

Smart Cube

the fully integrated solution



▶ Energy Controller

▶ DC EV Charging Module

▶ Battery

All-in-One design

Combining Hybrid Solar Inverter, DC EV Charger, Battery Pack, Energy Controller and integrating Heat Pump into one powerful energy system.

5 layers

Battery safety protection

5 mins

Fast commissioning

0 ms

Backup switching time

280 Ah

Large capacity battery cell

up to 20 systems

In parallel

4 layers

Comprehensive system protection

15 mins

Stackable installation

100 %

Off-grid power output

1-click

Full system diagnosis

960kWh

Max. ES capacity



Simple



Versatile



Robust



Smart

Energy Controller 3.0-6.0 kW Single Phase

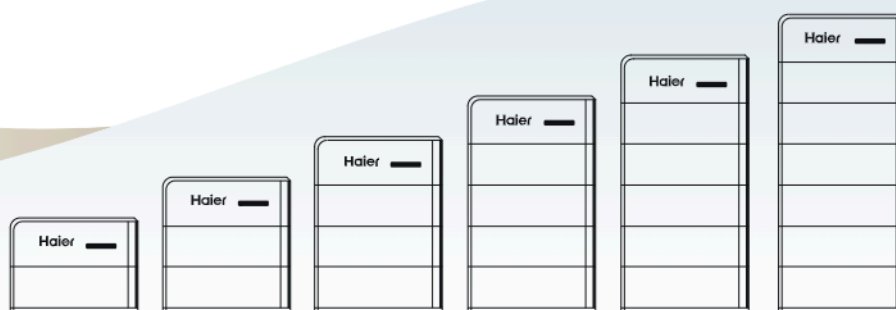
Smart Cube EC	HH1P-3K	HH1P-3.6K	HH1P-4K	HH1P-4.6K	HH1P-5K	HH1P-6K	Units
DC Input (from PV)							
Max. PV power	6000	7360	8000	9200	10000	12000	W
Max. DC input voltage				600			V
Nominal Dc input voltage				350			V
Start-up voltage				100			V
MPPT voltage range				50~550			V
Number of MPP.trackers				2			
Number of PV strings per MPPT				1			
Max.input current per MPPT				16			A
Max.short-circuit current per MPPT				20			A
AC Output (on-grid)							
Nominal output power	3000	3680	4000	4600	5000	6000	W
Max. output apparent power	3300	3680	4400	5000	5500	6600	VA
Nominal output current	13.6	16.0	18.2	20.9	22.7	27.3	A
Max. output current	15.0	16.0	20.0	22.7	25.0	30.0	A
Nominal output voltage				220/230/240			V
Nominal grid frequency				50/60			Hz
Power factor				0.8 leading ~ 0.8 lagging			
Total current harmonic distortion				THDi < 2%			
Efficiency							
Max. efficiency				98%			
European efficiency	97.0%	97.1%	97.2%	97.3%	97.4%	97.4%	
AC Output (backup)							
Peak output power (10 seconds)	4500	5520	6000	6900	7500	9000	W
Nominal output voltage				220/230/240			V
Nominal output frequency				50/60			Hz
Power factor				0.8 leading ~ 0.8 lagging			
Total voltage harmonic distortion				THDv < 2%			
Disruption time of backup switch				0			ms
Battery Connection							
Battery module models				HBP-5.0/8.0			
Number of modules per controller				1~6			psc
Battery module voltage range				300~600			V
Protection							
Safety protection feature	DC around fault protection, Arc fault circuit interrupter, DC reverse polarity protection Insulation monitoring, Residual current monitoring, Type II DC/AC surge protection Anti-islanding protection, AC overcurrent/overvoltage/short-circuit protection.						
General Data							
Dimensions(W / H / D)				700/300/245			mm
Weight				18			kg
Storage temperature range				-40~70 (-40~158)			°C (°F)
Operating temperature range				-30~60 (-22~140)			°C (°F)
Relative humidity range				0%~95%			
Max. operating altitude				4000 ²			m
Cooling				Natural convection			
System ingress protection rating				IP66			
Communication	WLAN/Fast Ethernet /RS485/Communication module(4G/3G/2G)						
Standard Compliance							
Standard	CE, IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477, IEC/EN 61000-6-1, IEC/EN 61000-6-2						

