



SOLAX

# 4.6 kW / 7.2 kW / 11 kW / 22 kW

# **Installation Manual**

Version 0.0



www.solaxpower.com

## Safety

#### General Notice

- 1. Contents may be periodically updated or revised. SolaX reserves the right to make improvements or changes in the product(s) and the program(s) described in this manual without the prior notice.
- 2. The installation, maintenance and grid-related setting can only be performed by qualified personnel who:
  - Are licensed and/or satisfy state and local jurisdiction regulations;
  - Have good knowledge of this manual and other related documents.
- 3. Before installing the device, carefully read, fully understand and strictly follow the detailed instruction of the user manual and other related regulations. SolaX shall not be liable for any consequences caused by the violation of the storage, transportation, installation, and operation regulations specified in this document and the user manual.
- 4. Use insulated tools when installing the device. Individual protective tools must be worn during installation, electrical connection and maintenance.
- 5. Please visit the website www.solaxpower.com of SolaX for more information.

#### Descriptions of Labels



Note: The table is only used for the description of symbols which may be used on the EV-Charger. Please be subject to the actual symbols on the device.

# DANGER!

- Danger to life due to output and input high voltages in this device.
- Do not open the enclosure in any case without authorization from SolaX. Unauthorized opening will void the warranty and can cause lethal danger or serious injury due to electric shock.
- Do not use an extension cord on the EV-Charger, or it may cause a risk of fire or electric shock.
- Do not use the EV-Charger if the device has defects, cracks, abrasion, or shows other signs of damage.
- Disconnect the power supply to the EV-Charger before installation, maintenance and other operations.

# \Lambda WARNING!

- Keep away from flammable, explosive materials and humid or corrosive substance.
- The device is intended only for charging electric vehicles. Do not charge other devices.
- In case any emergency condition happens, press the EMERGENCY STOP button immediately, cut off all input and output power supply.
- During charging, the electric vehicle is not allowed to drive. Charging only when the electric vehicle stays still. For hybrid car, charging only when switching the engine off.
- Do not touch live electrical parts of the EV-Charger, especially when during charging.

- Keep children away from the EV-Charger.
- During operation, the EV-Charger may become hot. There may be burn injuries caused by hot surface.
- Incorrect operation or misuse may result in: Injury or death to the operator or third parties; Damage to the device and other property of the operator; Inefficient operation of the device.

## NOTICE!

- All operations shall be in compliance with local laws and regulations.
- Do not use cleaning solvents to clean any part of the EV-Charger. Clean the device with a clean, dry cloth to remove dust and dirt.
- All the product labels and nameplate on the EV-Charger shall be maintained clearly visible.

### Packing List



Item	Description	Quantity	Remark
/	EV-Charger	1	
/	Base plate	1	
А	Expansion tube	4 for Socket Type, 6 for Plug Type	For installation of the base plate and cable hook
В	Self-tapping screw	4 for Socket Type, 6 for Plug Type	For installation of the base plate and cable hook
С	R-type terminal	3 for single-phase, 5 for three-phase	For AC input connection

Item	Description	Quantity	Remark
D	M5 screw	4	For fixing the EV-Charger on the base plate
E	Panel	1	
F	M4 screw	1	For securing the panel
G	RJ45 terminal adapter	1	For communication connection
Н	RJ45 terminal	4	
I	RJ45 connector	1	For extension connection of CT
J	СТ	1	Single-phase CT for single-phase EV-Charger, three-phase CT for three-phase EV-Charger. The cable length of CT is 1 m. Only for connecting with the EV-Charger
К	Anti-theft accessory (a)	1	
L	Anti-theft accessory (b)	1	
М	ST3.5 screw	2	For securing anti-theft accessory (b)
Ν	RFID card	2	
0	Documents	/	
/	Cable hook	1	Only for Plug Type

#### Installation Site



#### NOTICE

- For outdoor installation, precautions against direct sunlight, rain exposure and snow accumulation are recommended.
- Exposure to direct sunlight raises the temperature inside the device. This temperature rise poses no safety risks, but may impact the device performance.



