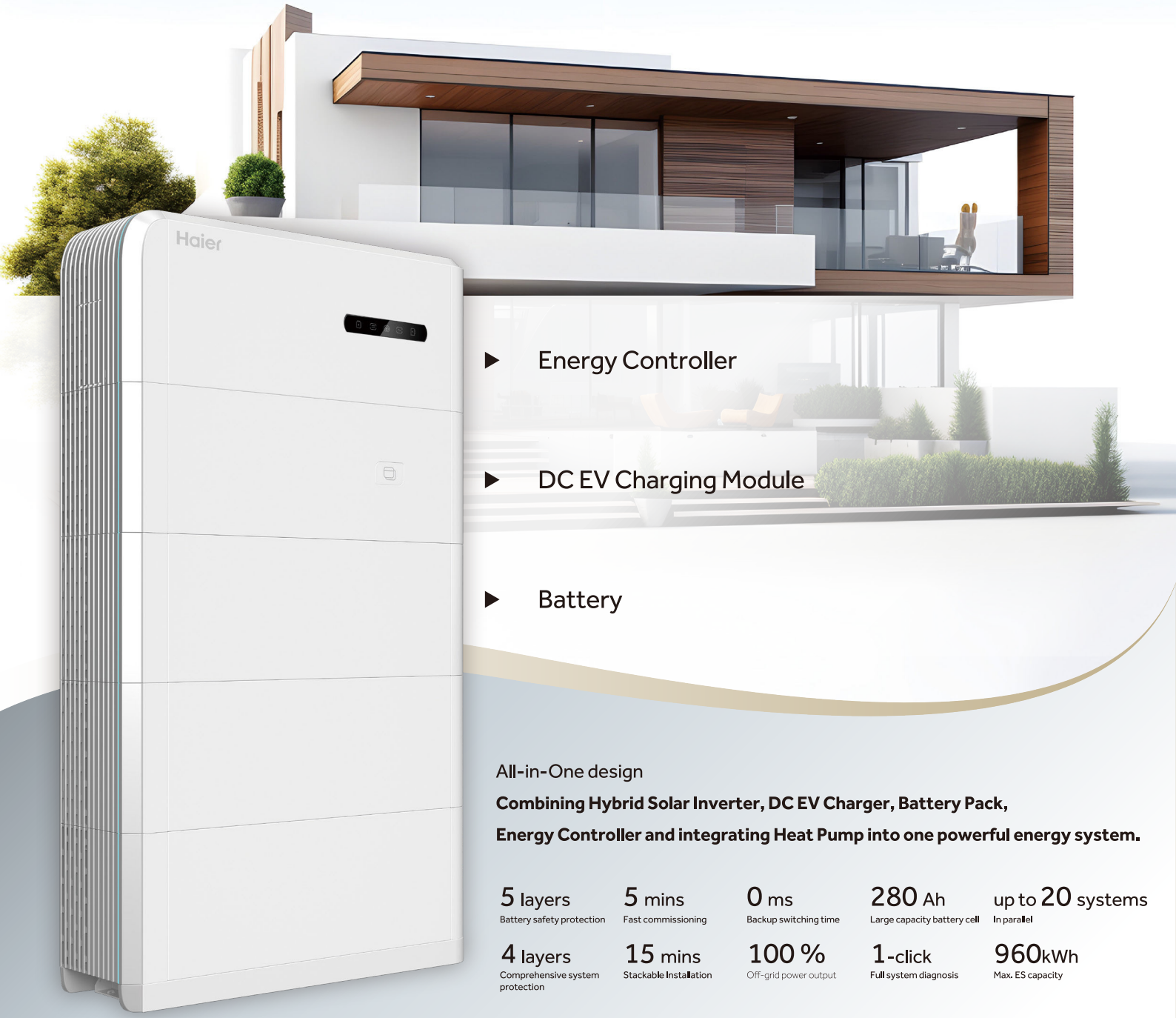
Haier

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

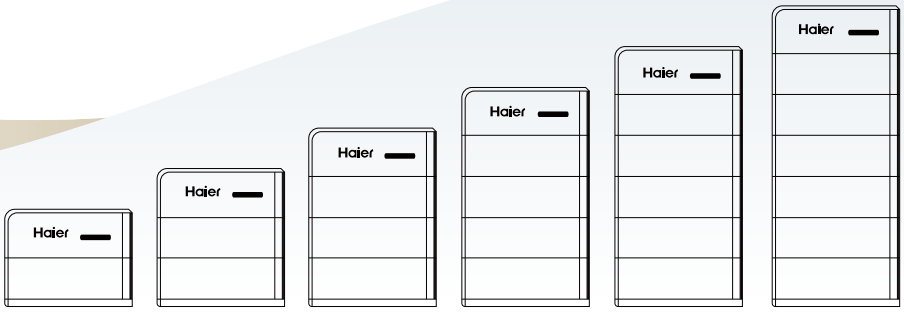
	HH1P-3K	HH1P-3.6K	HH1P-4K	HH1P-4.6K	HH1P-5K	HH1P-6K	Units
DC Input (from PV)							
Max. PV power	6000	7360	8000	9200	10000	12000	W
Max. DC input voltage	600						V
Nominal Dc input voltage	350						V
Start-up voltage	100						V
MPPT voltage range	50~550						V
Number of MPP.trackers	2						
Number of 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 effciency	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

	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	1100									V
Nominal DC input voltage	600									V
Start-up voltage	180									V
MPPT voltage range	160~1000									V
Number of MPP.trackers	2			3			4			
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	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	380/400									V
Nominal grid frequency	50/60									Hz
Power factor	0.8 leading ~ 0.8 lagging									
Total current harmonic distortion	THDi< 2%									
Efficiency										
Max. efficiency	98.1%	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	380/400									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[1]	0									ms
Battery Connection										
Battery module models	HBP-5.0/8.0									
Number of modules per controller	1~6									psc
Battery module voltage range	600~900									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)	700/300/260									mm
Weight	36									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	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

	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	8	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

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EV DC Charger

