



Edge Inverter-US Split Phase

12KW Hybrid Inverter

The ideal solution for new and repowering installations

Intelligent management

- PV, AC and DC hybrid power system
- LA battery, Li-ion battery and non-battery use case
- Bypass backup provides energy security

Ultimate flexibility

- PV, Hybrid and Genset use cases
- 2 MPPT optimizing channels

Complete reliability

- No need for complex microinverters or optimizers
- 10-year warranty,
- Speed-regulating cooling fans have highly efficient cooling effect extending service life

New, modern design

- Backlit-LCD display with more functional capabilities
- LED indicator on cover

Quick commissioning

- Inverter app available via WIFI or GPRS
- Monitor and control multiple devices from your mobile device or laptop

Syntrue is focus on taylored solutions for the energy storage system to help small local companies saving electricity bills and reducing carbon footprint on business activities. Installers choose Syntrue for reliability, performance and felexibility.

The realization of system energy transimission and secuiry managment is the Edge Smart Energy hybrid inverter. Four woking modes includes PV only, AC first, PV first and AC PV hybrid charging. This groundbreaking inverter combines the functions of a PV and battery inverter into a single unit, keeping electrical upgrades to a minimum. The Edge inverter features dural ways power output through bypass and inverting. These enhancements provide battery backup on blackouts and shaving off the spike of power during business hours.

The inverter algorithms is automatic energy expert working for small business reducing cost with energy storage systems.

Technical data	EG12-US-500P
Input PV (DC)	
Max. PV array power (200% oversizing)	12000 Wp
Max. DC voltage	450 V
Max. usable current input per MPPT	22 A
Rated MPP voltage range	90 V-450 V
MPP Trackers	2
Input Battery (DC)	
Battery Type	Syntrue LFP and other 3rd party batteries (SLA and Li-ion)
Voltage range	40 V - 58.6 V
Max. charge current / max. discharge current	160A / 160A
AC Grid Mode	
Max. apparent AC power	18000 VA
Max. charge / discharge power	12000 W (at 240 V/120 V)
Power factor at rated power	1 / adjustable 0.8 overexcited to 0.8 underexcited
Rated AC voltage	240 V (L1+N+L2) / 120 V (Phase parallel, L+N)
AC voltage range	240 V (170V~280V) / 120V (85V~140V)
AC grid frequency / range	50 Hz / 60 Hz
Max. rated output current	60 A
Efficiency	
Max. efficiency	99 %
Max. battery invert efficiency	92 %
Backup Secure (grid outage mode, with or without battery)	
Rated power (at 240V/120 V, 60 Hz)	12000 W
Max. apparent AC power	12000 VA
Nominal AC voltage	85 V-140 V
AC grid frequency	50 Hz or 60 Hz
Switching time	10 ms
Bypass current	60A / 60A (L1,L2) Split Phase
General Data	
Dimensions (W / H / D)	620mm*450mm*132mm
Weight	23.8 Kg
Operating temperature range	25 °C to +55 °C with derating
Topology / Cooling method	Transformerless / Fan
Environmental protection rating	Type 2
Protective devices	
DC disconnect / DC reverse polarity protection	●
Ground fault monitoring / Grid monitoring	●
AC short circuit current capability	●
Equipment	
Interfaces	USB / BAT-CAN / RS-485
Design Life	5 Years
Max number supported Inverters	6

Specifications at nominal conditions Last revised: 01/2026