

SNM-ECO ON / OFF GRID HYBRID SOLAR INVERTER

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Single-phase hybrid inverter/charger operating in grid-tie, off-grid or hybrid mode, with a built-in high-current MPPT solar charger and dual load outputs for automatic non-essential load shedding. 24 V and 48 V battery platforms.

3.6–6.2
KW RATED POWER

120 A
MAX MPPT CURRENT

98 %
PEAK EFFICIENCY

3
OPERATING MODES

TYPICAL APPLICATIONS

- **Grid-interactive homes** — solar self-consumption with seamless battery backup during outages.
- **Small business** — offices, shops and workshops needing continuous, load-shedding-proof supply.
- **Institutions** — hospitals, schools and emergency centres with critical and non-critical load separation.
- **Rural electrification** — full off-grid operation where no grid connection exists.

KEY FEATURES

- **Three operating modes** — grid-tie, off-grid and hybrid, selectable on site.
- Pure sine wave output with unity power factor (> 0.99).
- **Dual load output** — separate main and second load terminals with independent cut-off, so non-essential loads shed automatically and essential loads run on.
- Built-in 120 A MPPT solar charger (80 A on the 3.6 kW / 48 V model).
- Wide PV input window 60–450 VDC MPPT, up to 500 VDC maximum.
- Simultaneous solar and AC charging up to 120 A total.
- Built-in automatic lithium battery activation and BMS communication port.
- Wi-Fi/GPRS monitoring (iOS, Android); one-key factory reset; anti-dust kit fitted.

TECHNICAL SPECIFICATION

PARAMETER	SNM-ECO 3.6KW PLUS (24 V)	SNM-ECO 3.6KW PLUS (48 V)	SNM-ECO 4.2KW PLUS (24 V)	SNM-ECO 6.2KW PLUS (48 V)
GENERAL				
Phase	Single phase			
Rated Output Power	3600 W / 3600 VA		4200 W / 4200 VA	6200 W / 6200 VA
Maximum PV Input Power	6200 W	6500 W	6200 W	6500 W
Nominal Battery Voltage	24 VDC	48 VDC	24 VDC	48 VDC
Maximum Conversion Efficiency (DC/AC)	98 %			
GRID-TIE OPERATION — PV INPUT (DC)				
Nominal / Maximum DC Voltage	360 VDC / 500 VDC			
Start-up / Initial Feeding Voltage	60 VDC / 90 VDC			
MPPT Voltage Range	60 – 450 VDC			
Maximum Input Current	1 × 18 A	1 × 22 A	1 × 18 A	1 × 22 A
GRID-TIE OPERATION — GRID OUTPUT (AC)				
Nominal Output Voltage	220 / 230 / 240 VAC			
Output Voltage Range	195 – 253 VAC			
Nominal Output Current	15.7 A		18.2 A	27.0 A
Power Factor	> 0.99			
DUAL LOAD OUTPUT				
Full Load / Maximum Main Load	3600 W		4200 W	6200 W
Second Load Range	720 – 2520 W		840 – 2940 W	1240 – 4340 W
Second Load Cut-Off Voltage	26 VDC	52 VDC	26 VDC	52 VDC
Second Load Return Voltage	27 VDC	54 VDC	27 VDC	54 VDC
OFF-GRID OPERATION — AC INPUT				
AC Start-up / Auto Restart Voltage	120 – 140 VAC / 180 VAC			
Acceptable Input Voltage Range	90 – 280 VAC or 170 – 280 VAC (selectable)			
Input Frequency Range	50 ± 1 Hz / 60 ± 1 Hz			
Maximum AC Input Current	21.1 A		24.7 A	36.4 A
OFF-GRID OPERATION — BATTERY MODE OUTPUT (AC)				
Nominal Output Voltage	220 / 230 / 240 VAC			
Output Waveform	Pure sine wave			
Efficiency (DC to AC)	94 %			
BATTERY & CHARGER				
Maximum Solar Charging Current	120 A	80 A	120 A	120 A
Maximum AC Charging Current	100 A	60 A	100 A	100 A
Maximum Solar + AC Charging Current	120 A	80 A	120 A	120 A
Minimum Battery Discharge Rating ¹	160 A	80 A	185 A	135 A
HYBRID OPERATION ²				
PV Start-up / Initial Feeding Voltage	90 VDC / 120 VDC			
Maximum AC Charging Current	100 A			
BATTERY BANK CONFIGURATION — BATTERIES ONLY, NOT SOLAR PANELS ³				
Battery Modules in Series	Not permitted — parallel connection only			

Min. Battery Modules — S200Ah, 24 V 200 Ah (4.8 kWh)	2	2	2	3
Min. Battery Modules — S280Ah / S200Ah	1			
Max. Battery Modules in Parallel	4			
Recommended Battery Bank Capacity	10 – 18 kWh	10 – 22 kWh	10 – 18 kWh	15 – 22 kWh
MECHANICAL, COMMUNICATION & COMPLIANCE				
Dimensions (H × W × D)	420 × 350 × 110 mm			
Carton Dimensions (H × W × D)	500 × 415 × 180 mm			
Net Weight	8.0 kg	8.0 kg	8.0 kg	8.9 kg
Gross Weight	9.0 kg	9.0 kg	9.0 kg	10.0 kg
Communication Ports	RS232 / RS485 / Wi-Fi / GPRS / Lithium battery BMS			
Remote Monitoring (Wi-Fi / app)	Yes — Wi-Fi or GPRS dongle, iOS and Android			
Operating Temperature	–10 °C to +50 °C			
Relative Humidity	5 % to 95 %, non-condensing			
Compliance / Safety Mark	CE			

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SNM-ECO SERIES — CONTINUED

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 — Minimum battery discharge rating. Calculated as rated output power divided by nominal battery voltage at 94 % inverter efficiency. The battery bank must be rated for at least this continuous discharge current, or rated output cannot be delivered. Verify against the battery datasheet before quoting.

Battery charge acceptance. The charger can deliver up to 120 A. Where the battery's nominal charge current is lower, reduce the inverter charge setting to match or add battery modules in parallel. Exceeding the battery's rated charge current shortens service life and may void its warranty.

Dual load output. The second load terminal disconnects at the cut-off voltage and reconnects at the return voltage, shedding non-essential loads automatically while the main load continues. Second load capacity is a proportion of full load, not additional capacity.

Note 2 — Hybrid mode. PV and grid output parameters are identical to grid-tie mode except for the higher start-up voltage shown. Array open-circuit voltage must never exceed 500 VDC at the lowest expected ambient temperature, including the module temperature coefficient.

Note 3 — Battery bank. Minimum module count is set by the discharge current needed to deliver rated output. Maximum is the largest bank this inverter's own solar array can fully recharge in a single day. Lithium modules with an integral BMS must never be wired in series.

Grid connection. Grid-tie and hybrid modes export to the utility network. This requires prior approval from the local distribution network operator and compliance with national grid-code requirements. Where export is not permitted, configure for zero-export or off-grid operation.

SATTE — Super Reliable Products | SNM-ECO Series On/Off Grid Hybrid Solar Inverter

Specifications are subject to change without notice. | SATTE-DS-SNMECO-001 Rev 2.0