- Charge EV with 100% solar power
- Track & schedule charging on Haier Smart Cube APP
- Max. 25 kW stable bi-directional charging
- 150 V – 1000 V charging, wide EV compatibility
- V2X ready technology, future proof
- IP66 protection, maintenance free

EV DC Charger 12/25 kW

	HEVDC-12S2C5	HEVDC-25S2C5	Units
DC Output			
Max. charging power	12.5	25	kW
Max. discharging power (V2H, V2G)	12.5	25	kW
Output voltage range	150 ~ 1000		V
Max. output current	40	80	A
Charging interfaces	CCS2		
Protection			
Short-circuit protection	Integrated		
Over / Under voltage protection	Integrated		
Overload protection	Integrated		
Over temperature protection	Integrated		
Reverse polarity protection	Integrated		
Welded contactor check	Integrated		
General Data			
Dimensions (W / H / D)	700 / 270 / 260		mm
Weight	40		kg
Storage temperature range	-40 ~ 70		℃
Operating temperature range	-30 ~ 60		℃
Relative humidity range	5% ~ 95%		
Max. operating altitude	4000		m
Cooling	Smart air cooling		
System ingress protection rating	IP66		
Integrated charging cable length [2]	5		m
Function			
Authentication	RFID card * 1 /App /Auto-charge (no authentication)		
Application	Bi-directional V2X operation (X=Building, Home, Grid)[3], Smart load management		
User interfaces	LED indicator, App, RFID		
Remote function	OTA, Remote diagnosis		

1.EV DC Charger Module needs to be used together with Smart Cube Energy Controller.

2.ISO15118/DIN70121 compatible and V2X-ready technology. V2X functionality may be limited by EV's capabilities.

3.V2X functionality is limited by the EV's capabilities. Once the relevant standards are published and tested, V2X feature can be upgraded through the OTA. For the official support of vehicle models and support timelines, please refer to future announcement made on the official website.

