

# Single-phase Residential Hybrid Inverter



## X1-VAST

5kW / 6kW / 8kW / 10kW



### Smart Management

- V2G/V2H ready for smart home energy integration\*
- Smart Schedule, Smart Scene, and 7x24h TOU
- VPP ready with a variety of compatibility(OpenADR, IEEE2030.5, FCAS, API)\*
- Wireless meter compatibility
- Support whole-home load without extra devices



### High Performance

- 20A DC input per MPPT with 4 trackers
- 200% PV oversizing and high power capacity
- Low PV start-up voltage of 50V



### Assured Reliability

- Up to 200% EPS output for 10s
- UPS-level switchover time <10ms
- Type II SPD on AC&DC side
- Optional AFCI protection\*

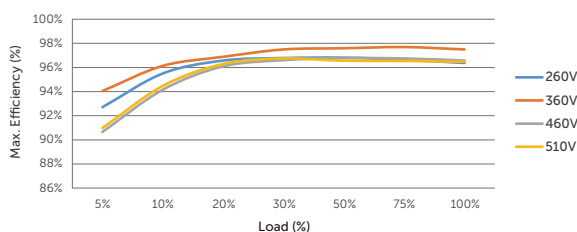


### Flexible Adaptability

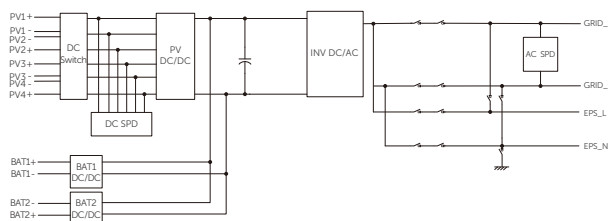
- Dual battery ports & 2-in-1 function for expansion
- Dedicated multi-device connections for streamlined cabling
- Functional and stylish wiring cover
- Microgrid and generator compatible for resilient off-grid solutions

