

Single-phase Residential Hybrid Inverter



X1-HYBRID G4

3.0kW / 3.7kW / 5.0kW / 6.0kW / 7.5kW



Smart Management

- VPP ready, ancillary service in power market
- Global MPP scan for optimal energy harvest
- Smart loads management (e.g., heat pump, smart EV charger)
- Intelligent ToU-driven energy management
- CT compatibility with fast load response in just 0.3 seconds



High Performance

- 200% PV oversizing and up to 110% AC output
- Up to 200% PV input
- Up to 97% efficiency in charging and discharging
- Low start-up voltage for longer operation



Assured Reliability

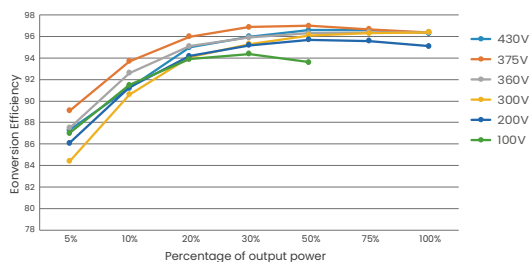
- Up to 150% EPS output for 10s
- UPS-level switchover time <10ms
- IP65 protection degree
- Type II SPD on AC&DC side



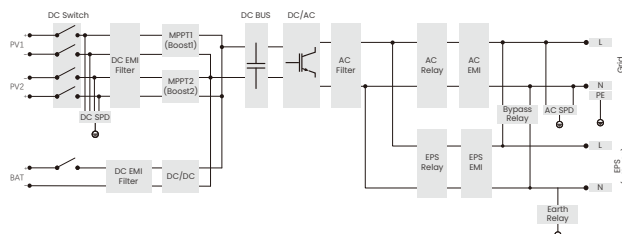
Flexible Adaptability

- Lithium-ion & Lead-acid battery compatible
- Max. 16A DC input current for high power solar panel
- On-grid and off-grid parallel function, up to 15kW

Efficiency Curve



Circuit Diagram



X1-HYBRID-3.0-D
X1-HYBRID-3.7-D
X1-HYBRID-5.0-D
X1-HYBRID-6.0-D
X1-HYBRID-7.5-D

PV INPUT					
Max. recommended PV array power	6.0 kWp	7.4 kWp	10.0 kWp	12.0 kWp	15.0 kWp
Max. PV input voltage ^①	600 V				
Nominal PV input voltage	360 V				
Operating voltage range	70 ~ 550 V				
MPPT voltage range ^②	70 ~ 550 V				
Start-up voltage	90 V				
No. of MPP trackers / Strings per MPP tracker	2 (1 / 1)				
Max. input current per MPPT (MPPT1/2)	16 A / 16 A				
Max. input short circuit current per MPPT (MPPT1/2)	20 A / 20 A				
AC INPUT & OUTPUT (ON-GRID)					
Rated output power	3000 W	3680 W	5000 W (Germany 4600 W, AU 4999 W)	6000 W	7500 W
Max. output apparent power	3300 VA	3680 VA	5500 VA (4600 VA for VDE4105, 4999 VA for AS4777)	6600 VA	7500 VA
Max. output continuous current	14.4 A	16.0 A	23.9 A (Germany 20 A, AU 21.7 A)	28.6 A	32.6 A
Nominal AC voltage	1 / N / PE, 220 / 230 / 240 V				
Max. AC input apparent power	6300 VA	7360 VA	9200 VA	9200 VA	9200 VA
Max. AC input current	27.4 A	32.0 A	40.0 A	40.0 A	40.0 A
Nominal AC frequency	50 Hz / 60 Hz				
THDi (rated power)	< 2%				
BATTERY					
Battery type	Lithium / Lead - acid				
Battery voltage range	80 ~ 480 V				
Max. charge / discharge current	30 A				
EPS (OFF-GRID) OUTPUT (WITH BATTERY)					
Rated EPS output voltage, frequency	230 V, 50 Hz / 60 Hz				
Rated EPS output power	3000 VA	3680 VA	5000 VA	6000 VA	7500 VA
Peak EPS output power	6000 VA, 10 s	6000 VA, 10 s	7500 VA, 10 s	9000 VA, 10 s	11250 VA, 10 s
Switchover time	< 10 ms				
EFFICIENCY					
Max. efficiency	97.6%				
European efficiency	97.0%				
ENVIRONMENT LIMIT					
Ingress protection	IP65				
Operating ambient temperature range ^③	-35 ~ 60°C				
Max. operating altitude	3000 m				
Relative humidity	4 ~ 100% RH (condensing)				
GENERAL					
Dimensions (W × H × D)	482 × 417 × 181 mm				
Net weight	24 kg	24 kg	24 kg	24 kg	25 kg
Cooling concept	Nature cooling	Nature cooling	Nature cooling	Nature cooling	Smart cooling
Communication interfaces	CT / Meter (optional), External control RS485, Dongle interface, DRM, NTC (optional)				
Certificates and approvals	VDE-AR-N 4105, G99, G98, AS/NZS4777, EN50549, CEI 0-21, C10/11 IEC61727, RD1699, NRS 097-2-1, PEA/MEA, VFR2019, PPDS				
PROTECTION					
Protections	Over / under voltage protection, DC isolation protection, DC reverse-polarity 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 Derating above +45°C