INGE

Hybrid Inverter

Three Phase | 220/380Vac, 230/400Vac, 240/415Vac

20kW

TBB INGE Series three-phase hybrid inverter is purpose-built for off-grid and backup power applications. Designed to unify solar, battery, grid, and generator power sources into a single intelligent ecosystem, the INGE Series delivers uninterrupted clean energy while reducing fuel costs. Its modular design scales seamlessly from 20kW to 60kW, empowering residential to small commercial deployments with industrial-grade resilience and zero-downtime operation.



IP65 Rating

60kW Scalable Output

800V Max. PV Input

High Efficiency

PV-to-Battery Isolation

Built-in EMS

Ultra-Flexible

- Robust for off-grid and backup power applications
- Dual built-in MPPT
- Max. 800V PV input for reduced BOS costs
- Parallel up to 3 units **(max. 60kW)** with independent battery banks (different capacities supported)
- Dedicated GEN port for generator input/smart load management
- Three-phase unbalanced output
- Support operation without batteries

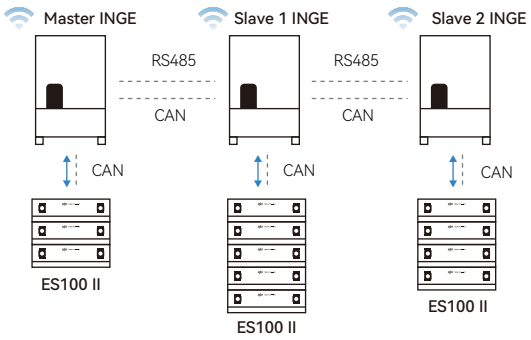
Easy O&M

- Integrated EMS for smart energy management and reliable system protection
- Integrated LCD screen for simplified, intuitive system setup & local monitoring
- Built-in Wi-Fi for remote management and firmware updates via NOVA App & Web
- Wall-mounted design for simple, space-saving installation

Industrial-grade Resilience

- **PV-to-Battery galvanic isolation** to protect lithium batteries
- 4ms on/off-grid switching
- **Excellent surge capacity** for motorized loads
- Full power operation at ≤45℃
- **IP65-rated** enclosure for harsh environment
- 400A max charging/discharging current
- **97.6% high efficiency**, smaller battery investment
- Quiet operation ≤50dB

