

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)^①



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



Assured Reliability

- IP66 Ingress protection
- Type II SPD on AC&DC side
- Optional AFCI protection^②

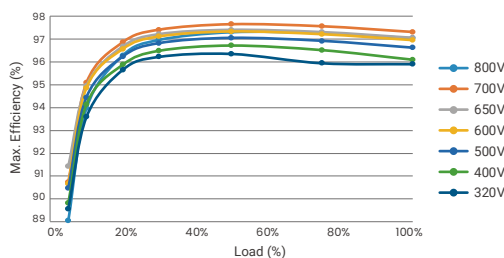


Flexible Adaptability

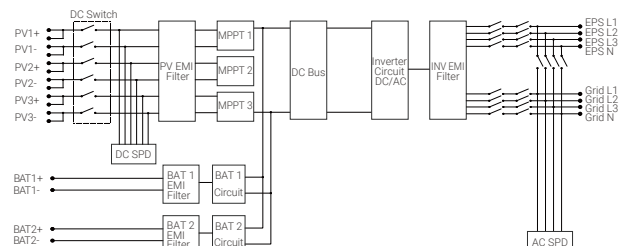
- Max. 10pcs parallel for on-grid and off-grid
- Microgrid and generator function for versatile operations
- Max. 36A PV input per MPPT, optimized for high-power solar panel

^①Some features coming soon
^②Standard in Brazil

Efficiency Curve



Circuit Diagram



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	30 kWp		40 kWp		50 kWp 60 kWp
Max. PV input voltage ^①	1000 d.c. V				
Rated PV input voltage	600 d.c. V				
Operation voltage range	120 - 950 d.c. V				
Start-up voltage	200 d.c. V				
No. of MPP trackers / strings per MPP tracker	3 (2 / 2 / 2)	2 (2 / 2)		3 (2 / 2 / 2)	
Max. input current per MPPT	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 / 45 d.c. A	45 / 45 d.c. A		45 / 45 / 45 d.c. A	
AC INPUT & OUTPUT (ON-GRID)					
Rated output power	15000 VA (AS4777 14999 VA)	19999 VA	20000 VA	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@230a.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 Hz / 60 Hz				
AC frequency range	50 ± 5 Hz / 60 ± 5 Hz				
Adjustable power factor range	1 (- 0.8 ~ 0.8)				
BATTERY					
BBattery type	Lithium				
Battery voltage range ^{②③}	120- 800 d.c. V				
Max. charge / discharge current	60d.c. A (30 * 2)				
EPS OUTPUT(WITH BATTERY)					
Rated EPS apparent power	15000 VA	19999 VA	20000 VA	25000 VA	30000 VA
Peak EPS output power	2 time of rated power, 10s				
Rated EPS output voltage, frequency	230 a.c. V / 400 a.c. V, 50 Hz / 60 Hz				
Switchover time	< 10 ms				
EFFICIENCY					
Max. efficiency	98.0%				
European efficiency	97.7%				
ENVIRONMENT LIMIT					
Ingress protection	IP66				
Operation temperature range	-35 ~ 60°C (> 45°C derating)				
Max.operation altitude	3000 m				
Relative humidity	4 ~ 100% RH (condensing)				
Overvoltage category	Mains: III , Battery: II , PV: II				
GENERAL					
Demensions (W x H x D)	696 × 526 × 240 mm				
Net weight	47.5 kg	46 kg		47.5 kg	48.5 kg
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 12V and there is no PV input, the system will not be able to startup.

③ When the voltage is below 180V, the inverter will limit the battery current to less than 20A.