

SINV TURBO ON / OFF GRID PARALLEL HYBRID SOLAR INVERTER

Document No.	SATTE-DS-SINVTURBO-001	Revision	1.1
Issue Date	September 2026	Language	English



Parallel-capable hybrid inverter/charger for scalable and three-phase installations. Up to nine units combine for 54 kW of single- or three-phase output, with automatic generator start and transfer.

9
UNITS IN PARALLEL

54 kW
MAX COMBINED OUTPUT

3-phase
CAPABLE

Auto
GENERATOR START

TYPICAL APPLICATIONS

- **Three-phase premises** — three units combine to serve a three-phase supply from single-phase modules.
- **Scalable commercial systems** — up to nine units in parallel for capacity added in stages.

KEY FEATURES

- **Parallel operation up to 9 units** — single-phase or three-phase configurations.
- **Three-phase output capability** from three or more units, without a separate three-phase inverter.
- **Automatic generator access** — starts and transfers to a generator without operator intervention.
- **Dual PV input** on the 6 kW model, for split or differently oriented arrays.
- **120 A MPPT solar charger** — up to 6200 W (3.6 kW model) or 9000 W (6 kW model).
- **Dual load output** with automatic non-essential load shedding (single unit only).
- Grid-tie, off-grid and hybrid modes; pure sine wave, power factor > 0.99.

TECHNICAL SPECIFICATION

PARAMETER	SINV TURBO 3.6KW-24V	SINV TURBO 6KW-48V
GENERAL		
Phase (single unit)	Single phase	
Rated Output Power	3600 W / 3600 VA	6000 W / 6000 VA
Maximum PV Input Power	6200 W	4500 W + 4500 W
Nominal Battery Voltage	24 VDC	48 VDC
Maximum Conversion Efficiency (Solar to AC)	98 %	
Surge Power	7200 W	12000 W
PARALLEL & THREE-PHASE OPERATION		
Maximum Units in Parallel	9	
Three-Phase Capability	Yes, from 3 or more units	
Maximum Parallel Output Power	32.4 kW (9 units)	54.0 kW (9 units)
Automatic Generator Access	Yes	
Dual Load Output	Single unit only — not available in parallel	
GRID-TIE OPERATION — PV INPUT (DC)		
Nominal / Maximum DC Voltage	360 VDC / 500 VDC	
Start-up / Initial Feeding Voltage ¹	90 VDC / 120 VDC	
MPPT Voltage Range	60 – 450 VDC	
MPPT Trackers / Maximum Input Current	1 × 22 A	2 × 18 A
GRID-TIE OPERATION — GRID OUTPUT (AC)		
Nominal Output Voltage	220 / 230 / 240 VAC	
Output Voltage Range	195.5 – 253 VAC	
Nominal Output Current	15.2 A	26.1 A
Power Factor / Feed-in Frequency	> 0.99 49 – 51 ± 1 Hz	
DUAL LOAD OUTPUT (SINGLE UNIT)		
Full Load / Maximum Main Load	3600 W	6000 W
Second Load Range	720 – 2520 W	1200 – 4200 W
Second Load Cut-Off Voltage	26 VDC	52 VDC
Second Load Return Voltage	27 VDC	54 VDC
OFF-GRID OPERATION — AC INPUT		
AC Start-up / Auto Restart Voltage	130 – 140 VAC / 180 VAC	
Acceptable Input Voltage Range	90 – 280 VAC or 170 – 280 VAC (selectable)	
Nominal Operating Frequency	47 – 55 ± 0.3 Hz / 57 – 65 ± 0.3 Hz	
Maximum AC Input Current	21.1 A	35.3 A
OFF-GRID OPERATION — BATTERY MODE OUTPUT (AC)		
Nominal Output Voltage	220 / 230 / 240 VAC	
Output Waveform / Efficiency (DC to AC)	Pure sine wave 94 %	
BATTERY & CHARGER		
Maximum Solar Charging Current	120 A	
Maximum AC Charging Current	100 A	
Maximum Solar + AC Charging Current	120 A	
Maximum Charging Power ²	≈ 3.07 kW	≈ 6.14 kW
Minimum Battery Discharge Rating ²	160 A	133 A
BATTERY BANK CONFIGURATION — BATTERIES ONLY, NOT SOLAR PANELS ⁴		
Battery Modules in Series	Not permitted — parallel connection only	
Min. Battery Modules — S200Ah, 24 V 200 Ah (4.8 kWh)	2	3
Min. Battery Modules — S280Ah / S200Ah	1	1
Max. Battery Modules in Parallel (single unit)	4	6
Recommended Battery Bank Capacity (single unit)	10 – 18 kWh	15 – 30 kWh
Maximum Bank, 9-Unit Parallel Group	160 kWh	270 kWh
MECHANICAL, COMMUNICATION & COMPLIANCE		
Dimensions (H × W × D)	481 × 344 × 120 mm	
Carton Dimensions (H × W × D)	550 × 415 × 200 mm	
Net / Gross Weight	10.0 / 11.0 kg	11.0 / 12.5 kg
Communication Ports	RS232 / RS485 / Wi-Fi / CAN / Parallel	
Remote Monitoring (Wi-Fi / app)	Yes — Wi-Fi or GPRS dongle, iOS and Android	
Operating Temperature / Humidity	–10 °C to +50 °C 5 % to 95 % RH, non-condensing	