#### Installation Carrier



### Installation Angle



### Installation Space



#### Installation Tools



## Additionally Required Materials

No.	Required Material	Туре
1	RCBO *	Type A RCD with a trip current of $\leq$ 30 mA; 2P and rated current $\geq$ 25 A for 4.6 kW, 2P and rated current $\geq$ 40 A for 7.2 kW, 4P and rated current $\geq$ 20 A for 11 kW, 4P and rated current $\geq$ 40 A for 22 kW
2	AC input cable	Three-core copper wire for single-phase, five-core copper wire for three-phase; Outer diameter: 11-20.5 mm; Conductor cross-section for copper wire: $\geq 4 \text{ mm}^2$ for 4.6 kW and 11 kW, $\geq 6 \text{ mm}^2$ for 7.2 kW and 22 kW
3	Communication cable	Network cable CAT5 (better with RJ45); Conductor cross-section: 0.2 mm <sup>2</sup>
4	Meter (Optional)	Contact with the installer for type recommendation
5	Padlock (Optional)	With a diameter $\leq$ 5.5 mm
6	RJ45 coupler (Optional)	One-to-two in-line coupler

\* Please choose appropriate RCBO according to local regulations.

#### Supported Power Grid

Models named without "-E" support TN-S, TT (High-voltage), TT (Low voltage) and IT; models named with "-E" support TN-C-S.









#### Installation and Wiring

#### • Decide the application scenario before installation











#### • Installation and wiring steps











Pin Definition of Communication Ports								
		LAN CC	M2 COM1 MS-			8 1) White 2) Oran 3) White 4) Blue 5) White 6) Green 7) White 8) Brow	with orange ge with green with blue s with browr n	e stripes stripes tripes a stripes
• Pin Definitio	n of CC	M1-S-:						
Pin	1	2	3	4	5	6	7	8
Pin Definition	Х	Х	Х	A1	B1	Х	Х	Х
Pin Definition of COM2-M-:								
Pin	1	2	3	4	5	6	7	8
Pin Definition	L1_CT+	L1_CT-	L2_CT+	A2	B2	L2_CT-	L3_CT+	L3_CT-
Note: 1. PIN 3, 6, 7, 8 of COM2-M- is null for single-phase. 2. For A1 & B1 and A2 & B2, please refer to below table.								
Port	Pin	Single E	V-Charger		۱n	oarallel co	nnection	
COM1 -S-	A1 B1	Connec or other	ting inverte master de	er, Datał vices	nub As	secondary	/ EV-Cha	rger
COM2 -M-	A2 B2	Connec slave de	ting meter vices	or othe	r As	primary E	V-Charge	er

### NOTICE!

• When powered on after completing the installation, the system will automatically identify the grid data source of the grid side (Priority: Inverter > Meter > CT).













#### Power on

- Turn on the RCBO.
- Check the status of the LED indicator:
  - When the device is powered on, the buzzer will give a short sound, and the indicator light will be solid or breathing green ("Available" state) after three seconds by default. The EV-Charger has been successfully connected with network server if the indicator light is solid green and it is off-line if the light is breathing green.
  - Then the system will start self-checking automatically. After the checking process, if there is any fault, the indicator light will be solid red ("Faulted" state), please check if it is correctly installed and connected.
  - 3. If it works normally:

1) When the charging connector is not plugged, the indicator light will be solid or breathing green ("Available" state);

2) When the charging connector is plugged in but the device is not charging, the indicator light will be solid blue ("Preparing" state);

3) When the charging connector is plugged in and the device is in charging process, the indicator light will show as the "Charging" state (the color will be displayed according to the application scene and charging mode and the flowing speed will be determined by the charging power.



Name	Definition
Status indicator light	The status light will be on according to the state of the EV-Charger. For details, please refer to below table.
LCD screen (Optional)	The information of the EV-Charger will be displayed. (For details, please refer to the user manual.)
Card swiping position	Swipe RFID card here.