Haier

Energy Gateway

- Multiple breaker positions reserved for Smart Cube or other loads
- Seamless switch to backup mode, worry-free energy usage
- Ready for generator, heat pump or other controllable loads
- Support both whole home backup & partial home backup
- 350 ms reverse power flow protection of grid & generator
- Uninterrupted power supply through PV+ESS/grid/generator

Energy Gateway

	HG-SS	HG-TS	Units
Grid Connection			
Grid connection type	Single phase	Three phase	
Nominal AC input / output voltage	220 / 230 / 240	380 / 400	V
Nominal AC input / output current	100	76	A
Nominal AC input / output power	22 / 23 / 24	50 / 52.6	kW
Nominal AC frequency	50 / 60		Hz
Disruption time of backup switch [1]	0		ms
AC Output to Backup port			
Nominal AC output voltage	220 / 230 / 240	380 / 400	V
Nominal AC output current	100	76	A
Nominal AC output power	22 / 23 / 24	50 / 52.6	kW
Nominal AC frequency	50 / 60		Hz
Overvoltage category	III		
Inverter Connection / EV Charger Port (optional)			
Max. number of connection	3	2	
Nominal AC voltage	220 / 230 / 240	380 / 400	V
Nominal AC input current	32	38	A
Compatible EV charger power	7	11 /22	kW
EV charging mode	Solar boost charging, time-based charging, load balancing		
Smart Port Connection			
Generator output voltage	220 / 230 / 240	380 / 400	
Nominal input / output current	63	76	A
Nominal AC input / output power	13.8 / 14.5 / 15.1	50 / 52.6	kW
Generator 2-wire start	Supported		
General Data			
Dimensions (W / H / D)	455 / 660 / 179	510 / 750 / 179	mm
Weight	19	23	kg
Storage temperature range	-40 ~ 70		°C
Operating temperature range	-30 ~ 55		°C
Relative humidity range	0% ~ 95%		
Max. operation altitude	4000		m
Cooling	Natural convection		
Ingress protection rating	IP54		
Communication	Fast Ethernet, RS485, dry contact		
Installation method	Wall mounted		

1. This refers to the load-side disruption time, to achieve this functionality needs to be used together with Smart Cube Energy Controller and Battery. Test conditions: In the open-circuit state of the power grid, the nominal power of Smart Cube Energy Controller is higher than the total power of the home loads.

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CommMod

- IP66 protection rating, more reliable
- Plug & play, easy to use
- Support 4G communication

Communication Module

	HC-U4G	Units
Connection interface	USB	
Installation type	Plug-and-play	
Display	LED indicators	
Dimensions(w / H / D)	52 / 112 / 33	mm
Weight	90	g
Ingress protection rating	IP66	
Power consumption (typical)	< 4	W
Supported standards	4G: FDD-LTE / TDD-LTE	
Storage temperature range	-40 ~ 70	°C
Operating temperature range	-30 ~ 60	°C
Relative humidity range	0% ~ 95%	
Max. operating altitude	4000	m
Controller / inverter compatibility	Smart Cube Energy Controller	

Haier

Power Sensor

- 1% high-accuracy power detection for precise control
- LCD real-time info display, easy to operate and check
- Integrates smoothly with Smart Cube devices, no need for setup
- Support export/import limitations and ready for AI evolving
- 100 ms data refresh rate, instantaneous data feed