Energy Controller 5.0-25.0 kW Three Phase

Smart Cube EC	HH3P-5K	HH3P-6K	HH3P-8K	HH3P-10K	HH3P-12K	HH3P-15K	HH3P-17K	HH3P-20K	HH3P-25K	Units
DC Input (from PV)										
Max. PV power	8000	9600	12800	16000	19200	24000	27200	32000	40000	W
Max. DC input voltage										V
Nominal DC input voltage										V
Start-up voltage										V
MPPT voltage range										V
Number of MPP.trackers	2			3			4			
Number of PV strings per MPPT										1
Max.input current per MPPT										A
Max. short-circuit current per MPPT										A
AC Output (on-grid)										
Nominal output power	5000	6000	8000	10000	12000	15000	17000	20000	25000	W
Max.output apparent power	5500	6600	8800	11000	13200	16500	18700	22000	27500	VA
Nominal output current	7.6	9.1	12.2	15.2	18.2	22.8	25.8	30.4	38.0	A
Max. output current	8.4	10.0	13.4	16.7	20.1	25.1	28.4	33.4	41.8	A
Nominal output voltage										V
Nominal grid frequency										Hz
Power factor										0.8 leading ~ 0.8 lagging
Total current harmonic distortion										THDi < 2%
Efficiency										
Max. efficiency	98.1%	98.2%	98.3%	98.3%	98.3%	98.3%	98.3%	98.3%	98.3%	
European efficiency	96.1%	96.6%	97.1%	97.5%	97.7%	97.9%	97.9%	97.9%	98.0%	
Ac Output (backup)										
Peak output power (10 seconds)	7500	9000	12000	15000	18000	22500	25500	30000	30000	W
Nominal output voltage										V
Nominal output frequency										Hz
Power factor										0.8 leading ~ 0.8 lagging
Total voltage harmonic distortion										THDv < 2%
Disruption time of backup switch ¹										ms
Battery Connection										
Battery module models										HBP-5.0/8.0
Number of modules per controller										psc
Battery module voltage range										V
Protection										
Safety protection feature	DC around fault protection, Arc fault circuit interrupter, DC reverse polarity protection Insulation monitoring, Residual current monitoring, Type II DC/AC surge protection Anti-islanding protection, AC overcurrent/overvoltage/short-circuit protection.									
General Data										
Dimensions (W/H/D)										mm
Weight										kg
Storage temperature range										°C (°F)
Operating temperature range										°C (°F)
Relative humidity range										
Max. operating altitude										m
Cooling										Smart air cooling
System ingress protection rating										IP66
Communication	WLAN/Fast Ethernet /RS485/Communication module(4G/3G/2G)									
Standard Compliance										
Standard	CE, IEC/EN 62109-1, IEC/EN 62109-2, IEC/EN 62477, IEC/EN 61000-6-1, IEC/EN 61000-6-2									

Battery 5.0 / 8.0 kWh

Smart Cube BAT	HBP-5.0	HBP-8.0	Units
Performance Specification			
Battery type	LiFePO ₄		
Total energy capacity	5.38	8.06	kWh
Usable energy capacity ¹	5.2	7.8	kWh
Battery modules voltage range (single phase system)	300~600		V
Battery modules voltage range (three phase system)	600~900		V
Max. charge / discharge power	2500	4000	W
Peak charge / discharge power (10 seconds)	3750	6000	W
General Data			
Weight	55	70	kg
Dimensions(W/H/D)	767/270/260		mm
Storage temperature range	-25~60 (-13~140)		°C (°F)
Operating temperature range	-20~55 (-4~131)		°C (°F)
Relative humidity range	5%~95%		
Max. operating altitude	4000 ²		m
Cooling	Natural convection		
System ingress protection rating	IP66		
Installation method	Floor standing / Wall-mounted ³		
Standard Compliance			
Standard	CE, IEC/EN 60730-1, UN 38.3, IEC/EN 62619, IEC/EN 63056, IEC/EN 62040		



Number of battery modules ⁴	1	2	3	4	5	6	pcs
Total energy capacity	8.06	16.12	24.18	32.24	40.03	48.36	kWh
Max. charge / discharge power	4	84	12	16	20	24	kW
Total weight	112	183	254	325	396	467	kg
Total height (with base)	640	910	1180	1450	1720	1990	mm
Total width (with decorative covers)	850						mm
Total depth (with decorative covers)	260						mm

1. Test conditions: 100% depth of discharge, 0.2c average charge & discharge rate at 25°C, at the beginning of life

2. Possible derating occurring

3. Up to 2 battery packs

4. The data in the table is based on the combination of Smart Cube BAT 8.0 and Smart Cube EC three-phase as an example, with a ground mounted installation