### Table: Description of the status indicator light

No.	State of the EV-Charger	Indicator light colour	Status of the light	Remark
1	Available	Green	Solid/ Breathing	The EV-Charger is powered on and available for usage. The EV-Charger is on- line when it has solid light, and off-line when it has breathing light.
2	Preparing	Blue	Solid	The EV-Charger is connected with the vehicle and waiting to start charging.
3	Charging	Solar - Green: Green Solar - Eco: Cyan Solar - Fast: Fuchsia Standard: Fuchsia Scheduled: Blue OCPP: Fuchsia	Flowing	The EV-Charger is in charging process. The flowing speed of the light is determined by the charging power. Different colours are displayed according to the application scene and charging mode.

No.	State of the EV-Charger	Indicator light colour	Status of the light	Remark
4	Finish	Cyan	Solid	The EV-Charger has completed charging.
5	Faulted	Red	Solid	The EV-Charger is in fault state. Please check the fault message on the App and refer to corresponding solutions in the user manual.
6	Unavailable	Yellow	Solid	The EV-Charger is not available for usage.
7	Scheduled	Blue	Flashing for 1 second	The charging connector of the EV-Charger is plugged in but it hasn't been the time for scheduled setting yet.
8	Reserved	Orange	Flashing for 1 second	The EV-Charger has been reserved by another user.
9	ChargPause	Same as the colour of Charging status	Stop flowing	The charging process is suspended. The light will stay in the current flowing position and flash for 1 second.
10	Update	Yellow	Flowing	The EV-Charger is remote upgrading. The light will be displayed based on the upgrading process.
11	CardActivation	Purple	Flashing for 0.5 second	The EV-Charger is waiting for card-swiping to activate the cards.
12	StartDelay	Blue	Flowing backwards	The EV-Charger is in the random delay starting process. Display according to the percentage of the remaining count down time to the total random delay time.

#### Wi-Fi Configuration



Create a new account, log in and follow the instructions on the SolaXCloud APP or the App guide at https://www.solaxcloud.com/ to set the WiFi configuration.

#### Note:

- \* If the WiFi connection fails, users can connect to the WiFi signal named after the device registration number and visit the IP address http://192.168.10.10/ in a browser to configure Wi-Fi. (Account: "admin"; default password: the Registration No.)
- \* If users connect to the network server through LAN, there is no need to set the
- WiFi configuration, as it will be automatically configured.

#### **General Setting**

Add device (For users who already have the App account) 1. Turn to the Home page or the Device page of the App and select the exact plant from the plant list on the upper left corner. 2. Touch the  $\oplus$  icon on the upper right corner of the **Home** page or the **Device** page, then touch **Add device**. 3. Follow the instructions to add the EV-Charger and complete the device network configuration. Note: The Registration No. can be found on the type label of the EV-Charger. Enter the setting page of EV-Charger  $\mathbf{X}$ < Settina Basic information > Charger setting > Advanced setting > Follow the path [Device > Select the exact plant from the plant list > Choose and touch the exact device from the **Device** list] to enter the setting page and complete 2 the settings of the EV-Charger as needed. Check and complete the basic settings of the EV-Charger Charger Setting  $\mathbf{X}$ < Plug&Charge 1) Activation mode Disable 2) Dynamic load balance 70/9600 3) Modbus Setting 1. Set the Activation mode (Plug&Charge by default) 2. Set the Dynamic load balance according to actual need. 3. If the EV-Charger is connected with Datahub, 3 Modbus Setting should be done. Check and complete the advanced settings of the EV-Charger < Advanced setting  $\mathbf{X}$ Application scene Solar 1) Charging phase L1 2) Three phase imbalance Disable 1. Set the Application scene (Solar by default). Parallel Setting Disable 2. If the EV-Charger is a single-phase one, the Disable Random charging delay Charging phase should be set according to the actual scenario. Earth\_Type TN 3) 3. Check and set the Earth\_Type.