BATTERY COMPATIBILITY

ITEM	DETAIL
Battery types supported	LiFePO4 (lithium) with BMS communication; sealed lead-acid, AGM and gel
Compatible battery brands	Pylontech · Dyness · Hubble · Freedom Won · Felicity · Revov · PYTES · BSLBATT · Shoto · GSL · Greenrich · UZ Energy · Weco · Narada · Deye/Sunsynk · Growatt · GoodWe · Victron · SofarSolar · LuxPower · Solis · SMA · SRNE · Outback · AlphaESS
Basis of compatibility	Any LiFePO4 battery offering a Pylontech, Deye/Sunsynk, Growatt, GoodWe, Victron, SofarSolar, LuxPower, Solis, SMA, SRNE, Voltronic, Outback or AlphaESS BMS protocol mode. Pylontech CAN is the most widely emulated.
Not supported	BYD, all families — high-voltage models cannot connect; 48 V models are not on BYD's approved inverter list
Solar modules / generators / grid	Any brand, within the voltage, current and frequency limits in this datasheet
Verification required	Bench-test each battery model before sale — see document SATTE-TG-COMPAT-001

- Note 1 — PV start-up voltage.** The catalogue shows 90 VDC / 120 VDC in grid-tie and hybrid mode but 130 VDC / 120 VDC in off-grid mode, where a start-up voltage above the feeding voltage is not credible. The grid-tie value is shown; confirm the off-grid figure.
- Note 2 — Battery sizing.** Charging power is calculated at nominal battery voltage. Minimum battery discharge rating is rated output power divided by nominal battery voltage at 94 % efficiency. Note that the 3.6 kW model runs on a 24 V bank and therefore demands a *higher* battery current than the 6 kW model on 48 V; size the bank accordingly.
- Model designation.** Your current price list shows this series as SINV TURBO 3.2KW-24V and SINV TURBO 6.2KW-48V. The manufacturer's catalogue rates the same two units at 3.6 kW / 24 V and 6.0 kW / 48 V, and those are the figures shown above. Confirm which power designation is correct before this sheet is issued.
- Note 3 — Compliance.** The manufacturer publishes a CE mark for every other series but has not yet issued one for the TURBO. Obtain the certificate before this model is offered into any market requiring CE, and before it is submitted with a tender.
- Note 4 — Battery bank.** Minimum module count is set by the discharge current needed to deliver rated output. Maximum is the largest bank a single unit's solar array can fully recharge in a day; a parallel group shares one common bank, which scales with the number of units. Lithium modules with an integral BMS must never be wired in series.
- Parallel and three-phase installation.** All units in a parallel group must be the same model and firmware version and share a common battery bank. Dual load output is unavailable when paralleled. Three-phase needs a minimum of three units, one per phase.