mode)					
Remote On-Off	Yes					
Programmable Relay	2x (30Vdc/3A or 250Vac/3A)				3x (30Vdc/3A or 250Vac/3A)	
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					
ComSync Communication Port	For parallel and three phase operation					
ComMON Communication Port	For remote monitoring and system integration					
Operating Temperature Range	-40°C to 65°C					
Relative Humidity in Operation	95% without condensation					
Altitude (m)	2000				3500	
<b>Mechanical Data</b>						
Battery Connection	Bolts M8 (1+1)				Bolts M8 (2+2)	
AC Connection	Screw terminals 10 mm²				Bolts M6	
Dimension (mm) (max)	499*272*144	499*272*144	570*310*154	620*320*164	672*498*290	672*498*290
Net Weight (kg)	19	19	30	36	74	80
Cooling	Forced fan					
Protection Category	IP21					
<b>Standards</b>						
Safety	EN-IEC 62477-1, EN-IEC 62109-1, EN-IEC 62109-2					
EMC	EN-IEC 61000-6-1, EN-IEC 61000-6-2, EN 61000-6-3, EN 61000-6-4, EN 61000-3-11, EN 61000-3-12				EN-IEC 61000-6-1, EN-IEC 61000-6-2, EN 61000-6-3, EN 61000-6-4	
Grid Regulation	VDE-AR-N 4105*, NRS 097, AS/NZS 4777.2, NTS 2.1 (A)*, RD 1699*					