Note: The instructions and screenshots in this section are based on V6.0.0 and taken only as examples, which may be slightly different from the actual display. For more details, please refer to the user manual.

### Technical Data

### • Model List

Models	4.6 kW	7.2 kW	11 kW	22 kW		
		X1-HAC-7P	X3-HAC-11P	X3-HAC-22P		
		X1-HAC-7S	X3-HAC-11S	X3-HAC-22S		
		X1-HAC-7P-L	X3-HAC-11P-L	X3-HAC-22P-L		
	X1-HAC-4P	X1-HAC-7S-L	X3-HAC-11S-L	X3-HAC-22S-L		
Specific model list	X1-HAC-4P-B	X1-HAC-7P-B	X3-HAC-11P-B	X3-HAC-22P-B		
specific model list	X1-HAC-4P-L	X1-HAC-7S-B	X3-HAC-11S-B	X3-HAC-22S-B		
	X1-HAC-4P-L-B	X1-HAC-7P-L-B	X3-HAC-11P-L-B	X3-HAC-22P-L-B		
		X1-HAC-7S-L-B	X3-HAC-11S-L-B	X3-HAC-22S-L-B		
		X1-HAC-7P-E	X3-HAC-11P-E	X3-HAC-22P-E		
		X1-HAC-7S-E	X3-HAC-11S-E	X3-HAC-22S-E		
General Data						
Models	4.6 kW	7.2 kW	11 kW	22 kW		
AC Nominal Input						
Phases/Lines	L+N+PE	L+N+PE	3P+N+PE	3P+N+PE		
Voltage [V]	230	230	400	400		
Frequency [Hz]	50/60; ±5	50/60; <u>+</u> 5	50/60; ±5	50/60; ±5		
Grid Earth Type	TN, TT, IT					
AC Nominal Output						
Voltage [V]	230	230	400	400		
Current [A]	20	32	16	32		
Power [W]	4600	7200	11000	22000		
Interface & Communication						
Communication interface	WiFi /	Ethernet / Bluetooth	n / RS485×2 / Optiona	al: 4G		
Protocol	OC	PP 1.6j, Modbus TCP,	Modbus RTU, Cloud	API		
Communicate with vehicle		IEC 61851-1, ISO 15118 (Optional)				
Authentication	Plug & Charge / RFID (ISO-14443-A) / APP					
MID meter	External (Optional)					
НМІ	RGB LED / APP / LCD (Optional)					
Remote control		APP 8	# Web			
Application		Residential / Destin	ation place / Public			
RFID	13.56MHz/1.1dBµA/m@3m					

Models	4.6 kW	7.2 kW	11 kW	22 kW	
Genaral Data					
Housing Material		Ρ	C		
Installation Method		Wall-mounted (Option	nal: pedestal-mounted	i)	
Charging Outlet		Socket Type (S Plug Type (Charging d	ocket-outlet) / cable with connector)		
Cable Length [m]		6.5 (for P	'lug Type)		
Operating Ambient Temperature Range [°C]		-30 to +50 (wi -25 to +50 (	thout screen) / with screen)		
Storage Temperature [°C]		-40 te	o +60		
Working Humidity		5%~95% withou	ut condensation		
Working Altitude [m]		<20	000		
Ingress Protection		IP65 for Plug Type, I	P54 for Socket Type		
Impact Resistant		IK10 for outer she	ell, IK08 for screen		
Protective Class		Clas	ss I		
Cooling Method		Natural	cooling		
Application Site		Indoor/	Outdoor		
Dimension (W×H×D) [mm]		390×2	06×139		
Net Weight [kg]	5 for Plug Type	3 for Socket Type, 5 for Plug Type	3 for Socket Type, 6.5 for Plug Type	3 for Socket Type, 6.5 for Plug Type	
Communication Info					
Communication Mode 1	WiFi				
EIRP Power	18.93 dBm (Measured Max. Average)				
Frequency	2412~2472 MHz				
Antenna Gain		2.83	3 dBi		
Antenna Type		Rod ar	ntenna		
Wireless Mode	802.11 b/g/n				
Communication Mode 2	LAN				
Enthernet	10/100 M (DHCP)				
Communication Mode 3	Bluetooth				
Bluetooth Version	5.0 (BLE)				
BT Modulation Type	GFSK				
Antenna Configuration	Single Transmitting (1T1R)				
Antenna Type	Rod antenna				
Antenna Gain or Antenna Spec	2.83 dBi				