Power Sensor

	HMS-CT120A	HMT-CT120A	HMT-CT300A	HMT-CT600A	Units
Power Supply					
Grid connection type	1P2W		3P3W / 3P4W		
AC input voltage range	176 ~ 276		173 ~ 480		Vac
Nominal AC frequency			50 / 60		Hz
Measurement Accuracy					
Voltage accuracy			0.5%		
Current accuracy			0.5%		
Power accuracy			1%		
Frequency accuracy			0.2%		
Communication					
Interface			RS485		
Baud rate			9600		bps
Protocol			Modbus RTU		
General Data					
Dimensions (W / H / D)	18 / 118 / 64		72 / 94.5 / 65		mm
Weight	0.07	0.20	0.20	0.23	kg
Storage temperature range			-40 ~ 85		°C
Operating temperature range			-30 ~ 60		°C
Relative humidity range			0%~90%		
Ingress protection rating			IP51		
Installation method			DIN Rail 35 mm		
CT Accessory					
Number of CT	1	3	3	3	pcs
Cable length of CT	1	1	1	1	m
Inner diameter of CT	16	16	24	36	mm
Weight of CT	0.09	0.09	0.2	0.4	kg
Max. operating current of CT	120	120	300	600	A
Standard Compliance					
Standard			EN 61010-1:2010, EN 61010-2-030:2010		

1. For more models refer to the Nahui website

Haier

EV AC Charger

- Green power charging with Smart Cube home energy solution
- Data tracking & scheduled charging on Haier Smart Cube App
- Dynamic load management to prevent overload, user-friendly charging*
- Easy installation with less steps and top/bottom entry option
- Integrated residual current failure protection reduces installation costs
- IP65 and wall-mounted installation provide high adaptability

* Only works with Smart Cube home energy solution and Smart Cube Power Sensor

EV AC Charger 7 / 11/22 kW

	HEVAC-7T2	HEVAC-7T2C5	HEVAC-11T2	HEVAC-11T2C5	HEVAC-22T2	HEVAC-22T2C5	Units
AC Input & Output							
Nominal charging power	7		11		22		kW
Nominal output voltage	1P/N/PE, 220 ~ 240		3P/N/PE, 220 ~ 240 / 380 ~ 415		3P/N/PE, 220 ~ 240 / 380 ~ 415		V
Output current range	6 ~ 32		6 ~ 16		6 ~ 32		A
Nominal AC frequency	50 / 60						Hz
Vehicle connection	Type 2 connector / Type 2 socket with shutters						
AC input cable width range	2.5 ~ 6.0						mm^2
Protection							
Integrated DC fault detection [1]	6						mA
Integrated AC fault detection [1]	30						mA
Flame retardant rating	UL94-5VB						
Over / Under voltage protection	Integrated						
Overload protection	Integrated						
Over temperature protection	Integrated						
PEN protection	Integrated						
TIC electricity linky meter interface	Integrated						
Randomized charging delay	Integrated						
Ground fault protection	Integrated						
Surge protection	Integrated						
Grounding system	TT, TN, IT						
User Interface & Communication							
Protocol	Modbus TCP						
Communication	4G / WLAN / Fast Ethernet						
Authentication	RFID card * 1 / App / Auto-charge (no authentication)						
Display	LED indicator / App						
Charging mode	Standard charging / Scheduled charging / Solar boost charging						
Metering	Integrated metering IC / Exteral meter with RS485 (optional)						
Dynamic load management	Supported						
Phase switching	Supported						
General Data							
Dimensions (W / H / D)	234 / 384 / 126						mm
Weight	4.5	6.4	4.5	6.4	4.5	6.4	kg
Storage temperature range	-40 ~ 70						°C
Operating temperature range	-30 ~ 55						°C
Relative humidity range	5% ~ 95%						
Max. operating altitude	4000						m
Cooling	Natural convection						
Ingress protection rating	IP65						
Installation method	Wall-mounted						
Application environment	Outdoor / Indoor						
Standby self-consumption	< 3.6						W
Standard charging cable length	0	5	0	5	0	5	m
Standard Compliance							
Standard [2]	EN IEC 61851-1, IEC 62995, EN IEC 61851-21-2, ETSI EN 300 330 V2.1.1, ETSI EN 301 511 V12.5.1, EN IEC 62311, EN50665, ETSI EN 300 328 V2.2.2						

1.Residual direct current protective device (RDC-PD) with integrated AC pulsating DC and 6mA DC detection, evalution and mechanical switching in the EV AC Charger is tested a ccording to IEC 62955.

2.For all standards refer to the certificates category in the website.