\* Feature to be upgraded in the future

### Efficiency Curve



### Circuit Diagram



**X1-VAST-5K**
**X1-VAST-6K**
**X1-VAST-8K**
**X1-VAST-10K**

| PV INPUT                                             |                                                                                                                              |         |                           |                                     |
|------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------|---------|---------------------------|-------------------------------------|
| Max. recommended PV array power                      | 10 kWp                                                                                                                       | 12 kWp  | 16 kWp                    | 20 kWp                              |
| Max. PV input voltage <sup>①</sup>                   | 600 V                                                                                                                        |         |                           |                                     |
| Nominal PV input voltage                             | 360 V                                                                                                                        |         |                           |                                     |
| MPPT voltage range <sup>②</sup>                      | 40 ~ 560 V                                                                                                                   |         |                           |                                     |
| Start-up voltage                                     | 50 V                                                                                                                         |         |                           |                                     |
| No. of MPP trackers / Strings per MPP tracker        | 3 / (1 / 1 / 1)                                                                                                              |         | 4 / (1 / 1 / 1 / 1)       |                                     |
| Max. input current per MPPT(MPPT1/2/3)               | 20 A / 20 A / 20 A                                                                                                           |         | 20 A / 20 A / 20 A / 20 A |                                     |
| Max. input short circuit current per MPPT(MPPT1/2/3) | 25 A / 25 A / 25 A                                                                                                           |         | 25 A / 25 A / 25 A / 25 A |                                     |
| AC INPUT & OUTPUT(ON-GRID)                           |                                                                                                                              |         |                           |                                     |
| Rated output power                                   | 4999 W                                                                                                                       | 6000 W  | 8000 W                    | 9999 W                              |
| Rated output current                                 | 21.8 A                                                                                                                       | 26.1 A  | 34.8 A                    | 43.5 A                              |
| Max. output apparent power                           | 4999 VA                                                                                                                      | 6000 VA | 8000 VA                   | 9999 VA                             |
| Max. output continuous current                       | 21.8 A                                                                                                                       | 26.1 A  | 34.8 A                    | 43.5 A                              |
| Max. AC input apparent power                         | 14500 VA                                                                                                                     |         |                           |                                     |
| Max. AC input current                                | 63 A                                                                                                                         |         |                           |                                     |
| Adjustable Power Factor range                        | ~ 1 (0.8 lagging to 0.8 leading)                                                                                             |         |                           |                                     |
| THDi (rated power)                                   | < 2%                                                                                                                         |         |                           |                                     |
| BATTERY                                              |                                                                                                                              |         |                           |                                     |
| Battery type                                         | Lithium                                                                                                                      |         |                           |                                     |
| Battery voltage range                                | 80 ~ 480 V                                                                                                                   |         |                           |                                     |
| Max. charge / discharge current <sup>③</sup>         | 50 A (25 A × 2)                                                                                                              |         |                           |                                     |
| EPS (OFF-GRID) OUTPUT (WITH BATTERY)                 |                                                                                                                              |         |                           |                                     |
| Rated EPS output voltage, frequency                  | 230 V, 50 Hz / 60 Hz                                                                                                         |         |                           |                                     |
| Rated EPS output power                               | 5000 VA<br>(4999 VA for Australia)                                                                                           | 6000 VA | 8000 VA                   | 10000 VA<br>(9999 VA for Australia) |
| Peak EPS output power                                | 2 times of rated power, 10 s                                                                                                 |         |                           |                                     |
| Switchover time                                      | < 10 ms                                                                                                                      |         |                           |                                     |
| EFFICIENCY                                           |                                                                                                                              |         |                           |                                     |
| Max. efficiency                                      | 97.6%                                                                                                                        |         |                           |                                     |
| ENVIRONMENT LIMIT                                    |                                                                                                                              |         |                           |                                     |
| Ingress protection                                   | IP66                                                                                                                         |         |                           |                                     |
| Operating ambient temperature range <sup>④</sup>     | -35 ~ 60°C                                                                                                                   |         |                           |                                     |
| Max. operating altitude                              | 3000 m                                                                                                                       |         |                           |                                     |
| Relative humidity                                    | 4 ~ 100% RH (condensing)                                                                                                     |         |                           |                                     |
| GENERAL                                              |                                                                                                                              |         |                           |                                     |
| Dimensions (W × H × D)                               | 590 × 400 × 180 mm                                                                                                           |         |                           |                                     |
| Net weight                                           | 28 ± 2 kg                                                                                                                    |         |                           |                                     |
| Cooling concept                                      | Nature cooling                                                                                                               |         |                           |                                     |
| Communication interfaces                             | CT/Meter (optional), External control RS485, Dongle interfce , DRM                                                           |         |                           |                                     |
| Topology                                             | Transformerless                                                                                                              |         |                           |                                     |
| Certificates and approvals                           | EN / IEC62109 -1 / -2, AS / NZS 4777, G99, EN 50549-10, BR140, IEC61727, IEC 61683, RD1699, NRS 097-2 -1, PEA / MEA, VFR2019 |         |                           |                                     |
| PROTECTION                                           |                                                                                                                              |         |                           |                                     |
| Protections                                          | DC isolation protection, DC reverse-polarity protection, Residual current detection, Over temperature protection             |         |                           |                                     |
| Active anti-islanding method                         | Frequency shift                                                                                                              |         |                           |                                     |
| Surge protection (DC / AC)                           | DC: Type II, AC: Type II                                                                                                     |         |                           |                                     |
| Arc-fault circuit interrupter (AFCI)                 | Optional                                                                                                                     |         |                           |                                     |

① The maximum input voltage is the upper limit of the DC voltage. Any higher input DC voltage would probably damage the inverter

② Input voltage exceeding the MPPT voltage range may trigger inverter protection

③ If each of the two battery ports is connected to a separate battery, it's 25A per port. If one port is connected to a single battery, it's 30A. If both ports are connected to a single battery using a 2-in-1 splitter cable(sold separately), it's 50A.

④ Derating above +45°C