### • Security & Protection

Models	4.6 kW	7.2 kW	11 kW	22 kW
Multiple Protection				
Over/Under voltage protection		Ye	es	
Overload protection		Ye	es	
Shorcircuit protection	Yes			
Current leakage monitoring	Integrate	d current failure moni	toring (30 mA AC & 6	mA DC) *
Grounding protection		Ye	es	
Surge protection	Yes			
Over temperature protection		Ye	es	
Cable protection	Cable Lock (APP control)			
Relay protection	Relay weld detection			
Safety Standard		IEC61851-1;	IEC62196-2	
Built-in PEN Fault Technology **		According to BS 767	1:2018 requirements	

\* This document does not replace any regional, state, provincial or national laws, regulations or standards that apply to the installation, electrical safety and use of the product. Always observe the local regulations as well. \*\* Only for models named with "-E".

# **Contact Information**

UNITED KINGDOM

Unit C-D Riversdale House, Riversdale Road, Atherstone, CV9 1FA

- +44 (0) 2476 586 998
- service.uk@solaxpower.com

#### TURKEY **C**\*

Fevzi Çakmak mah. aslım cd. no 88 A Karatay / Konya / Türkiye service.tr@solaxpower.com

# K 🔂 AUSTRALIA

21 Nicholas Dr, Dandenong South VIC 3175

- +61 1300 476 529
- service@solaxpower.com

# GERMANY

- Am Tullnaupark 8, 90402 Nürnberg, Germany
- +49 (0) 6142 4091 664
- service.eu@solaxpower.com
- 🖌 service.dach@solaxpower.com

NETHERLANDS

service.eu@solaxpower.com

service.bnl@solaxpower.com

+31 (0) 8527 37932

**SPAIN** 

+34 9373 79607 🚩 tecnico@solaxpower.com

Twekkeler-Es 15 7547 ST Enschede



3780 Kilroy Airport Way, Suite 200, Long Beach, CA, US 90806 +1 (408) 690 9464

WARSAW AL. JANA P. II 27. POST +48 662 430 292 service.pl@solaxpower.com

# ITALY

+39 011 19800998 support@solaxpower.it





# BRAZIL

+55 (34) 9667 0319 🔰 info@solaxpower.com

# SOUTH AFRICA

service.za@solaxpower.com

- info@solaxpower.com

# POLAND



# Warranty Registration Form



# For Customer (Compulsory)

Name	Country
Phone Number	Email
Address	
State	Zip Code
Product Serial Number	
Date of Commissioning	
Installation Company Name	
Installer Name	Electrician License No.

## For Installer

#### Module ( If Any )

Module Brand	
Module Size(W)	
Number of String	Number of Panel Per String

#### Battery ( If Any )

Battery Type	
Brand	
Number of Battery Attached	
Date of Delivery	Signature

Please visit our warranty website: <u>https://www.solaxcloud.com/#/warranty</u> or use your mobile phone to scan the QR code to complete the online warranty registration.



For more detailed warranty terms, please visit SolaX official website: <u>www.solaxpower.com</u> to check it.



## SolaX Power Network Technology (Zhejiang) Co., Ltd.

Add.: No. 278, Shizhu Road, Chengnan Sub-district, Tonglu County, Hangzhou, Zhejiang, China E-mail: info@solaxpower.com



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