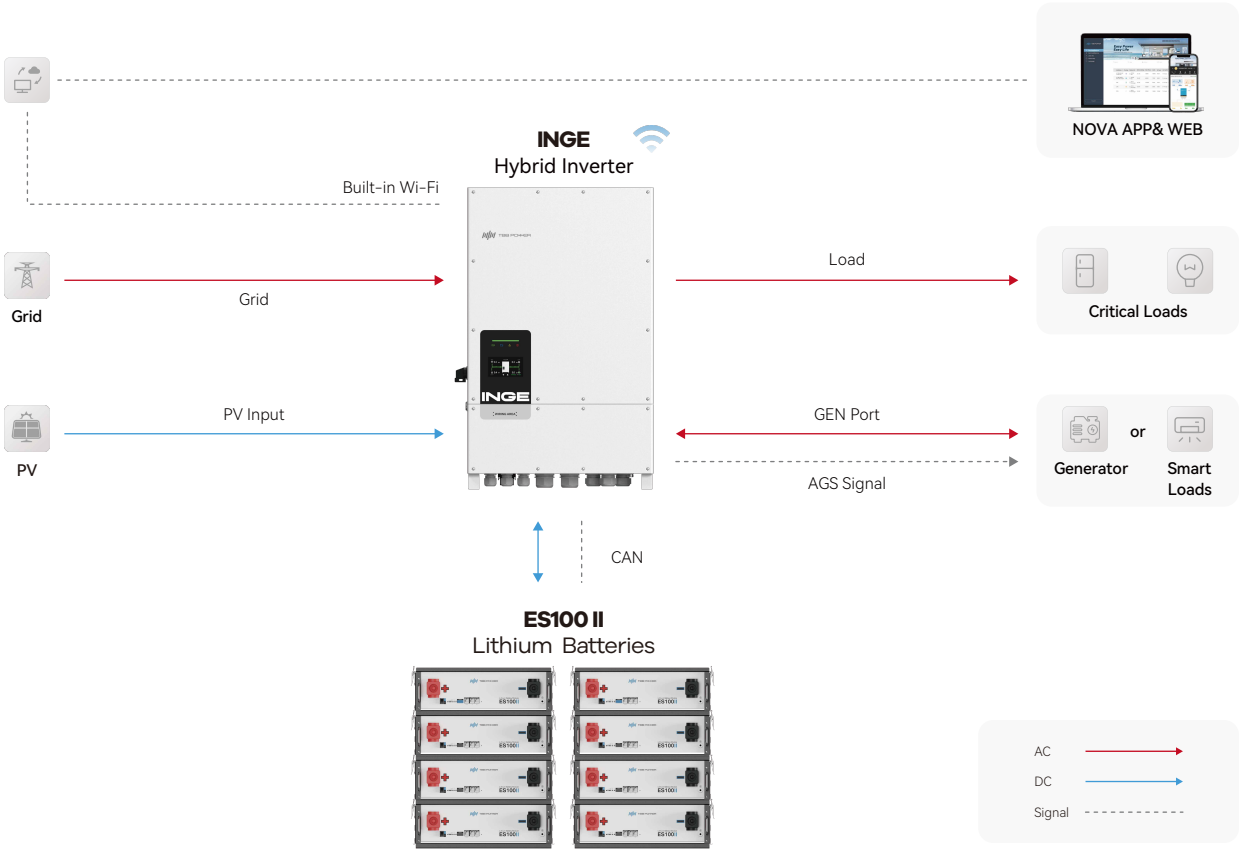
Scalable up to 60kW



Application Scenarios

INGE: Off-Grid and Backup Power System

TBB INGE system delivers intelligent energy management for off-grid and backup applications. Designed for seamless power supply, it maximizes solar usage, minimizes grid consumption, and ensures continuous, independent power supply day and night.



Key Advantages

- **Parallel up to 3 units (60kW)** for large residential and small business applications
- Supports **independent battery banks of different capacities** per unit for faster, customizable installation
- **High efficiency** reduces energy loss and battery investment
- **Max. 800V PV input** for reduced BOS costs
- **Electrical isolation between PV input and battery** ensures enhanced battery protection
- **Integrated EMS** for smart energy management and reliable system protection
- **Dedicated GEN port** for generator input or smart load management
- **IP65-rated enclosure** ensures reliable outdoor performance
- **Full remote monitoring and control** via NOVA App & Web with Wi-Fi connectivity

Model	INGE T20
Grid	
Power Assist	Yes
Nominal AC Voltage and Frequency	3L+N+PE, Three phase, 220/380Vac, 230/400Vac, 240/415Vac, 50/60Hz
AC Voltage and Frequency Range	-20%~+20% or according to grid code standard; 50Hz:+/-5Hz; 60Hz:+/-5Hz
Nominal AC Current (A)	70
Generator	
Power Assist	Yes
Nominal AC Voltage and Frequency	3L+N+PE, Three phase, 220/380Vac, 230/400Vac, 240/415Vac, 50/60Hz
AC Voltage and Frequency Range	-20%~+20%; 40Hz~70Hz
Nominal AC Current (A)	70
Inverter	
Nominal AC Voltage and Frequency	3L+N+PE, Three phase, 230/400Vac+/-2%; 50/60Hz+/-0.1%
Harmonic Distortion	Linear load<2%, Non-linear load <5%
Nominal Output Power (W)	20000
Max. AC Output Power (VA)	22000
Peak Power (off-grid)	2 times of rated power
Nominal AC Output Current (A)	30.3
Power Factor Adjustment Range	0.8 leading to 0.8 lagging
Maximum Efficiency	97.6%
Battery	
DC Voltage Range (V)	42~60
Battery Modules Types	Lithium battery (Self adaption to BMS)
Max. Charging / Discharging Current (A)	400 / 400
Solar	
Max. PV Input Power (W)	30000
Max. PV Input Voltage (V)	800
MPPT Voltage Range / Start-up Voltage (V)	150~750 / 160
Max. PV Input Current / Max. Short Current (A)	36+36 / 45+45
MPPT Number / No. Strings Per MPPT Tracker	2 / 2+2
General	
Backup	UPS
Transfer Time	4ms
Protection	a) output short circuit, b) overload, c) battery voltage too high, d) DC Type II surge protection, e) AC Type II surge protection
CAN Bus Communication Port	For parallel operation
General Purpose Communication Port	RS485, CAN
Monitor Mode	Wi-Fi
Display	LED + Touch LCD screen
Operating Temperature Range & Relative Humidity	-40℃~65℃, >45℃ de-rating; 95% without condensation
Altitude (m)	4000
Dimension (W×H×D) (mm)	505x775x299 (Excluding connectors and brackets)
Weight (kg)	70
Cooling	Smart Cooling
IP Protection	IP65 (Outdoor)
Safety & EMC	EN-IEC 62477-1, EN-IEC 62109-1, EN-IEC 62109-2 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


TBB INSIDE
POWER YOUR ENDLESS COMFORT