Three-phase C&I Hybrid Inverter

X3-ULTRA

15kW / 19.9kW / 20kW
25kW / 30kW

Smart Management

- Single unit UPS-level switchover time <10ms
- Built-in shadow tracking
- Smart loads management(e.g. heat pump, smart EV charger)
- Loads respond time within 0.3 s
- VPP ready with a variety of compatibility (OpenADR, IEEE2030.5, FCAS, API)*

Assured Reliability

- IP66 Ingress protection
- Type II SPD on AC&DC side
- Optional AFCI protection**

High Performance

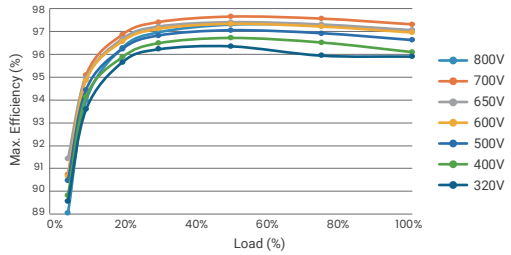
- 200% PV oversizing and up to 110% AC output
- 200% EPS overload for 10s
- Max. 60A charging / discharging current
- Low start-up voltage for more power generation

Flexible Adaptability

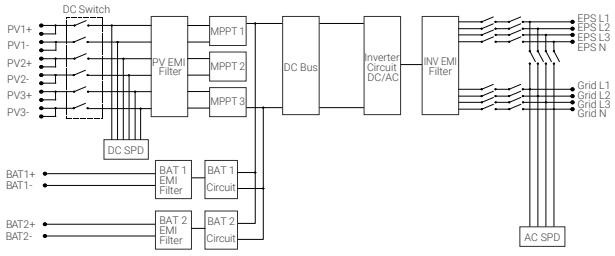
- Max. 10pcs parallel for on-grid and off-grid
- Microgrid and generator function for versatile operations
- Max. 36A PV input per MPPT, optimized for high-power solar panel

*Some features coming soon
**Standard in Brazil

Efficiency Curve



Circuit Diagram



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*V2.3 Information may be subject to modify without notice. 650.00038.00

	X3-ULT-15K	X3-ULT-15KP	X3-ULT-19.9K	X3-ULT-20K	X3-ULT-20KP	X3-ULT-25K	X3-ULT-30K
PV INPUT							
Max. recommended PV array power	30000 Wp		40000 Wp			50000 Wp	60000 Wp
Max. PV input voltage①	1000 d.c. V						
Rated PV input voltage	600 d.c. V						
Operating voltage range	120 - 950 d.c. V						
Start-up voltage	200 d.c. V						
No. of MPP trackers / Strings per MPP tracker	2 (2 / 2)	3 (2 / 2 / 2)	2 (2 / 2)		3 (2 / 2 / 2)		
Max. input current per MPPT	36 / 36 d.c. A	36 / 36 / 36 d.c. A	36 / 36 d.c. A		36 / 36 / 36 d.c. A		
Max. input short circuit current per MPPT	45 / 45 d.c. A	45 / 45 / 45 d.c. A	45 / 45 d.c. A		45 / 45 / 45 d.c. A		
AC INPUT & OUTPUT (ON-GRID)							
Rated output apparent power	15000 VA (AS4777 14999 VA)		19999 VA	20000VA		25000 VA (VDE4105 24900 VA)	30000 VA (AS4777 29999 VA, VDE4105 29900 VA)
Rated output current	21.8 a.c. A@230 a.c. V		29.0 a.c. A@230 a.c. V	29.0 a.c. A@230 a.c. V		36.3 a.c. A@230 a.c. V	43.5 a.c. A@230 a.c. V
Max. output apparent power	16500 VA (AS4777 14999 VA)		19999 VA	22000 VA		27500 VA (VDE4105 24900 VA)	30000 VA(AS4777 29999 VA, VDE4105 29900 VA)
Max. output continuous current	24.0 a.c. A@230 a.c. V (AS4777 21.8 a.c. A@230 a.c. V)		29.0 a.c. A@230 a.c. V	31.9 a.c. A@230 a.c. V		39.9 a.c. A@230 a.c. V (VDE4105 36.3 a.c. A@230 a.c. V)	43.5 a.c. A@230 a.c. V
Rated AC voltage	3W / N / PE, 220 / 380 a.c. V 3W / N / PE, 230 / 400 a.c. V						
Max. AC input apparent power	15000 VA		19999 VA	20000 VA		25000 VA	30000 VA
Max. AC input current	50.0 a.c. A						
Rated grid Frequency	50 / 60 Hz						
AC frequency range	50 ± 5 Hz / 60 ± 5 Hz						
Adjustable power factor range	1 (- 0.8 ~ 0.8)						
BATTERY							
Battery type	Lithium						
Battery voltage range ②③	120- 800 d.c. V						
Max. charge / discharge current	60 d.c. A (30 × 2)						
EPS OUTPUT(WITH BATTERY)							
Rated EPS apparent power	15000VA		19999 VA	20000 VA		25000 VA	30000 VA
Peak EPS output power	2 time of rated power, 10 s						
Rated EPS output voltage, frequency	230 / 400 a.c. V, 50 / 60 Hz						
Switchover time	< 10 ms						
EFFICIENCY							
Max. efficiency	98.0%						
European Efficiency	97.7%						
ENVIRONMENT LIMIT							
Ingress protection	IP66						
Operating temperature range	-35 ~ 60°C (> 45°C derating)						
Max. operating altitude	3000 m						
Relative humidity	0 ~ 100% RH (condensing)						
Overvoltage category	Mains: III, Battery: II, PV: II						
GENERAL							
Demensions(W x H x D)	696 × 526 × 240 mm						
Net weight	46 kg	47.5 kg	46kg		47.5 kg	48.5kg	
Cooling concept	Smart air cooling						
Communication interfaces	RS485, CAN, DRM, DI/DO						
Power consumption (night)	< 5 W						
Topology	Non-isolated						
Cetifications	VDE4105, G99, AS4777, EN50549, CEI 0-21, IEC61727, PEA/MEA, NRS-097-2-1, RD1699, TOR						
PROTECTION							
Protections	Over / under voltage protection, DC isolation protection, DC reverse-polarity protection, Grid monitoring, DC injection monitoring, Back feed current monitoring， Residual current detection, Over temperature protection, AC overcurrent protection, AC short-circuit protection, Active anti-islanding method						
Surge protection	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 inverter
② Compatible with a minimum of 3 units of HS series batteries, but if the total voltage of the 3 batteries is less than 127V and there is no PV input, the system will not able to startup
③ When the voltage is below 180V, the inverter will limit the battery current to less than 20A